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JET-P Study: Compilation of the EU's Experience on Just Energy Transition and Recommendations for Indonesia

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Content

INTRODUCTION

1.1 Objective and scope of the paper

The overarching objective of this paper is to inform Indonesia on lessons learned for a just energy transition process and related partnership arrangements based on experiences and knowledge gained from European countries and the EU. In addition, recommendations for Indonesia will be offered for how to deal with these insights on the national level and, more concretely, in certain local contexts. Based on a framework outlined in section 2.1 and the related research on the different case study selections in section 2.3-2.5, lessons learned are identified which are then, together with the considerations of the Indonesian context in section 3 applied to recommendations in section 4.

This approach will contribute to identifying customized policy and practice options that will allow Indonesia to more efficiently and justly reach their targets under the Paris Agreement. All of this supports more effective bilateral cooperation and should lead to increased awareness of the opportunities and challenges in implementing the Paris Agreement and more broadly for the EU and its partner countries' cooperation

1.2 Background

There is wide-reaching international consensus on both the increasing effects of climate change and that global efforts are the only way to solve this inherently global challenge. Under the Paris Agreement, 196 parties to the UNFCCC committed to limiting global warming to "well below 2°C above pre-industrial levels" and ideally to "limit the temperature increase to 1.5°C above pre-industrial levels" (The Paris Agreement, 2015). Since 2020, parties to the Agreement have been required to submit Nationally Determined Contributions (NDCs), with subsequent submissions meant to "ratchet" up ambition of the previous submissions.

Achieving ambitious emissions reduction targets for developing countries is often contingent on international support. Some countries, as is the case for Indonesia, communicate both an unconditional NDC and a conditional one, "subject to availability of international support for finance, technology transfer and development and capacity building (Republic of Indonesia, 2022)".

In light of the ability of international support to accelerate the ability for developing economies not only to decarbonize faster, but indeed also to grow their economies in ways that are decoupled with emissions growth and avoiding lock-in effects of heavy-emitting technologies, various efforts have been undertaken. One such effort is the so-called Just Energy Transition Partnerships (JETPs) implemented in a joint effort between France, Germany, the United Kingdom, the United States, the European Union (initial funders of South African JETP, and other G7 partners Canada, Italy, and Japan, as well as Norway and Denmark (known collective as the International Partners Group (IPG)) along with the respective countries targeted for the partnerships: South Africa, Indonesia, India, Vietnam, and Senegal.

The first partnership was launched with South Africa at COP26 with a financing amount of USD 8.5 billion which is meant to be leveraged through "various mechanisms including grants, concessional loans and investments and risk sharing instruments, including to mobilise the private sector" (European Commission, 2021). South Africa is the 14th largest emitter of GHG emissions (Carbon Brief, 2018) and coal accounts for about 70% of its energy mix (IEA, n.d.).

The other countries targeted for the JETPs are equally strategic in terms of being high-emitting countries with heavy reliance on high-emission fossil fuels and a willingness to pursue more ambitious mitigation policy subject to the availability of international funding and support. The JETP with Indonesia was launched at the G20 summit in Bali in November 2022. The announcement made at the Summit outlined the principles of a just energy transition (JET), highlighting that a just approach means that an energy transition must be affordable and sensitive to the most vulnerable populations, is one that provides opportunities and quality green jobs, can alleviate poverty and social inequalities, and is based in the full involvement of societally relevant stakeholders (European Commission 2022).

With this in mind, beyond the financing that can be made available, the IPG have a unique and important opportunity to share their experience on conducting energy transitions in a just and inclusive manner involving a broad suite of stakeholders and ensuring that the energy transition works for all involved.

JETs encompass a wide array of dimensions given their inherently multi-governance level and multi-faceted (topic-wise, actor-wise) challenge. Here, justice in energy transitions needs to be recognized along environmental and energy lines, distributionally, procedural justice (i.e., inclusivity in the

decision-making process, recognitional justice (being aware of power structures, how they are shaped and taking these into account when constructing fair transitions), and intergenerational justice – the posterity angle - understanding the impact of climate change and actions (or lack thereof) on future generations.

The JETP announcement and agreement with Indonesia encompasses some of these elements, though their implementation will benefit from being rooted in the practical experience of the IPG and beyond. Partners such as various EU MS (*inter alia* but not limited to Germany, Poland, Denmark) have all in various formats approached just energy transitions. The experiences vary from different stakeholder formats, work programs, awareness paid towards distributional concerns, and governance structures to facilitate the creation of fair agreements.

The JETP model provides a unique opportunity to provide a holistic blueprint to well-managed and fair transitions along the lines delineated above. One where combining EU (and IPG more-broadly) experiences into transposable policies can ensure that JETP resources are well-spent and provide the best possible outcome and opportunity to reach Indonesia's NDC commitments to the Paris Agreement in a just and fair manner.

The next section introduces policy dimensions important when implementing JETs and uses these to evaluate experiences with JETs in select cases in Germany, Poland, and Denmark. EU funding mechanisms targeting JETs are also briefly described and discussed at the end of the section. The third section provides an energy policy overview of Indonesia as well as experiences to date with selected elements of JET, and the final section provides recommendations for Indonesia on its path for a JET useful for coordinated efforts relating to the JETP.

2. EUROPEAN EXPERIENCES WITH JUST ENERGY TRANSITIONS

2.1 Key elements of a just transition framework

Just energy transitions are crucial for addressing climate change and ensuring that the shift towards sustainable energy sources is fair and equitable. There are many ways in which key elements of just transitions could be broken down. This policy paper opts for examining elements of long-term planning, stakeholder engagement, economic and social empowerment, and the provision of funding

mechanisms and how these aspects relate to ensuring movements away from traditional energy sources are implemented in a just manner. The next subsections will briefly introduce the aspects and explain why they are important for just transitions. The aspects are then applied to the case studies in the rest of the chapter in order to tease out their just elements. The aspects are revisited in the recommendations section.

Before diving in it is important to define what an energy transition is and how the word just relates to it.

Energy Transitions

An energy transition refers to a significant and often fundamental shift in the way society produces, distributes, and consumes energy. It typically involves a transition from one dominant energy source or technology to another, driven by various factors such as environmental concerns, technological advancements, economic considerations, and changing energy needs. Energy transitions can take place at various scales, from local and regional initiatives to national and global efforts. Key examples of energy transitions include the shift from traditional biomass and coal to fossil fuels (e.g., coal to oil and natural gas) during the industrial revolution and more recently, the transition then away from fossil fuels towards renewable energy sources like wind, solar, and hydropower to reduce carbon emissions and combat climate change. These transitions often have significant economic, social, and environmental implications and may require changes in energy infrastructure, policies, and behaviours to be successful.

Putting the Just in JET

There is therefore a growing emphasis to ensure that energy transitions are just. The term ‘just transition’, originally came from the labour movements in the United States during the 1990s, where it initially aimed at tackling socio-economic injustices in the context of society's shift away from fossil fuels. While this transformation brought about numerous environmental and health benefits, it also introduced adverse consequences, particularly impacting low-income households and vulnerable communities. These consequences included disruptions in employment, rising energy expenses, energy insecurity, and diminished local tax revenues.

It has since been widely researched and recognized that the concept of 'just transitions' is a multifaceted challenge (Krawchenko and Gordon 2021; Wang and Lo 2021; UNFCCC 2023; Cigna et al., 2023) that spans across various disciplines and levels of society. It encompasses political, socio-ecological, technological, and geo-strategic dimensions. Within the intricate landscape of global governance and interconnected market structures, climate and energy policies are now being shaped by a multitude of state, non-state, and transnational actors at the local, national, and international levels. Justice, though, as discussed in this policy paper focuses on the individual level. Justice can be viewed through a variety of different lenses, including (but not limited to):

- distributive justice - the focus on ensuring a fair distribution of benefits and burdens both within and between states
- procedural justice - striving for inclusive decision-making processes
- recognitional justice – the commitment to accounting for current and historic power inequalities
- intergenerational justice – the recognition that climate decisions now affect future generations.

Justice is an inherently normative concept and viewed here as the transformational goal to minimize costs, rebalance disproportionate burdens through the employment of societal safety nets, and harness the potential for 'green growth' during transitions. The aspects below ensure that the transformational goal can be achieved in a just manner.

1. Long-term policy planning

Long-term policy planning set targets and milestones for reducing greenhouse gas emissions and increasing the use of renewable energy sources, contributing to environmental sustainability. Effective policy planning also ensures that vulnerable communities are not left behind and that the benefits of the transition are distributed fairly. Beyond this it provides above all certainty. Investors and businesses need long-term policy clarity to make informed decisions, which can drive investments in clean energy technologies and infrastructure (Groß et al., 2021).

2. Stakeholder engagement

Stakeholder engagement policies refers to processes that aim to ensure that the voices and concerns of different communities, including marginalized groups, are heard and considered in energy transition

planning. This increases the legitimacy of energy transition initiatives, which can lead to greater public support and compliance. And finally, collaboration with stakeholders can lead to innovative solutions and approaches that may not have been considered otherwise.

3. Economic and social empowerment

Economic and social empowerment refers to the policies enacted to support workers in traditional fossil fuel related employment, who would otherwise lose their jobs due to energy transitions. The aim is to provide opportunities to reskill in order to find work in industries that are more future proof, e.g., ones that work with renewable energy, green solutions, etc. The ability to support the empowerment depends on the capabilities of the public sector to ensure appropriate funding but also a long-term strategy to guide skill development. In addition, vertical coordination is key to combine national and local levels in a coherent way.

4. Providing funding mechanisms

Just efforts needed to be coupled with deliberate and significant funding mechanisms – combining different levels such as local, national and supranational. Although JETs are often collaborative and real-world experiences show the benefits of multi-stakeholder approaches of both top-down and bottom-up initiatives, as well as the inclusion of civil society and private and educational institutions, the measures needed to ensure that the transitions are just are often expensive and require initial investment/funding. The authority deciding on the energy transition has an imperative to foot or facilitate the bill for just policies.

Communication

Underpinning all of the previous aspects is communication. Communication is essential for gaining/regaining the trust of affected communities, workers, and businesses undergoing a just transition. Being transparent and credible when discussing the reasons behind transitions and their advantages, while also addressing challenges, is crucial for garnering support and discovering suitable solutions. An effective communication strategy can enhance overall effectiveness by improving policies and programs, responsiveness by considering the needs of workers and communities, and accountability through clear explanations of policies and their impact (IISD 2018). This includes from a governmental standpoint being willing to listen through open dialogue with different stakeholders and

then also being attuned to the different concerns and attitudes of the various stakeholders, so that the feedback does not fall on deaf ears. A culturally-aware two-way communication structure and strategy can aid in trust building and achieving the best possible outcome.

2.2 The EU – driver of a just transition supranationally

Before turning the attention to a just transitions in selected EU Member States it is worth to reflect on the efforts being made on the supranational level, i.e. at the EU level. The EU has been guiding and supporting the energy transition processes in the Member States in various ways (Oberthür and Dupont, 2021). 15 Years ago, a landmark policy package, was adopted which set ambitious targets for greenhouse gas reduction, renewable energy expansion and energy efficiency improvements for 2020. Member States are working together to implement their international climate commitments such as National Determined Contributions and the EU established the EU Emissions Trading System (EU ETS) (Directive 2003/87/EC) which now is to be complemented by the EU ETS 2 (ibid.) covering heating and road transport.

To make the EU sustainable and achieve climate neutrality by 2050, the European Commission launched the European Green Deal in 2019. In this context, the EU has committed to reducing its GHG emissions by 55 percent by 2030 and to achieving climate neutrality (i.e., net zero GHG emissions) by 2050. Beyond the wide-reaching policies and targets, an important pillar of the Green Deal is the principle of no one left behind. To this end, the European Union has a series of financial and regulatory instruments aimed at ensuring a sustainable and socially equitable transformation of its economy, particularly as it seeks to meet ambitious climate goals and adapt to technological changes. Below is a brief overview of the different instruments.

The Social Climate Fund

The Social Climate Fund, is a new initiative stemming from the Fit for 55 package (policy package to enable reaching the target of 55% reduction by 2030). With the rules formerly adopted in April 2023, it is designed to provide financial support to individuals and businesses facing the greatest impact of the

newly implemented EU ETS2. The fund aims to address energy poverty while enhancing access to zero- and low-emission mobility and transport within the EU.

Just Transition Mechanism

The Just Transition Mechanism is a comprehensive framework to support those EU Member States that are the most reliant on fossil fuels and emissions-intensive industries. The purpose of the mechanism is to ensure that these areas can smoothly transition towards a more sustainable, low-carbon economy. To do so, it provides financial assistance, technical expertise, and social support to help communities and workers adapt to new economic structures. EUR 55 billion are aimed to be mobilised between 2021-2027 (European Commission, n.d.).

The mechanism comprises three main pillars:

1) the Just Transition Fund, which offers direct financial assistance;
2) the Just Transition Scheme under InvestEU; and
3) the public sector loan facility offered by the European Investment Bank to stimulate economic development in these regions.

Energy Communities (as outlined in the RED Directives)

Energy Communities, as outlined in the RED (Renewable Energy Directive), are local or regional groups that come together to collectively develop, manage, and benefit from renewable energy projects. These communities facilitate citizen participation and ownership in the renewable energy sector, ensuring that the benefits of the energy transition are widely shared. Citizens are able to invest in renewable energy assets and play a more active and direct role in their communities' energy transitions, in addition to benefitting from increased energy efficiency, lower electricity bills and local job creation. The RED provides the framework for national transposition to help facilitate the creation and operation of energy communities (European Commission, n.d.).

European Fund for Regional Development (EFRD)

The European Fund for Regional Development is one of the EU's main structural funds, designed to reduce economic, social and regional disparities within the (European Commission n.d.). Over the course of 2021 – 2027, the fund provides financial support to promote economic growth, employment, and sustainable development in various EU regions. The EFRD seeks to fund investments that will enhance innovation and digitalisation, support small and medium-sized businesses (SMEs), reduce carbon-dependency and increase climate resiliency, enhance mobility, support social objectives such as strengthened education and equal access to healthcare, and support locally-led sustainable urban development.

European Social Fund (ESF)

The European Social Fund Plus is the EU's primary instrument to improve employment opportunities, social inclusion, and living standards across the EU. The ESF+ supports a wide range of initiatives, including education, training, and employment programs. It brings together four funding instruments that had been previously separated: the European Social Fund, (ESF), the Fund for European Aid to the most Deprived (FEAD) the Youth Employment Initiative and the European Programme for Employment and Social Innovation (EaSI). In its financing of the European Pillar for Social Rights, the ESF+ can be used to help upskill and reskill workers affected by the shift away from carbon-intensive industries (European Commission, n.d.).

InvestEU Just Transition Scheme

The InvestEU Just Transition Scheme is part of the broader InvestEU program, which aims to mobilize public and private investment to support sustainable and inclusive growth in the EU. A pillar of the Just Transition Mechanism, the scheme specifically targets investments in regions facing significant socio-economic challenges due to the transition towards a greener economy. It helps attract private capital to finance projects that contribute to the just transition, fostering economic diversification and job creation in affected areas. The scheme is expected to mobilise 10-15 billion EUR in primarily private sector investments (European Commission, n.d.).

European Investment Bank Loan Facility

The European Investment Bank (EIB) Loan Facility is a financing instrument that offers loans and credit lines to support regions, industries and workers who face the greatest challenges in embarking on the green transition. Also a pillar of the Just Transition Mechanism, the loan facility combines EU grants with EIB loans, which is anticipated to mobilise EUR 18.5 billion of public investment (European Commission, n.d.).

2.3 Denmark – Unions, long-term planning, and consensus politics: example of the port of the Esbjerg

Background:

Denmark is in the process of undertaking a remarkable energy transition, moving away from coal and embracing renewable energy sources, particularly wind energy. The country's transformation is exemplified by its substantial reliance on wind power, which now accounts for 46.8% of the nation's electricity supply (International Trade Administration 2022). This achievement can be attributed to a combination of proactive government policies, subsidies, and substantial public investments that have made sustainable energy sources increasingly appealing. In addition, the establishment of wind cooperatives, incentivised by favourable tax policies, has played a significant role in localising and expanding wind energy.

Communities along the coastal areas of the North Sea are a particular focus of the Danish green transition. Large proportions of individuals in cities such as Esbjerg (home to the Port of Esbjerg) have relied on the oil and gas sector for employment, with the port currently employing more than 10,000 workers, where for most, the jobs are connected to the sector.

The Port, serving as a useful microcosm for Denmark’s approach to a just transition, has engaged in a holistic manner to overhaul its reliance on the fossil fuel industry and move towards an economic model deeply connected to the business of green technology. Alongside, the Port has pursued policies to retrain workers and serves as a pioneer for energy efficiency and green policy in their day to day operations. The analysis of the Danish case study below follows the four key elements laid out in section 2.1.

1. Long-term Policy Planning:

One important feature of successful transition processes in Denmark in the energy sector is an early establishment of the key structures of target setting, financial incentives and stakeholder engagement. This is well exemplified by the Danish Climate Law. It is one of the most ambitious climate legislations worldwide, aiming for a GHG emissions to be reduced by 70% compared to 1990 levels by 2030, a far higher goal than the EU-mandated reduction of 55% by 2030 (Ibid.). These and other ambitions are set to have the country reach climate-neutrality by 2050, in-line with the 1.5° warming set in the Paris Agreement. As part of its efforts to reach its targets, the government committed to phasing out oil and gas by extraction by 2050 and has cancelled all future oil and gas extraction tender rounds as of 2020. Esbjerg is the region most affected by these policies and the government commitment included a EUR 12 million (DKK 90 million) to support the Port of Esbjerg in building out its existing capabilities as a hub for large-scale offshore wind (Krawchenko and Gordon, 2022).

The Port of Esbjerg has invested heavily in infrastructure to support the offshore wind industry. This includes the development of port facilities capable of handling the large components used in offshore wind turbines. This has happened side by side with efforts to improve the port's own environmental performance, such as by increasing energy efficiency, adopting renewable energy technologies, and reducing emissions from port operations. It is important to note that actors working the Port have highlighted that the transition of the main economic activity in the port has to happen gradually so that companies, industries, and firms supporting the activities of existing oil and gas related infrastructure also have time to adapt and change their business models to accommodate the newer greener business approaches.

Takeaways:

- *The government has set clear targets for the phaseout of fossil fuels and the concrete and ambitious emissions reduction targets*
- *The phaseout of oil and gas production is long-term: 2050 is the year operations will cease but no new tenders are issued as of 2020*

- *Long-term policy planning and government subsidies offsetting the stranded assets from the oil and gas producers allows for lower-risk investments into greener and future-proof technologies*
- *Gradual well-planned shifts allow companies supporting operations of existing infrastructure also to adapt to the new industrial operations being set up in the port.*
- *The port produces its own long-term strategies including sustainability strategies*

2. Stakeholder Engagement:

Unions play a significant role in the creation of (climate and energy) policy in Denmark. This has ensured that transitioning of workers is a forethought not an afterthought in the planning of new infrastructure, technology expansion, and phasing out of fossil fuel industries. The Port of Esbjerg has also collaborated closely with wind energy companies and other industry partners. This collaboration includes working together on infrastructure projects to make the port more suitable for the needs of the wind industry and coordinating on logistics and operations to ensure the efficient shipment of wind turbine components. Additionally, due to the rapid increase of the industry, the harbour was extended by 500,000 square meters, for which environmental groups were involved in the planning to ensure that there were no disputes after decisions were made (Ristau, 2022). There was an inherent understanding that phaseout of fossil fuel activities in the port had to be coupled with an increase of other types of economic opportunity, relating to sustainable industries.

The Port of Esbjerg engages with the local community and the broader public to communicate its transition plans and gather input. This includes public meetings, surveys, and consultations aimed at understanding and addressing community concerns and needs. They also actively engage with local education and research institutions including technical colleges which allows for streamlined employment pathways to working in the Port.

Stakeholder engagement extends beyond national partners, and in May of 2022, the government of Denmark, met with neighbouring countries with access to the North Sea - Belgium, the Netherlands and Germany - where they signed a declaration outlining their aim to expand offshore energy projects and hubs, called “The North Sea as a Green Power Plant of Europe”. Their aim is it to expand the use of renewable energy sources and thereby achieve climate neutrality whilst also being less dependent on

Russian oil, coal and gas. They set a combined target of 20 GW production capacity by 2030 (Wind Europe, 2022).

Takeaways:

- *Broad stakeholder engagement and integrated planning has allowed for efficiencies and acceptance in the efforts to transition the local economy.*
- *Collaboration with neighbouring countries allows for the combination of resources and ambition.*

3. Economic and social empowerment:

The Danish Climate Law stipulates that the green transition must go hand in hand with and retain a strong welfare society, where climate measures are balanced with social measures. This is in part realized in the Port through the development of an "Offshore Academy". The Academy, which is currently being developed with the United Federation of Workers in Denmark, will train skilled and unskilled port labour to have the skills relevant for the future economic opportunities in the industries in and around the port. Beyond the Offshore Academy the Port is collaborating with educational institutions and industry partners to develop training programs aimed at preparing workers for jobs in the renewable energy industry. These programs can help ensure that there is a skilled workforce ready to support the growing renewable energy sector.

The increased focus on wind energy has resulted in large-scale employment for the Esbjerg's inhabitants. In 2022, already one in nine jobs in the port were directly dependent on wind power, resulting in around 5,000 people directly employed in the industry.

Takeaways:

- *The transition approach is embedded in the national ethos and customs*
- *Workers are not responsible for the loss of their jobs and there are active programs to retrain them*

4. Providing Funding Mechanisms:

In addition to the EUR 12 million (DKK 90 million) committed to support Esbjerg in its transition away from oil and gas, the port also recently received over EUR 26 million (DKK 200 million) to bolster the infrastructure development in the Port. PensionDanmark is a labour market pension fund which the Port of Esbjerg has entered into a cooperation agreement with. The fund provides investment of over EUR 930 million (USD 1 billion) for green energy projects, with a focus on offshore wind. The fund has said that they will invest around EUR 770 million (DKK 5.8 billion) into the offshore wind turbines construction facilities in the port due to the importance it has in expanding offshore wind generally. Additionally, investments of approximately EUR 65 million (DKK 500 million) are expected to be invested into the Port as a whole due to its standing as a multi-modal hub. This includes interconnection between sea transport, road network and rail, as well as connections to air freight (Future Fuels, 2023). Additionally, the Nordic infrastructure fund Infranode is investing up to EUR 130 million (DKK 1 billion) into new infrastructure facilities in the Port, creating as many as 2,000 new jobs (Skopljak, 2020).

Recent additions have continued to make the port attractive for companies and workers, through which the region continuously grows in economic importance and provides revenue for the region and the country as a whole. The port alone is home to more than 200 companies, employing around 10,000 workers which are all able to profit off of the developments and investments made into the area (State of Green, 2022).

A key aspect of the overall success of Denmark's energy transition was the early development of energy taxes. Introducing one of the world's first carbon taxes, added on top of existing coal, gas and oil taxation, in 1992, allowed environmental considerations to be integrated into their tax structure

and provided a funding mechanism for the energy transition. The country also pioneered the use of a CO2 emissions trading system. The combined revenue of these taxes and trading system was significant in providing the government with sufficient funds to invest in energy efficiency programs and research and development in renewables (Thibault, 2021).

Takeaways:

- *Port Esbjerg uses specific funds for green infrastructure and energy to fund their large-scale restructuring. The investments in turn create jobs and economic revenue which is able to flow back into the region and create a circular economy.*
- *In a broader sense, Denmark has pioneered the introduction of specific carbon taxes and the use of CO2 emissions trading, both of which are able to generate revenue for the government which can be reinvested in energy efficiency and research programs.*

2.4. Poland – Lessons learned from the Upper Silesia Coal Region

Background:

Poland has been historically, and continuous to be to this day, a nation heavily dependent on coal, both for energy supply and employment. The phase-out of coal has therefore posed a political, social and economic challenge, which is being tackled in collaboration with the EU and regional programs. The Upper Silesia region has received funding to assist its just coal transition from the EU Cohesion Policy, in order to invest in infrastructure, public services, alternative employment opportunities, retraining opportunities and to support the development of alternative energy sectors to reduce the risk of economic slowdown. The regional program in the Silesia region focuses on creating conditions for economic development and emphasizes economic diversification away from coal. Regional development is further advanced through bolstering institutional capacity to assist the just transition, such as through the Regional Centre for Analysis and Strategic Planning within the regional executive office of Silesia. Transitioning away from coal can provide economic opportunities to empower

communities, embrace new technologies and aid local development in terms of new opportunities and jobs.

1. Long-term Policy Planning:

Poland's phase-out of coal is planned to be gradual, over the span of three decades, with the last mine closing in 2049. Eventually, the country is planning to replace its coal-fired power generation capacity and substitute it with increased production of renewable energy. The focus here lies on offshore wind, as well as nuclear energy in order to stabilize the increasingly RES-dependent power grid (Christiaensen et al., 2022). But crucially, Poland continues to rely on coal, outlining in the "Program for hard coal mining", adopted by the national government in 2018, that in 2030 the Polish economy will still require up to 86 million tonnes of hard coal. This has also led to serious investments to assist the industry which has been declining continuously in the past decades. Since the 1980's, the number of Polish mines has decreased due to international competition from 70 to 21 in 2017 (18 of which are in Silesia (Zuk et al., 2021)), but state support continuous to be funnelled into the sector (Skoczkowski et al., 2020). Policy development in Poland in regards to a green transition is stagnating, and often delayed due to various factors. Political uncertainties and indecision on the future of the energy sector make long-term policy planning difficult. Regional strategy for the sustainable socioeconomic transition is often lacking, which is one of the reasons why Silesia's coal mines still receive public investments. Silesia, and other European regions, still struggle to build a "culture of industrial transformation" required to gain public support by the local industrial ecosystem (European Commission, 2017).

Takeaways:

- *Continuous financial investments into the coal sector have assisted the declining industry in order to minimize the social burden.*
- *A gradual transition allows for slow adaptation to new industries.*
- *Political uncertainties and indecision have led to stagnating progress on the phase-out, which should be revised as soon as possible in order to achieve EU targets for net-zero by 2050.*
- *Regional strategy is minimal, which also hinders the specific progress which is able to be made.*

2. Stakeholder Engagement:

Due to the social importance of mining in the Silesia region, workers unions have been continuously involved in the transition process. Hard coal mining employs 80,000 people, which is 5% of the total labour force in the region (Kiewra et al., 2019). Strong opposition from these mining unions has led to a new subsidy scheme, covering the price difference between domestically produced and imported hard coal. This allows for the extension of the mine closures to the year 2049, although their profitability has been reduced by decreased productivity and increased labour costs – and the overall impact of the EU ETS. By involving the opinions of the workers unions, the subsidy scheme can be seen as a compromise to allow for the transition to be just. The agreement between the national government and unions includes social protection for miners losing their jobs, supporting "clean coal" technologies, and measures to boost the domestic demand for coal to improve the profitability of the sector. Delayed discussions with stakeholders have increased the challenge of developing an effective Territorial Just Transition Plan for the Silesia region. This also poses a risk for the funding mechanism, as this is dependent on continuous commitment to the objective of achieving a climate-neutral European Union by 2050 (Sniegocki, 2021).

Takeaways:

- *Engagement of workers within the affected sectors allows the interests of citizens to be taken into consideration.*
- *Furthermore, as unions are very important in Polish society, they were and are heavily involved in the transition discussions, which have facilitated the input of important viewpoints, but has also caused delays and issues with the progress made towards achieving the energy transition.*
- *In order to minimize the social hardships of rising coal costs and the structural transition itself, a subsidy scheme assist workers and their families.*

3. Economic and Social Empowerment:

In order to compensate for the impacts a coal phase-out will have on the employment of mine workers, a transition to other sectors has been encouraged. Industries such as industrial processing, transportation, or construction are relatively large, so are able to provide significant employment opportunities. Additionally, the structure in terms of education and age of employees is similar to that required for mining. A transition to these sectors is therefore possible for those who will not have reached age of retirement by the time their mine closes. The majority of workers will leave the mining sector by natural attrition, meaning by retirement (Kiewra et al., 2019). Between the years 1990-2016, the Polish government invested an additional PLN 86.5 billion (EUR 19.5 billion) to support early retirement opportunities for miners in the region (Skoczkowski et al., 2020). Silesia has committed 22% of its Regional Operational Programme funds to promote a low-emission economy. Concurrently, the region is actively developing its Strategy of Economic Development, which considers the requirements of regional economic growth, and has also published a Regional Revitalisation Policy which outlines its strategy to counteract environmental degradation and social issues related to job-loss around mining (coal), improving investment attractiveness of the region, and redeveloping/rehabilitating brownfield sites. The strategy was created in a process of consultations with representatives from the scientific community, local government officials, and non-governmental actors (Silesian Voivodeship, 2022). Furthermore, Silesia focused on various sectors in its Regional Innovation Strategy for 2013-2020, which encompasses energy, medicine, information and communication technologies, green economy, and emerging industries such as eco-industries, creative industries, maritime industry, and mobility industries, along with mobile services and personalized medicine. In 2019, the region adopted the Regional Transformation Action Plan, which not only identifies the challenges and issues at hand but also outlines three key operational objectives – 1) Improving the quality of life in the region by reducing emissions, enhancing building conditions, supporting education and infrastructure, and upgrading preventive healthcare measures. 2) Promoting economic competitiveness through support for innovation adoption, strengthening the innovation potential of universities and research and development entities, and encouraging the use of modern technologies in traditional sectors while addressing environmental concerns. 3) Encouraging the growth of creative industries and leisure activities in the region (European Commission, 2020).

Takeaways:

- *Encouraging a transition into other similar sectors is essential to the Polish just transition process. Employment opportunities can be encouraged through regional investments into more sustainable industries.*
- *Additionally, opportunities for early retirement or reskilling programs allow this process to support workers.*
- *Re-using closed mines and industrial complexes for nature-based solutions, as well as renewable energy production allows for both the involvement of the local population in terms of employment and the continued economic and social empowerment of the region.*
- *Multi-level consultations and considerations can support regionally cohesive development plans*

4. Providing Funding Mechanisms:

Much of the region's transformation is funded through the European Union. Three funds in particular play a crucial role here. Under the Regional Operational Program, the Silesian region is able to receive EUR 2.8 billion, financed by the European Regional Development Fund and the European Social Fund Plus. The Just Transition Fund provides another EUR 2 billion in funding for this specific region. The Silesian Marshal Office presented their proposed allocation of the funds within the regional operational programme, which makes it the first Polish region to outline specific priorities for the Territorial Just Transition Plan, guiding the use of resources from the JTF. All three funds will guide and support a broad set of measures, aimed at strengthening the region's economy, improving the livelihoods of the population and supporting projects within the green transition. To be fully transparent, the regional authorities have created a dedicated webpage, which provides information on the just transition process and the funding involved (Sniegocki, 2021).

Takeaways:

- *The majority of the structural transformation is financed through existing funding mechanisms of the European Union.*
- *Specifically, regional and just transition funds are helpful to strengthen regional economies and improving the livelihoods of the local population.*
- *Continuous updates on dedicated webpages allows for full transparency of the just transition process generally, and the funding mechanisms involved.*

2.5 Germany – the Coal Commission

Background:

Germany's energy transition, known as the "Energiewende," is a comprehensive policy approach aimed at significantly changing the country's energy system. The concept of the Energiewende dates back to the 1970s but gained significant traction in the early 21st century. The primary objectives of the Energiewende are phasing out nuclear energy (where the last plants were decommissioned in the spring of 2023), reducing GHG emissions, with the current reduction goal being 65% by 2030 compared to 1990 levels and climate neutral by 2045 (with renewables to account for 80% of electricity generation by 2030), improving energy efficiency, and all while maintaining the social and economic objectives of creating new jobs, ensuring affordable energy prices and energy security, and making sure no one is left behind in the transition.

A significant pillar and useful example of Germany's approach to the Energiewende can be viewed through the decisions taken as part of Germany's "Commission on Growth, Structural Change and Employment" also known as the Coal Commission. The German Coal Commission was established in June 2018 placed under an official mandate by the Federal Ministry for Economy and Energy to assess the impacts of the planned coal phase-out on the country's energy transition, as well as the social and economic consequences such a change carries with it. The members of the commission represent a broad spectrum of relevant stakeholder, ranging from representatives from the energy sector, scientific experts, industry partners, union, environmental groups, citizens initiatives to actors from the German state itself. Since its creation, they have formulated recommendations, grounded within

global developments and classifications taken from international agreements. These recommendations include supporting workers within the industry to retrain or go into early retirement, involve different actors in order to reach socially acceptable collective agreements (in reference to the Coal Exit Law), compensation mechanisms in order to keep the cost of the transition away from consumers, and more generally advocating for a socially balanced distribution of advantages and burdens within the energy transformation.

Although five years later the energy transition process in Germany is a highly contested playing field – mainly due to rising energy prices and repercussion of the Russian war of aggression in Ukraine on the energy security of the country – the work of the Coal Commission has had profound impacts. Elements of the recommendations are clearly visible in Germany's just energy transition policies, implemented through regional and national projects in order to facilitate the path towards net-zero. The recommendations are not legally binding, but first have to be translated into law and political action on both national and state level (E3G, 2019).

1. Long-term Policy Planning:

In order to reliably meet the targets which were set, comprehensive impact assessments were set out in the commission's mandate. The federal Climate Change Plan set the target to reduce emissions from the energy sector by 61 to 62 percent by 2030, for which the contribution of the coal phase-out is essential. In order to meet these targets, the measures outlined by the coal commission must be aligned with changing circumstances. These include the necessary associated legal, social, economic and structural measures. Progress reports are to be written in the years 2023, 2026, and 2029 in order to closely monitor and review the implementation of the measures recommended. The reports are to be presented by the federal cabinet, as well as the Parliament.

Takeaways:

- *Setting achievable targets, which are in-line with the Paris Agreement is essential to achieving a just energy transition. This is, among others, done through setting staggered*

targets, such as reducing emissions by at least 61% by 2030. This creates a timeline for action until the final target of a full phase-out of coal by 2038.

- *Additionally, progress reports every three years allow close monitoring of the implementation of measures and can allow for adjustments to be made.*
- *Encompassing all legal, social, economic and structural measures into these reports and targets is vital for the just transition. These are set out in the legislative package to "Strengthening Growth, Structural Change and Employment" in the lignite mining areas and coal-fired power plants (BMWi, 2019).*
- *The federal government assists municipalities through providing planning and administrative capacities (BMWi, 2019).*

2. Stakeholder Engagement:

The commission was set up with the intention to engage with all groups affected and involved in the phase-out of coal. It therefore has representatives from the energy sector itself, the lignite mining regions, industry, environmental associations, trade unions, scientific experts and the coalition parties of the government. In the short and medium term, federal government offices, with a total of 5,000 employees were set up in the affected regions, implemented until at the latest 2028 (Litz et al., 2019). Not only business and government stakeholders were engaged by the commission, but also those directly affected by resettlements near lignite mines. In order to protect the livelihoods of these people, they were fundamentally involved in the process. Furthermore, the commission recommended direct engagement with residents in the mining regions to adjust open-cast mining plans as promptly as possible, in order to provide those affected by resettlements with a reliable basis for planning. The engagement with a multitude of stakeholders ensures legitimacy and credibility, and allowing for high stability of the reached policy outcomes (E3G, 2019). In order to ensure correct implementation of the measures recommended, an independent panel of experts continuously monitors the progress and reveals any shortcomings, which can then be adjusted accordingly by the federal government. Criticism was voiced at the limited involvement of representations of interests coming from human rights

organizations or movements such as “Fridays for Future”, but others have argued that the composition of the commission seems balanced overall.

Takeaways:

- *In order to represent and include all parties affected by the transition to net-zero, policy-making must include representatives from a variety of different industries, stakeholders and interests.*
- *They must all be given a space to voice their concerns and have these be included in the final recommendations/policies.*
- *Engaging directly with citizens affected by the transition, such as those living in the area in which structural change is occurring, also ensures legitimacy and gives credibility to the final outcomes of discussion.*
- *This should not just occur a singular time, but be a continuous process of engagement and feedback. As described in chapter 6 of the final recommendations of the commission, progress reports should be carried out every three years or so (BMWi, 2019).*

3. Economic and Social Empowerment:

A cornerstone of the coal commission’s strategy was and is the transformation of traditional mining regions and ensuring the continuation of economic opportunities and investment into modernization of infrastructure, research and innovation. This furthermore includes maintaining the competitiveness of local industries. At the end of 2018, around 86,000 people were still employed directly or indirectly in the lignite and hard coal sector of the Germany. It was therefore a key aspect of the commission to ensure the employment and economic and social empowerment for the regions affected. Future-proof jobs, described as such in the commission’s mandate, are to be created in collaboration between the federal government, states, local authorities, as well as economic actors in fields such as transport infrastructure, skill-development and others. Furthermore, another building block which was recommended by the commission were insurance models to compensate the operations of opencast lignite mines. This was done to protect the mine operators from potential bankruptcy, which would

lead to significant spending requirement for renaturation (Litz et al., 2019). Acknowledging the hardships affecting individuals which would come with the phase-out, measures were recommended by the commission to alleviate these consequences. The commission recommends extensive labour market measures to ensure that those currently employed in the coal industry are protected from potential dismissal, provided with adequate reskilling programs, reallocated to new jobs and provided with an early retirement option without financial losses.

Takeaways:

- *Maintaining the competitiveness of local industries is essential in order to prevent unemployment, migration out of the region and other social hardships. This is mentioned under chapter 5.3 in the final report of the commission, which brings attention to the maintenance and advancement of existing regional and national supply chains, as well as creating new ones (BMWi, 2019).*
- *This is to be done through investments into new and green industries in the region, as well as facilitating the transition into these sectors through opportunities such as reskilling programs. Exemplary are the investments into the Rheinische Revier, where new research institutes for energy sources such as hydrogen or geothermal energy were encouraged to settle through financial assistance. The region has since contributed a great deal to the energy supply across Europe, following its ongoing structural transition (BMWi, 2019).*

4. Providing Funding Mechanisms:

The large-scale transformation and structural change include necessary investments in the regions and economic sectors affected, for which existing EU and federal funding instruments were made of use effectively, purposefully and with priority in the affected regions. Additionally, a specific fund made for structural change, consisting primarily of federal budget, should be used as well. In order to maintain economic growth in the region, alternative industries are being encouraged and assisted through investments. This will create economic potential, and thereby strengthen the region in the structural changes. The overall federal budget to implement the commission's recommendations consists of EUR

40 billion for regional policy, EUR 16-32 billion for power price compensation, EUR 5-10 billion for utility compensations, EUR 5-7 billion for labour market policies, and EUR 3-4 billion for CO2 certificates. This results in a total of EUR 69 to 93 billion in additional costs for the federal budget through 2038, which is 1.0 to 1.4 percent of the annual federal budget (Litz et al., 2019).

Takeaways:

- *The energy transition requires large financial means, which should be allocated through the federal budget.*
- *Existing EU and federal funding mechanisms can be made use of, if the necessary requirements are maintained. The commission highly recommends the federal government to make use of these options (BMWi, 2019).*
- *By investing in the structural transition of specific regions, the economic power of that area is strengthened and can thereby strengthen itself and create economic potential.*
- *Providing clear areas of investment allows for strategic policy implementation and a focus on regional programs and development.*

3. INDONESIA – STATE OF PLAY AND OPPORTUNITIES

3.1 Policy overview

Indonesia is rapidly emerging as a thriving economy and is poised to ascend to the fourth-largest economy globally by 2050. In response to the escalating energy requirements, the government has embarked on an ambitious journey towards sustainability, committing to achieving net-zero emissions by 2060 or possibly even earlier (Republic of Indonesia, 2022). The transformation of the energy landscape hinges significantly on the power sector, which currently stands as the country's primary source of emissions from fossil fuel combustion.

Driven by the large share of coal in the electricity mix (60%) the electricity sector makes up about one third of Indonesia's fossil fuel emissions (IEA, 2022). Coal alone accounts for close to 30% of total energy in Indonesia (2020) up from under 4% in 1990 (ibid.). The growth in coal is connected to the remarkable electrification Indonesia has undergone in the last thirty years. Even in the past 15 years, electrification went from 66% in 2009 to 99.2% in 2020 (Development Asia, 2022). With the growth in electrification (access) also comes the growth in demand for its use.

But at the same time as a result of somewhat overly optimistic demand growth and some inflexibility in the system (lack of interconnections between the islands) Indonesia now has a large and young coal fleet. These plants possess the capacity to cater to a substantial portion of the energy demand for the foreseeable future, unless immediate measures are implemented to curtail their emissions. Additionally, natural gas currently constitutes nearly 20% of the electricity generation mix (IEA, 2022). There are therefore on the one hand significant existing coal-fired powerplants to service a growing population with increasing demand for more energy and on the other hand the need to decarbonize and invest in renewables (to avoid further lock-in and dependencies).

Renewable energy potential

Indonesia possesses vast potential for renewable energy generation. Indonesia's unique geography and climate offer a rich potential for the development of renewable energy. Situated near the equator, the country receives abundant sunlight year-round, making it an ideal candidate for solar energy projects. However, despite this natural advantage, the deployment of solar energy has been relatively slow due to high upfront costs and a lack of necessary infrastructure (Pramadya and Kim, 2023). Similarly, for wind, certain regions, particularly in eastern Indonesia, benefit from favourable wind speeds suitable for electricity generation (Hidayat, 2022).

The country also has vast opportunities for hydroelectric power. The country's varied topography and numerous rivers offer significant opportunities for both large-scale hydroelectric projects and smaller, community-based installations. The government projects the potential for hydropower to be more than 94 GW (Development Asia, 2022), with the installed capacity projected to be 65 GW in 2050, not including Papua (CIPP 2023).

Perhaps one of the most promising prospects for Indonesia is its geothermal energy potential. The country is home to about 40% of the world's geothermal reserves (with a potential for 23.9GW of

generation) (ibid). The heat from the earth could provide a steady source of electricity generation, although the high costs associated with initial exploration and drilling are notable challenges to overcome.

Additionally, biomass and bioenergy offer another avenue for renewable energy development in Indonesia, especially given the country's large agricultural sector. Waste products from farming can be converted into energy, although efficient methods for the collection, storage, and transportation of biomass are needed for this potential to be fully realized.

Policy landscape

On the policy front, Indonesia has plans to incorporate renewables into its energy mix, targeting 23% renewable energy by 2025 (which will have to increase from the share of 14% in 2021, with most of this driven by hydro and geothermal (installed capacity of 5.6 and 2.5 GW respectively) with wind and solar at around 0.1 GW (CIPP 2023)), though as of February 2024, comments from Indonesia's Minister for Energy and Mineral Resources seems to suggest that this target will be revised down to somewhere between 17 and 19% (Karyza, 2024). The ability to reach these ambitious targets will hinge on adequate financing to ensure the early retirement of coal facilities. To this end the Just Energy Transition Partnership will need to play a key role in not only ensuring the capital for necessary investment but also issuing in a just approach in the process.

In 2022, Indonesia passed the Presidential Regulation No. 112 of 2022 regarding Acceleration of the Development of Renewable Energy for the Supply of Electrical Power which outlines how the country will increase its renewable generation situated in the wider picture of how it will achieve this while decommissioning its young fleet of coal-fired powerplants. The will is there but it currently faces structural challenges due to financing and a plethora of exemptions around contractual obligations relating to its coal use.

Contractually, much of generation is locked into long-term coal-based electricity supply contracts. Thus, despite the declining costs of renewables there is little financial incentive for Perusahaan Listrik Negara (PLN – the state electricity company) to divest. Similarly, the Presidential Regulation permits the construction of coal power plants if they were included in PLN's Business Plan for 2021–2030 prior to the issuance of the regulation. Additionally, captive power plants located in industrial parks and coal-fired power initiatives designated as National Strategic Projects are also exempt from the

regulation (Roesad, 2023). The ambitions for 2025 coupled with the further target of net zero by 2060 (earlier conditionally) need to be reconciled with the economic disincentives, where it seems necessary for outside support to help realise the targets realistically.

In addition to the energy planning processes, Indonesia is among the ASEAN Member States with an early submission of a long-term climate strategy (LTS, see Groß et al., 2021). Indonesia has launched the Low Carbon Development Initiative 2045 with a view to providing scientific assistance to policy-makers in formulating the country's LTS. This indicates the country's rich experience with Long-term National Development Planning. The country has some experience in balancing different policy visions regarding climate change at the national and subnational level, having emphasized various the various understandings at the difference governance levels and recognizing that these could serve as a potential barrier (ibid., p. 84).

The role of balancing the social repercussions of the energy transition is, however, huge. As a study for IESR (2022) outlines there were around 250,000 workers directly employed in coal-mining related businesses (in 2020). This is only 0.2% of total employment. However, there are several coal-producing provinces where the share of coal-related employment is significantly higher:

- 11% in East Kalimantan,
- 3% in South Sumatra and
- 4% in North Kalimantan.

As IESR outlines, about 80-90% of the coal employment comes from mining services companies. These workers are mostly men below the age of 50 with high school or lower-level education, who are well paid – accordingly, a reskilling approach will pose some challenges or some investments needed at different levels.

3.2 The four key elements in the Indonesian context

In November 2023, the IPG published the Comprehensive Investment and Policy Plan (CIPP) an exhaustive document meant to support the GoI in the implementation of the JETP. The document provides valuable insight into the approach planned by both international partners and the GoI in pursuing the JETP (JETP Secretariat Indonesia, 2023). The rest of the section draws from the report to

provide a brief overview of the four key elements outlined in section two, grouping together policy planning and funding, and economic and social empowerment and stakeholder engagement.

Long-term policy planning and Providing funding mechanisms

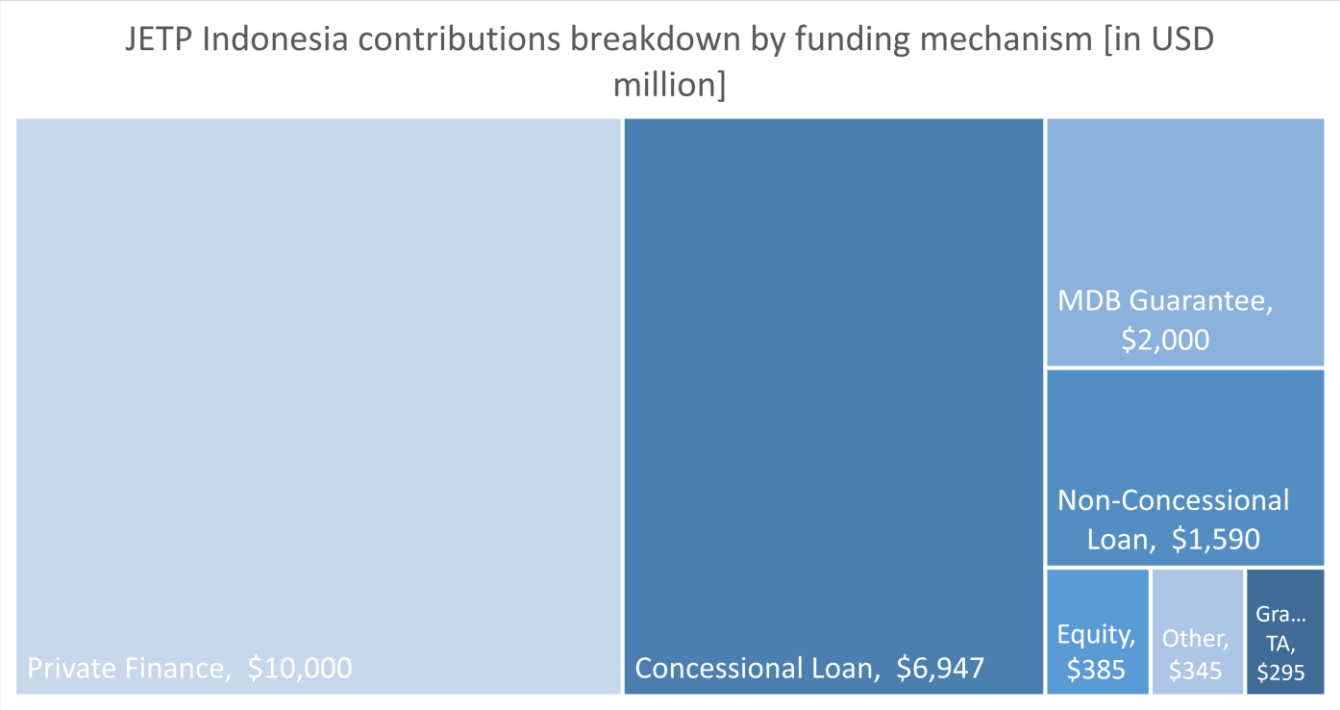
The long-term policy planning in Indonesia currently is in a moment of flux, where current longer-term commitments as discussed in section 3.1 are at odds with the necessary steps needed to be taken to achieve its NDC commitments. The JETP Indonesia focuses on decarbonization of the power sector. Conditional to international support, the JETP Indonesia seeks to achieve peak power sector emissions by 2030 at an absolute value of 290 MT CO_2, then declining towards net zero power sector emissions by 2050. This is coupled with the target of increasing RE deployment to reach 34% (total grid) and 44% (on grid) of power generation by 2030. The CIPP focuses on the on-grid capacity (plans for off-grid are in development). The estimated investment cost for realizing these goals is USD 97.1 billion between 2023-2030 along five (initial) investment focus areas (IFAs):

- IFA 1: Transmission Lines and Grid Deployment; around 14.000 km circuit of transmissions costing up to USD 19.7 Bn by 2030;
- IFA 2: Early Coal-fired Power Plant (CFPP) Retirement and Managed Phase-out; coal flexibility retrofits and early retirements requiring up to USD 2.4 Bn by 2030;
- IFA 3: Dispatchable Renewable Energy Acceleration; 16.1 GW built out by 2030, costing up to USD 49.2 Bn by 2030;
- IFA 4: Variable Renewable Energy (VRE) Acceleration; 40.4 GW built out by 2030, costing up to USD 25.7 Bn by 2030; and
- IFA 5: Renewable Energy Supply Chain Enhancement

A sixth IFA of energy efficiency and electrification will be added to the subsequent 2024 version of the JETP CIPP.

The policy recommendations of the CIPP, and thereby the execution of Indonesia's energy transition, are embedded in the principle ensuring affordability, system stability, and sustainability. Eight policy enablers are at the core of promoting Indonesia's energy transition: 1) Strengthening domestic supply chain of RE through reforming local content requirement; 2) adjusting supply-side incentives; 3)

improving RE procurement processes; 4) making PPAs more bankable; 5) enabling early coal retirement; 6) ensuring financial stability of the nationally owned utility (PLN); 7) strengthening financial policy support to Indonesia's energy transition; 8) decarbonizing captive power (ibid. p.4). The JETP agreement stipulates a commitment of USD 20 billion in order to leverage the USD 97.1 billion needed for the first phase of the JETP. Half of the USD 20 billion (USD 10 billion) is committed by IPG members/public finance and the other half (USD 10 billion) comes from a commitment of the Glasgow Financial Alliance for Net Zero Working Group members to mobilize and facilitate at least that amount in private finance (p. 135).

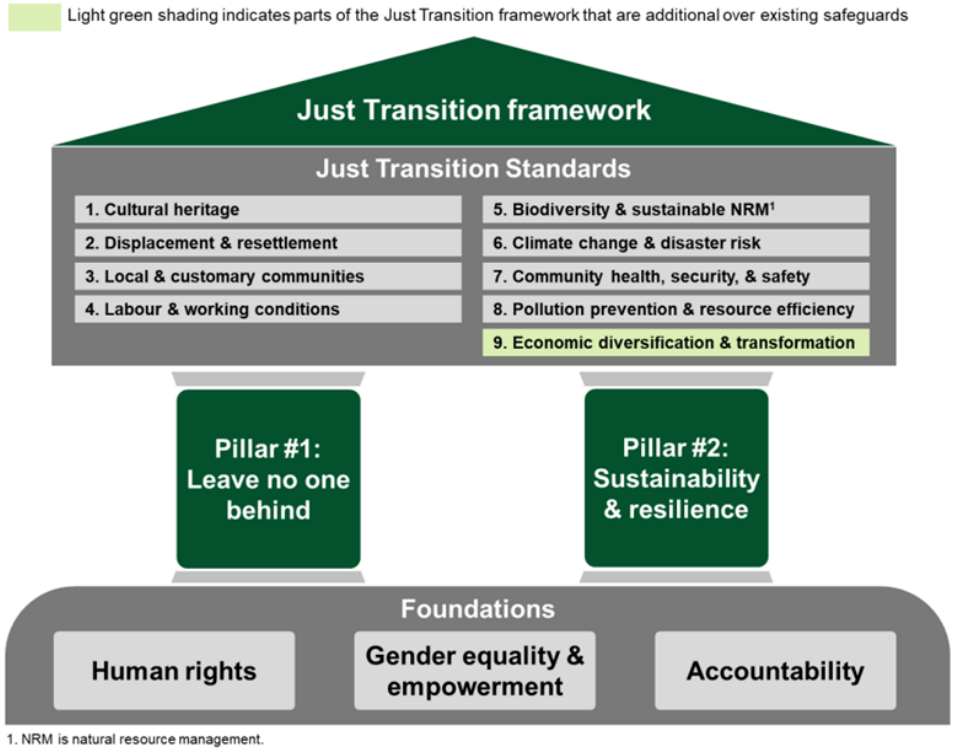


Source: own creation based on Table 7.4-1 on page 138-139

The challenge and imperative going forward will be to create a comprehensive, clear, and unwavering policy structure that aligns with the CIPP, in order to properly facilitate the leveraging of private/debt-based finance necessary to reach the targets.

Stakeholder Engagement and Economic and Social Empowerment

The Just Transition Working Group of the JETP Secretariat, based on consultations civil society organizations and trade unions, developed a just transition (JT) framework that along two pillars and nine standards (see figure below) brings together elements that underpin the foundational concepts of a just transition in Indonesia: (i) human rights, (ii) gender equality and empowerment, and (iii) accountability (ibid., p. 113).



Source: (JETP Secretariat and Working Groups, 2023)

Source: from Page 115 of the CIPP

This approach is meant to feed practically into assessments that will be done by evaluations of individual projects and if necessary, interventions which could happen both at the project and level and at the national and subnational level. The JT framework acknowledges the criticality of robust stakeholder engagement to mitigate negative impacts on vulnerable stakeholders, pertaining to e.g., gender, age, health, social status, type of disabilities, ethnicity, religious/ spiritual background, geographical location, economic capacity, education, and dependency on the immediate environment or natural resources for livelihoods. Detailed assessments of vulnerable stakeholders are coupled with risk identification and analysis, risk mitigation action plans, and enhancement of opportunities to lay

bare not only who is affected, how they may be negatively affected and how this can be remedied, but also what positive aspects arise from the implementation of a given project (ibid. p. 113-120). The approach hinges on the role of national and subnational actors putting forward the projects for approval appropriately involving relevant stakeholders and correctly identifying potentially vulnerable ones, as to better address elements of economic and social empowerment.

4. RECOMMENDATIONS

The review of transition processes in selected European countries revealed elements such as long-term planning, stakeholder engagement, economic and social empowerment as well dedicated funding mechanisms contribute to support just processes. As the cases indicate, linking the four serves a justice outcome greater than the sum of its parts.

The following recommendations can help to guide Indonesia to enable a just transition process both through its own governance mechanisms and support via international partnership(s):

1. **Establish governance mechanisms to manage, coordinate, plan, and dedicate specific resources** toward a just transition process;
    a. Set clear targets for the phaseout of fossil fuels and concrete and ambitious emissions reduction targets.
    b. Develop sectoral approaches with achievable targets to create a timeline for action. Further introduce regular progress reports to allow close monitoring of the implementation of measures and allow for adjustments to be made, though without uncertainty in the overarching target-setting.
    c. Plan the phaseout of oil and gas production in the long-term and make a difference between the year operations will cease and the year when no new tenders are issued. This can enable gradual well-planned shifts and avoid unnecessary stranded assets and malinvestment.
    d. Support local governments to enable planning and administrative capacities and bolster multilevel mechanisms to better facilitate top-down regionally targeted policies.

2. **Integrate energy, climate and sustainability planning** to ensure realizing new opportunities in a green economy;
    a. Enable lower-risk investment in greener and future-proof technologies by long-term policy planning and offering government funds to address stranded assets from coal, oil, and gas producers and operators while simultaneously de-risking investment in renewables.
    b. Enable broad stakeholder engagement and integrated planning to allow for efficiencies and acceptance in the efforts to transition the local economy.
    c. Establish adequate processes such as a central commission and funding facility to enable long-term transition processes based in credibility and legitimacy.
3. **Promote workforce development to support workers with the skills, training, and information** required to find and keep decent jobs beyond the options in the traditional energy landscape;
    a. Prioritize social support programs to ensure access to basic financial and social services during periods of economic change. To minimize social hardships of rising energy costs and the structural transition itself, a subsidy scheme can assist workers and their families in affected sectors.
    b. Address the loss of jobs by shifting the responsibility of job loss away from workers and establish active programs to retrain them.
    c. Partner with local higher education institutions and companies to create society-wide approaches to the reskilling/innovation challenges.
    d. Support reskilling programs through the settlement of additional research institutions for energy sources in the respective regions focusing, e.g., on geothermal energy, hydrogen, or hydropower production. This supports regional investment and job opportunities and facilitates local know-how and a sense of buy-in.
4. **Reinvigorate economic development by creating new economic opportunities** to replace traditional industries or further support existing ones;

a. Introduce a policy mix consisting of, e.g., carbon taxes and the use of emissions trading, to enable the revenue generation which can be reinvested in energy efficiency and research programs.

b. Link investment shift to locally specific renewable energy solutions such as further exploration of geothermal activity.

c. Consider re-using closed mines and industrial complexes for nature-based solutions, as well as renewable energy production. This may allow for both the involvement of the local population in terms of employment and the continued economic and social empowerment of the region.

5. **Guide regional and rural development** to ensure all regions have the capabilities to be successful and support regions negatively impacted by industrial transitions;

    a. Create specific funds for green infrastructure and energy to fund large-scale restructuring. The investments can in turn create jobs and economic revenue which can flow back into the respective regions.

    b. Safeguard the full transparency of the just transition process to ensure that regional and just transition funds are helping to strengthen regional economies and are improving the livelihoods of the local populations they are meant to target.

    c. Evaluate regencies and cities on a one to one basis to assess individual needs and create structured programs for those deemed to be most adversely impacted by fossil fuel phase-out policies.

6. **Create culturally aware and comprehensive communication strategies** that accompany all steps of the just transition process

    a. Consult all affected stakeholders, including workers, communities, businesses, local interest groups.

    b. Enable two-way dialogues, that aim to listen to those affected by the policy changes.

    c. Ensure that the communication considers cultural circumstances when framing the messages.

d. Ensure communication is transparent and credible, as this breeds trust, a key factor in guaranteeing the success of a transition process.

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