



**Accelerating
the Just Energy Transition:
Challenges and Opportunities
for Regions**



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Forewords



Bhima Yudhistira
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Efforts to reduce carbon emissions in order to achieve the Net Zero Emission target in 2050 need to be encouraged, one of which is through accelerating the early closure of coal power plants. At the same time, there is encouragement from the commitment of JETP (Just Energy Transition Partnership) to ensure that the retirement process of coal fired power plants can be carried out soon. The closing of the coal fired power plants certainly affects the economic life of the people around the power plants as well as their workers. In addition, the impact of the non-operating power plant also has an effect on the income of various sectors in the supply chain, including transportation and coal mining. For example, small-scale business actors who usually provide basic needs for workers around the power plants will also experience a decrease in income.

On the other hand, if the energy transition strategy is carried out properly, new opportunities for renewable energy will emerge, which will have positive economic implications on the region. At the same time, however, efforts are needed in the context of the changing workforce throughout the coal power supply chain.

Learning from the case of the energy transition carried out by the South African JETP program in the Mpumalanga area, various studies need to be carried out as risk mitigation of the energy transition, and provide job options for affected workers. The active involvement of the local government, trade unions and communities around the power plant area will determine the success of the just energy transition phase.

CELIOS, supported by Yayasan CERAH Indonesia CERAH, presents a study in three different regions, namely Langkat, North Sumatra; Cilacap, Central Java; and Probolinggo, East Java to examine the impact and readiness of local governments in facing the closure of the coal power plants. The three areas were selected based on indicators of large coal generating capacity, extensive supply chain, impact on surrounding communities, and potential inclusion of generators in JETP's early retirement commitments.

The main findings of the study show that the readiness of local governments to form a regulatory framework concerning the energy transition is still far from ideal. In fact, several related regional agencies admit that they have limited knowledge about JETP, which means that socialization has not been well implemented by local governments. Ideally, local governments need to be involved as a central part of the energy transition.

Therefore, the findings of this study are expected to be used as a reference in making JETP a truly transparent and participatory energy transition program.

As a pioneer in studies related to the implementation of JETP Indonesia, we hope that additional discourse will emerge from the central government and local governments, JETP Secretariat, IPG (International Partners Group), GFANZ (Glasgow Financial Alliance for Net Zero), along with the affected communities and trade unions. Discourse on the readiness of the Indonesian regions is the key to ensure that the energy transition does not result in the economic loss of the regions that are reliant on power plants and coal mines. Rather, energy transition should actually create new economic opportunities that must be welcomed with open arms.

Foreword



Agung Budiono
Ad Interim Director
Yayasan Indonesia CERAH



The international community has agreed to counter the increased earth's temperature by abandoning coal as the main energy source. Indonesia's high dependence on coal as the main commodity sector that supports fiscal and electricity sources has made the country limping away from coal in a short period of time. At the regional level, several provinces such as East Kalimantan and South Kalimantan have obtained substantial economic benefits to ensure that the cessation of coal use will bring positive implication on the economic, social and political sectors.

At present, Indonesia is recorded as having 31.9 GW of installed capacity of coal-powered plant generators and it is projected in the RUPTL that Indonesia will increase its capacity by 13.8 GW until 2030 with various construction statuses. The data shows the dominant role of coal in the energy system, which means that it is a big homework for Indonesia to encourage energy transformation. It is important to note that Indonesia has a number of climate and energy transition commitments as stipulated in the Paris Agreement, involvement in the Conference of Parties (COP) Climate Change Summit series, and a net zero target by 2050 (or sooner).

The commitments agreed upon by Indonesia are unfortunately not directly proportional to the trajectory of achieving the zero emission target. Policy makers are still lacking in ambition in planning and formulating energy transition policies. The launch of the Just Energy Transition Partnership (JETP) financing scheme at the G20 Summit in Bali in November 2022 can be an opportunity for Indonesia to retire coal-fired power plants early and accelerate emission reduction targets.

Of course, structured planning and implementation of good governance are needed to support a just energy transition to ensure that it does not leave or harm any party. Referring to Presidential Regulation (Perpres) 11 of 2023, the involvement of local governments is very important for the process of mapping the needs and alignment of policies between the central and regional governments.

Therefore, Yayasan Indonesia CERAH, in collaboration with CELIOS, conduct an in-depth analysis of regions' readiness with a focus on North Sumatra, Central Java and East Java to find out whether the closure of coal-powered areas and coal mines in these areas will have a major impact on the community's economy. It is hoped that the findings of this study can enrich public discourse on the implementation of the principle of justice (just) in climate financing such as JETP, and assist decision makers to make sure that a just energy transition can actually work in Indonesia.

Jakarta, 10 Juli 2023

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Executive Summary



This research concentrates on the acceleration of a just energy transition for local governments, with two focuses. First, the regions' economic interests of the energy transition in the area of the coal-based power generation industry. The several factors observed include: a) the impact on local revenues and budgets; b) employment; c) MSME economic turnover around the coal-powered plant. Second, the challenges and opportunities for local governments in the policy and regulatory framework. Observed factors include: a) energy transition in JETP; b) energy transition regulatory objectives; c) correlation of regulations and problems that arise; d) anticipation and handling of the affected groups. In analyzing the regulatory aspects, an importance performance analysis was carried out on the JETP policy plan, Presidential Decree 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New Renewable Energy sub-sector, and the Renewable Energy regulatory framework in the regions. To help explore the findings, this research conducts exploratory case studies in 6 (six) local governments, which consist of three provinces, namely Central Java, East Java, and North Sumatra, as well as three districts, namely Cilacap, Probolinggo and Langkat. This study uses a quantitative and qualitative approach. The research results show that:



A just transition needs to be realized through the involvement of local governments in every stage of the policy.



Regional governments have several economic interests that need to be considered in the planning of a just energy transition program. Each of these economic interests has potential adverse impacts in several aspects:

- **Regional revenue and budget:** There is a potential loss of Local Government Direct Revenue from the early retirement of the coal-powered plants; with a range of 1.2% to 6.4% of total Local Government Direct Revenue, which depends on the economy of each region
- **Employment:** Apart from providing compensation for workers' lost income from the early retirement of the coal-powered plants, mitigation can be carried out by allocating funding for upskilling and reskilling programs for affected workers
- **The economic turnover of MSMEs:** The economic impact of the existence of the coal-powered plants is not significant for the majority of MSMEs in the areas where coal-powered plants exist.



In regards to the regional governments' challenges in the policy and regulatory framework, the following conclusions are drawn:

- The local government have limited knowledge about and is not involved in the JETP energy transition policy;
- The majority of local governments which were respondents in this study do not know about the existence of Presidential Decree No. 11 of 2023;
- To date, the local governments do not yet have a regulatory framework for implementing Presidential Decree No. 11 of 2023;
- The regional governments stated that Presidential Decree No. 11 of 2023 had not yet answered the need for an energy transition;
- The regional governments stated that at this time they had not provided material protection guarantees for the communities that will be affected by the closure of the coal-powered plants.



Mapping opportunities and optimizing the role of regions in the energy transition is carried out through the formulation of an energy transition framework at the central and regional levels.

Based on these findings, this study recommends:



The necessity to define the just transition's concept with the involvement of local governments.



The transition framework involving local governments should be carried out in three dimensions: access, participation, and opportunity.



Indonesia, in carrying out a fair transition policy, should immediately provide the Climate Change Bill to improve the variety of sectoral regulations



The government needs to broaden the understanding of energy transition policies in JETP and involve local governments in formulating policies in JETP through planning, budgeting and implementing energy transition programs to ensure that regions' economic interests are not neglected



In mitigating the employment impact of the early retirement of the coal-powered plants, local governments should request guarantees for funding aimed to redeployment, reskilling, upskilling, retraining programs, support for worker relocation, and support for placement of workers in affected areas



Regional governments need to provide a regulatory framework for implementing Presidential Decree No. 11 of 2023



There needs to be a review of the various transitional regulations in order to accommodate guarantees of material protection for the community affected by the closure of the coal-powered plants.

Acknowledgments



This study was carried out on the initiative and collaboration between the Center of Economic and Law Studies (CELIOS) and the Yayasan Indonesia CeraH. The ideas, opinions and insights in this report were developed by Bhima Yudhistira, Adhityani Putri, Agung Budiono, Muhamad Saleh, Muhammad Andri Perdana, Wicaksono Gitawan, Azlina Mujtahid, and Aris Bachtiar.

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Introduction



...Realize self-reliance through national energy sovereignty from the regions. Indonesia is full of natural resources, has a lot of potential, thus, we should be ready to build a sustainable, friendly, just, and prosperous Indonesia.

Ridwan Kamil, 2022
Chairman of the Association of Oil and Gas Producing
Regions and Renewable Energy (ADPMET)

Indonesia has ratified the Paris Agreement through Law Number 16 of 2016. This means that the country is legally bound to contribute to the global fight against climate change. Achieving the Paris agreement's¹ goals in reducing greenhouse gas (GHG) emissions and limiting global temperature rise to below 1.5°C above pre-industrial levels requires a comprehensive and participatory energy transition. There are several initiatives and steps to support and realize the energy transition. In addition to the Energy Transition Mechanism (ETM) launched at COP-26, during the G20 Summit in Bali Indonesia and the International Partnership Group (IPG) have also signed the Just Energy Transition Partnership (JETP), with the objectives of achieving the power sector's peak emission target of 290 million metric tons of CO₂ by 2030, a renewable energy mix of 34% by 2030, and bringing the power sector to zero by 2050².

¹ The Paris Agreement, adopted in 2015 and joined by 194 nations by the end of 2021, aims to tackle the threat of climate change. in the context of sustainable development and efforts to eradicate poverty

² IESR, Peluncuran dan Diskusi Laporan Mewujudkan Transisi Sektor Ketenagalistrikan di Indonesia: <https://iesr.or.id/agenda-iesr/peluncuran-dan-diskusi-laporan-mewujudkan-transisi-sektor-ketenagalistrikan-di-indonesia-opsi-dan-implikasi-dari-intervensi-terhadap-rencana-proyek-pembangkit-listrik-tenaga-batubara-138-gw-dari-per>

JETP has two primary pillars. The first is to promote renewable energy and clean energy and the second is to support decarbonization for economic growth. While the JETP targets are not directly linked to the goals of the Paris agreement, these international agendas have goals that are interrelated. The transformative nature of a low-carbon transition requires careful accounting and management of potential trade-offs³. In this regard, the global energy transition to tackling climate change and to achieve sustainable development poses important equity challenges.

Important questions concerning inequality and equity arise as the energy transition can have positive or negative impacts on jobs and economic activities, energy security, responsible production, health and environmental pollution⁴. As a result, the issue of energy transition has sparked several mass demonstrations in recent years both in Indonesia and around the world.

One of the crucial steps to meet the targets of the Paris agreement will require a strategic maneuver towards dependence on the coal power sector. This transition has the potential to bring about substantial improvements to the environment in many dimensions, as well as social and economic benefits. At the same time, however, it could also pose various policy challenges on both the demand and supply sides of the coal industry. In coal-dependent countries, policies must address potential loss of local jobs, reduced domestic revenues (from coal exports), stranded assets, and high electricity prices⁵.

In the context of Indonesia, based on data released by the International Energy Agency (IEA), the country received the highest score out of 21 countries on the Coal Transition Exposure Index (CTEI)⁷ with an aggregate score of 5.76 above

Mongolia, China, Vietnam, India and South Africa. This demonstrates Indonesia's dependence on coal. In 2023, Indonesia's target of coal production reaches 695 million tonnes, which is the highest in history. Coal in Indonesia accounts for almost a third of total energy supply and 60% of electricity generation. With regards to employment, sectors related to the coal industry are managed by around 270,000 employees, of which around 170,000 are employed in power generation and the remainder in transmission and distribution. Coal-fired power plants dominate the figure with 70,000 employees⁸. The IEA reveals that the coal sector is a large employer and that coal production and employment are spatially concentrated⁹.

In 2021, Indonesia produced 585 million tonnes (Mt) of coal. One year later, the government set a production target of 663 Mt with a total production realization reaching 685,6810¹⁰, which was the largest in history. The majority of the primary energy mix for power plants in Indonesia is still dominated by coal. The percentage was recorded at 67.21% in 2022. The primary energy mix for power plants from coal was observed to have increased last year. This was in line with the installed capacity of the steam power plant which increased to 42.1 gigawatts (GW)¹¹. This condition shows the dominance of coal as the main source of energy for power plants.

Coal is, by far, the biggest driver and accounts for almost three-quarters of the increase in emissions, while one third comes from oil, and the remainder from burning natural gas (about 15%) and processed emissions (about 5%). The power sector accounts for around 40% of the total CO2 emissions by 2021, while transport and industry each account for around a quarter of the total emissions¹².

3 Le Blanc D. 2015. Toward integration at last? The sustainable development goals as a network of targets. *Sustain Dev.* 23(3):176-187. doi:10.1002/sd.1582.

4 McCollum DL, Zhou W, Bertram C, de Boer H-S, Bosetti V, Busch S, Després J, Drouet L, Emmerling J, Fay M. 2018. Energy investment needs for fulfilling the Paris agreement and achieving the sustainable development goals. *Nat Energy.* 3 (7):589-599. doi:10.1038/s41560-018-0179-z

5 For example, France's increase in carbon taxes on petrol, diesel, heating oil and natural gas caused outrage because of the disproportionately high burden on poorer households, which led to protests in 2018 (Gagnebin et al. 2019). In Germany, Fridays For Future and Extinction Rebellion activists occupied the Garzweiler coal district to protest the expansion of the lignite mining area (Buchsbaum 2019). Similarly, in South Africa, the national mining and metals industry union has marched on the capital city of Pretoria pressing for a just energy transition (Gedye 2018).

6 NCE. 2018. Unlocking the inclusive growth story of the 21st century: accelerating climate action in urgent times. *New Climate Economy: Washington*

7 CTEI mencakup 21 negara dan menggabungkan produsen dan konsumen batubara terbesar, mewakili lebih dari 90% produksi dan konsumsi batubara global. Berdasarkan data dari Harvard Kennedy School (2022); Bank Dunia (2022); S&P Global (2021); GID (2022) yang diolah International Energy Agency.

8 International Energy Agency. 2022, Special Report An Energy Sector Roadmap to Net Zero Emissions in Indonesia, September: website: www.iea.org

9 Ibid.

10 Mineral One Data Indonesia, 2022. Kementerian ESDM

11 ESDM Sector Achievements in 2022 & Work Program in 2023, Ministry of Energy and Mineral Resources 30 January 2023.

12 International Energy Agency. 2022, Special Report An Energy Sector Roadmap... Op.Cit. hlm, 33-35

In response, Indonesia has started to consider carrying out early retirement for several of its coal-fired power plants. A total of 8,770 MW of the coal-fired power plants has been canceled, with an estimated GHG emission reduction equivalent to 64.5 million tonnes of CO₂/year. In addition, the State Electricity Company (PLN) has also considered a coal-fired power plant retirement scenario¹³. The IESR's and the University of Maryland's study (2022) found that 9.2 GW of coal must be removed from the PLN grid before 2030 and all unsustainable coal power plants must be phased out by 2045 to ensure that Indonesia is able to reach its global temperature target¹⁴.

Some of the initiatives and steps to support the above targets have begun to be carried out through JETP. JETP Indonesia¹⁵ has identified five investment focus areas to accelerate the energy transition: a) transmission network development; b) coal power plant early retirement; c) acceleration of baseload renewable energy; d) accelerated variable renewable energy (VRE); and e) development of a renewable energy supply chain.

Just transition policies are critical to helping ensure that energy transitions are socially inclusive. In the case of Indonesia, a just transition can provide a safety net and active support to communities currently in the fossil fuel value chain (including the use of fossil fuels in the power sector), as well as communities who will face risks due to the transition. To achieve a just transition, the best practice is a collective-holistic movement that aims to encourage social dialogue and produce policy measures based on inclusive considerations with the involvement of central and local governments.

A fair transition needs to be ensured in the implementation of policies internationally, nationally and locally. A just transition framework needs to provide guidelines, for example through: a) inclusive social dialogue to achieve consensus and transformation; b) skills development and support measures for job transitions; c) social protection policies that protect workers and vulnerable groups; and d) transfer of technology and knowledge¹⁶.



13 Indonesia Research Institute for Decarbonization (IRID). 2022, Policy Brief, Just Energy Transition Partnership (JETP) Indonesia. hlm, 3

14 IESR, Peluncuran dan Diskusi Laporan Mewujudkan Transisi...Op.Cit.

15 Sekretariat JETP Indonesia. 2023, Implementasi Just Energy Transition Partnership Indonesia yang disampaikan Local Government Direct Revenuea 12 Juni 2023.

16 ILO. 2019. Advancing a Just Transition and the Creation of Green Jobs for All for Ambitious Climate Action. https://www.ilo.org/wcmsp5/groups/public/-ed_emp/-emp_ent/documents/generic_document/wcms_715201.pdf

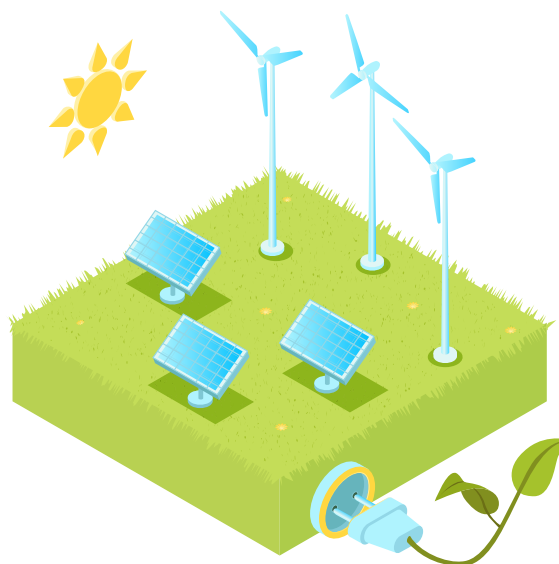
For transitional policies, it is necessary to strategically involve local governments (Pemda) to actively develop renewable energy. A very important role for the local government is to participate in the policy and utilization of the energy transition. Local governments¹⁷ have the potential to encourage citizens in their respective regions to participate. Wider involvement according to the concept of energy-related Social Sciences and Humanities (energy-SSH) has a positive impact on the transition, namely: a) speed¹⁸; b) inclusivity and fairness¹⁹; c) overcome interrelated social problems²⁰; d) more democratic²¹; e) collaboration²²; and f) increase public awareness²³.

Based on the above background, this study will describe a just energy transition that involves local governments in developing renewable energy. There are two primary issues to be analyzed. First, the regions' economic interests in the energy transition in the area of the coal-based power generation industry. Some of the factors observed include: a) impact on local revenues and budgets; b) employment, poverty and inequality; and c) MSMEs' economic rotation around the areas.

Second, the challenges and opportunities for local governments in the framework and regulations. Observed factors: a) energy transition in JETP; b) energy transition regulatory objectives; c) correlation of regulations and problems that arise; and d) anticipation and handling of the affected groups. In analyzing regulatory aspects, an importance performance analysis was carried out on the JETP policy plan, Presidential Regulation Number 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New and

Renewable Energy Sub-sector (Perpres No 11 of 2023), and the Renewable Energy regulatory framework in the regions.

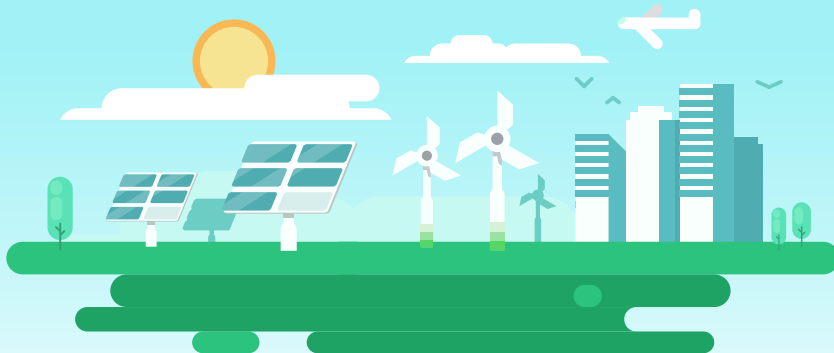
To achieve its objectives, this research conducts exploratory case studies in 6 (six) local governments, which consist of three provinces, namely Central Java, East Java, and North Sumatra, as well as three districts, namely Cilacap, Probolinggo and Langkat. These areas were chosen due to the presence of the coal-fired power plants which are included in the early retirement plan from PLN. This research suggests that the transition should be carried out based on the concepts of "energy justice" and "fair transition" by specifically involving the regional governments using a social equity framework in three dimensions: access, participation, and opportunity.



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- 17 Friends of the Earth Europe, 2018. Unleashing the Power of Community Renewable Energy. Available here: http://foeeurope.org/sites/default/files/climate_justice/2019/community_energy_booklet_final.pdf
- 18 Speed. There is a growing consensus that for the energy transition to occur more quickly, citizen engagement and active participation is essential. See Sovacool, B., 2016. How long will it take? Conceptualizing the temporal dynamics of energy transitions. *Energy Research and Social Science*, 13, 202-215.
- 19 Inclusivity and fairness. As there is a need for technology to change, procedural and ownership models also need to change. See Jenkins, K., Sovacool, B. K., McCauley, D., 2018. Humanizing socio technical transitions through energy justice: An ethical framework for global transformative change. *Energy Policy*, 117, 66-74.
- 20 Solving interrelated social problems. Engagement and participation enable people to shape the energy transition in ways that best suit the needs, goals and aspirations of citizens and which have the dual role of addressing driving poverty, health, welfare and other social issues. See Murphy, J., Smith, A., 2013. Understanding transition-periphery dynamics: renewable energy in the Highlands and Islands of Scotland. *Environment and Planning*, 45, 691-709.
- 21 More democratic. Ensuring that citizens are at the center of the energy transition and are active participants and leaders of the transition is not only of practical importance but also has ethical benefits.
- 22 Collaboration. A more collaborative approach between local authorities/municipalities and external actors, such as citizens, is also an effective and practical way to achieve energy transition goals. See Eckersley, P. 2018. Who shapes local climate policy? Unpicking governance arrangements in English and German cities. *Environmental Politics*, 27:1, 139-160.
- 23 Increase public awareness. Citizen participation can lead to increased public awareness of specific issues, including increased awareness of the (collective) need for action. Through participation, a more diverse, informed and knowledge-based consensus can be achieved. See Ielman, R. and Feldman, D.L., 2018. The future of citizen engagement in cities - The council of citizen engagement in sustainable urban strategies (ConCensus) *Futures* 101, 80-91.

Research methods

Research on the economic, policy, and regulatory aspects of JET in the regions aims to provide an empirical picture of the impact on local revenues and budgets; employment, poverty and inequality; MSMEs' economic rotation around the areas; and regional governments' challenges and opportunities in the energy transition policy and regulatory framework.



Aim of Research

The research was organized into several stages from March to June 2023. These stages include the construction stage, the instrumentation stage, the fieldwork stage, and the analysis and report preparation stage.

1



Construction stage

This phase involved developing research concepts and approaches, exploring theoretical framework & methodologies, as well as FGDs to evaluate instruments. At this stage, the involvement of academics, environmental activists, energy transition, NGOs and CSOs were crucial to explore supporting and inhibiting variables.

2



Instrumentation stage

The instrumentation stage was intended to compile the instruments. During this stage, discussions on the improvements of indicators and question items were carried out involving academics, environmental activists, energy transition, NGOs and CSOs.

3



Research stage

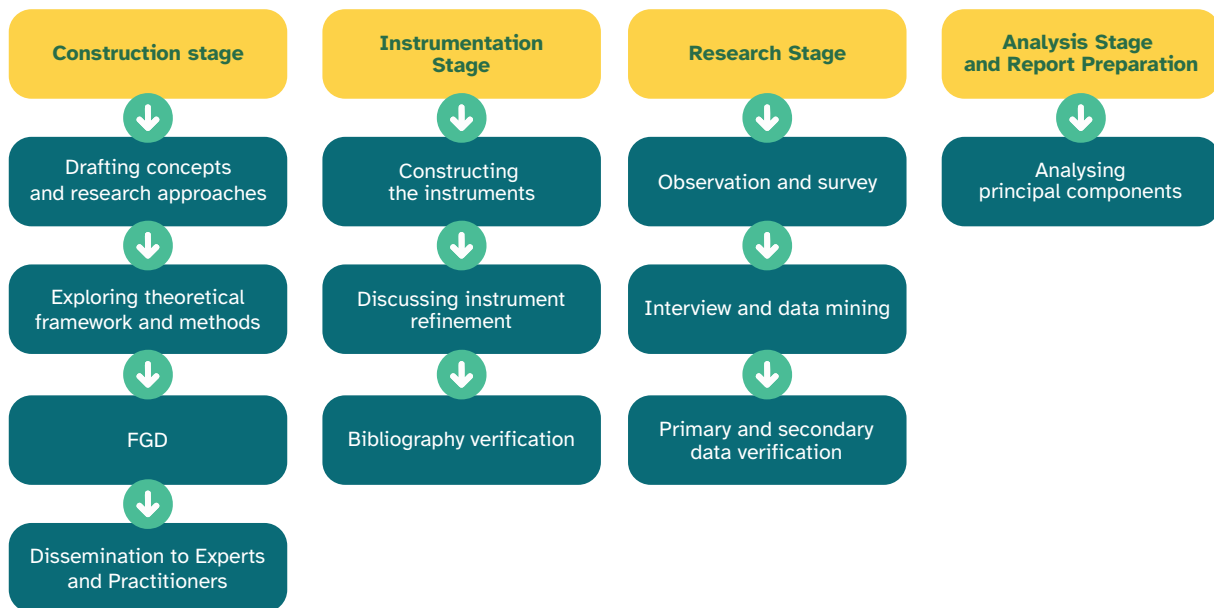
This stage involved surveys, observations, interviews, and data mining in 6 (six) regional governments, which consist of three provinces, namely Central Java, East Java, and North Sumatra, and three regencies, namely Cilacap, Probolinggo and Langkat. This phase was completed throughout the month of May. During this stage, the data was also processed, categorized, and checked for completeness.

4



Analysis and report compilation stage

This stage analyzes the main components of the study.



Types of research

The method used in this study is a mixed method which combines both qualitative research and quantitative research.



Method of collecting data

The method used in this study is a mixed method. This research is a research step by combining two forms of qualitative research and quantitative research.

Primary data

Primary data was compiled and collected based on indicator instruments by researchers in 6 (six) regional governments, which consisted of three provinces, namely Central Java, East Java, and North Sumatra, as well as three regencies namely Cilacap, Probolinggo and Langkat.

Secondary data

Secondary data in the form of official documents and reports were taken from: a) Journals; b) Research Report; c) Regulations; d) Supporting documents from the regional governments; e) Mass media



Data analysis

With regards to the economic impact, there are five materials used to analyse the impact of regional revenues and budgets; employment, poverty and inequality; MSMEs' economic rotation in the regions.

In the legal aspect, the evaluation of regulatory performance is carried out materially (substance, discrepancy and implementation of regulations) and is measured based on the statutory approach. In addition, Importance Performance Analysis (IPA) is used to display the gap between expectations and reality into a reality expectation quadrant.

Conceptually, Importance Performance Analysis (IPA) is a multi-attribute model. This technique is used to determine the extent to which the level of conformity is seen from the level of performance and work expectations by comparing the levels of expectations and performance. This suitability level determines the priority scale that will be used in handling. In this study, there are two variables represented by the letters X and Y. X is the level of actual performance, while Y is the level of expectation. The formula used is as follows:

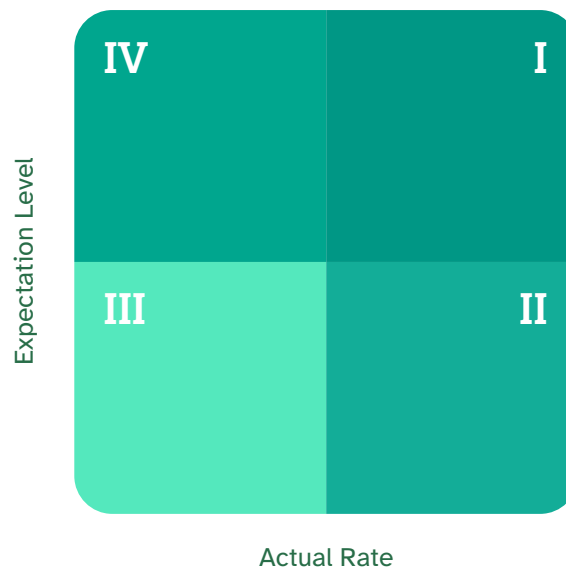
$$TK = \frac{X}{Y} \times 100\%$$

Keterangan:

- TK** : Conformity Level
- X** : The average score of stakeholder performance appraisal
- Y** : The average score of the assessment of the implementers' expectations towards the stakeholders

After the Importance Performance Analysis (IPA) was carried out, a quadrant analysis was then employed. Quadrant analysis is a statistical analysis that aims to map performance (actual) and expectations. The quadrant that is formed is a combination of the desired expectations and the reality received by them.

Figure 1. Quadrant Plot Research Variable (indicators)



Study Results

Local Economy Profile

GRDP Current Price 2022
Rp. 51,4 trillion

Number of population in 2019
1.041.775 people

GRDP per capita
Rp. 49,4 million

Area
6.263 km²
Total coal fired power plants capacity
840 MW
(Pangkalan Susu)

Langkat Regency

GRDP Current Price 2022
Rp. 120,9 trillion

Number of population in 2019
1.937.427 people

GRDP per capita
Rp. 60,8 million

Area
2.252 km²

Total coal fired power plants capacity
2.920 MW
(Karangkandri & Adipala)

Cilacap Regency



GRDP Current Price 2022
Rp. 38,9
trillion



Number of population in 2019
1.138.332
people



Area
1.696 km²



GRDP per capita
Rp. 33.5 million

Probolinggo
Regency



Total coal fired power plants
capacity
4.945 MW
(Paiton)

Source: Various sources





Coal power plants profile

Langkat Regency



PLTU Pangkalan Susu is located in Tanjung Pasir Village, Pangkalan Susu District, Langkat Regency, North Sumatra. The coal fired power plant, which is owned by PT PLN Indonesia Power, consists of four units with a total capacity of 820 MW. Units 1 and 2, each with a capacity of 200 MW, began operating commercially (COD/Commercial Operation Date) in 2014 and 2015 respectively, while Units 3 and 4, each with a capacity of 210 MW, began operating in 2019. This coal fired power plant has a boiler with subcritical technology as well as various kinds of social and environmental problems in the regions so that it²⁴²⁵ creates a high urgency for early retirement.



Power Plant
Unit 1, Unit 2
COD
2014, 2015
Technology
Subcritical

Owner
PT PLN Indonesia
Power
Capacity
2 x 200 =
400 MW

Power Plant
Unit 3, Unit 4
COD
2019
Technology
Subcritical

Owner
PT PLN Indonesia
Power
Capacity
2 x 210 =
420 MW

Source: Various sources

Langkat has a GRDP at current prices in 2022 reaching IDR 51.41 trillion²⁶. It is the third largest GRDP in North Sumatra after Medan City and Deli Serdang Regency²⁷. Agriculture, forestry and fisheries are the sectors that contribute the most to the economy of the regency, namely 41.34% of the total GRDP in 2022²⁸. Electricity (which includes generation, delivery and distribution of electricity to consumers, both operated by PT PLN and by private companies) only has a contribution of IDR 52.99 billion, or 0.1% of the total GRDP in 2022.

- 24 Saturi, S. .2021. Cerita Warga Yang Tinggal di Sekitar pltu Pangkalan Susu, Mongabay.co.id. <https://www.mongabay.co.id/2021/11/21/cerita-warga-yang-tinggal-di-sekitar-pltu-pangkalan-susu/>
- 25 Environmental Justice Atlas. 2020. Pangkalan Susu Coal-fired Power Plant, North Sumatra, Indonesia, <https://ejatlas.org/conflict/pangkalan-susu-coal-fired-power-plant-north-sumatra-indonesia>.
- 26 Badan Pusat Statistik Kabupaten Langkat. 2023. Produk Domestik Regional Bruto Kabupaten Langkat Menurut Lapangan Usaha 2018-2022
- 27 Badan Pusat Statistik Provinsi Sumatera Utara. 2023. [Seri 2010] PDRB atas Dasar Harga Berlaku Menurut Kabupaten/Kota. <https://sumut.bps.go.id/indicator/52/90/1/-seri-2010-pdrb-atas-dasar-harga-berlaku-menurut-kabupaten-kota.html>
- 28 Badan Pusat Statistik Kabupaten Langkat. 2023. Pertumbuhan Ekonomi Kabupaten Langkat Tahun 2022

Cilacap Regency



PLTU Karangkandri, also known as PLTU Cilacap Sumber or PLTU S2P Central Java, is a complex of four coal fired power plant units located in Karangkandri Village, Kesugihan sub-district, Cilacap Regency. The coal fired power plant is managed by PT Sumber Segara Primadaya (S2P), a joint venture between a subsidiary of PLN, PT Pembangunan Jawa Bali (PJB), which owns 49% of the shares, and a company owned by Dewi Kam, PT Sumberenergi 31 Sakti Prima (SSP), which owns 51% of the shares²⁹. Units 1 & 2 of coal fired power plant with a capacity of 2 x 300 MW have been operating commercially since 2006 with boilers having subcritical status³⁰ and being one of the priorities for retirement.



Power Plant
Karangkandri
Unit 1, Unit 2

COD
2006

Technology
Subcritical

Owner
PT Sumber Segara
Primadaya (S2P)

Capacity
2 x 300 =
600 MW

Power Plant
Karangkandri
Unit 3

COD
2016

Technology
Supercritical

Owner
PT Sumber Segara
Primadaya (S2P)

Capacity
1 x 660 =
660 MW

Power Plant
Karangkandri
Unit 4

COD
2019

Technology
Ultra-
supercritical

Owner
PT Sumber Segara
Primadaya (S2P)

Capacity
1x 1.000 =
1.000 MW

Source: Various sources

Cilacap has a GRDP at current prices in 2022 reaching IDR 120.94 trillion³¹, which is the second largest GRDP after Semarang City³². The manufacturing industry, which is dominated by the oil and gas refining industry, is the business sector that contributes the most to the Cilacap Regency's economy, namely 57.28% of the total GRDP in 2022. On the other hand, electricity only contributes IDR 94.7 billion, or 0.078% of the total GRDP in 2022.

²⁹ PT Pembangunan Jawa Bali. 2022. Laporan Tahunan PT Pembangunan Jawa Bali 2021 <https://www.ptpjb.com/wp-content/uploads/2022/06/AR-PJB-2021-3006.pdf>

³⁰ PT Sumber Segara Primadaya. 2023. <https://www.ssprimadaya.co.id/about-business.php>

³¹ Badan Pusat Statistik Kabupaten Cilacap. 2023. Produk Domestik Regional Bruto Kabupaten Cilacap Menurut Pengeluaran 2018-2022

³² Badan Pusat Statistik Provinsi Jawa Tengah. 2023. [Seri 2010] PDRB Atas Dasar Harga Berlaku Menurut Kabupaten/Kota di Provinsi Jawa Tengah. <https://jateng.bps.go.id/indicator/157/1740/1/-seri-2010-pdrb-atas-dasar-harga-berlaku-menurut-kabupaten-kota-di-provinsi-jawa-tengah.html>

Probolinggo Regency



PLTU Paiton is located in Binor Village, Paiton District, Probolinggo Regency, East Java. The largest coal fired power plant complex in Indonesia has a total capacity of 4,725 MW: Unit 1 (400MW) and Unit 2 (400 MW) are owned by PT PJB and have been in operation since 1993 and 1994; Unit 7 (615 MW) and Unit 8 (615 MW) are owned by PT Paiton Energy and have been operating since 1999;

Unit 5 (610 MW) and Unit 6 (610 MW) are owned by PT Jawa Power and have been in operation since 2000; Unit 3 (815 MW) is owned by PT Paiton Energy and has been operating since 2012; and one unit (Unit 9) 660 MW is owned by PT PJB and has been operating since 2012. PT Paiton Energy is a company owned by RATCH Group Public Company Ltd. (45.5%), Nebras Power QSC (35.5%), TEPCO (7%), Chubu Electric Power (7%), and PT Toba Bara Sejahtera Tbk (5%). Meanwhile, PT Jawa Power is a company owned by Siemens (50%), YTL Corporation (17.5%), Marubeni (17.5%), PT Bumipertiwi Tatapradipta (15%). All coal fired power plant units, except for unit 3, have subcritical status and it is a priority to retire immediately.



Power Plant Unit 1, Unit 2	Owner PT PJB	Power Plant Unit 3	Owner PT Paiton Energy
COD 1993, 1994	Capacity 2 x 400 = 800 MW	COD 2012	Capacity 1 x 815 = 815 MW
Technology Subcritical		Technology Supercritical	
Power Plant Unit 5, Unit 6	Owner PT Jawa Power	Power Plant Unit 7, Unit 8	Owner PT Paiton Energy
COD 2000	Capacity 2 x 610 = 1.220 MW	COD 1999	Capacity 2 x 615 = 1.230 MW
Technology Subcritical		Technology Subcritical	
Power Plant Unit 9	Owner PT PJB		
COD 2012	Capacity 1 x 660 = 660 MW		
Technology Subcritical			

Source: Various sources

In 2022, Probolinggo Regency has a GRDP reaching IDR 38.93 trillion³³, which is the 19th largest GRDP out of 38 regencies/cities in East Java³⁴. Agriculture, forestry and fishery are the sectors with the largest contribution to the economy of Probolinggo Regency, reaching 32.87% of the total GRDP in 2022. On the other hand, the contribution of electricity to the economy is IDR 341.57 billion or 0.9% of the total GRDP in 2022³⁵.



33 Badan Pusat Statistik Kabupaten Probolinggo. 2023. Produk Domestik Regional Bruto Kabupaten Probolinggo Menurut Lapangan Usaha 2018-2022

34 Badan Pusat Statistik Provinsi Jawa Tengah. 2023. Produk Domestik Regional Bruto Kabupaten/Kota Jawa Timur Menurut Lapangan Usaha 2018-2022

35 Badan Pusat Statistik Kabupaten Probolinggo. 2023. Produk Domestik Regional Bruto Kabupaten Probolinggo Menurut Lapangan Usaha 2018-2022

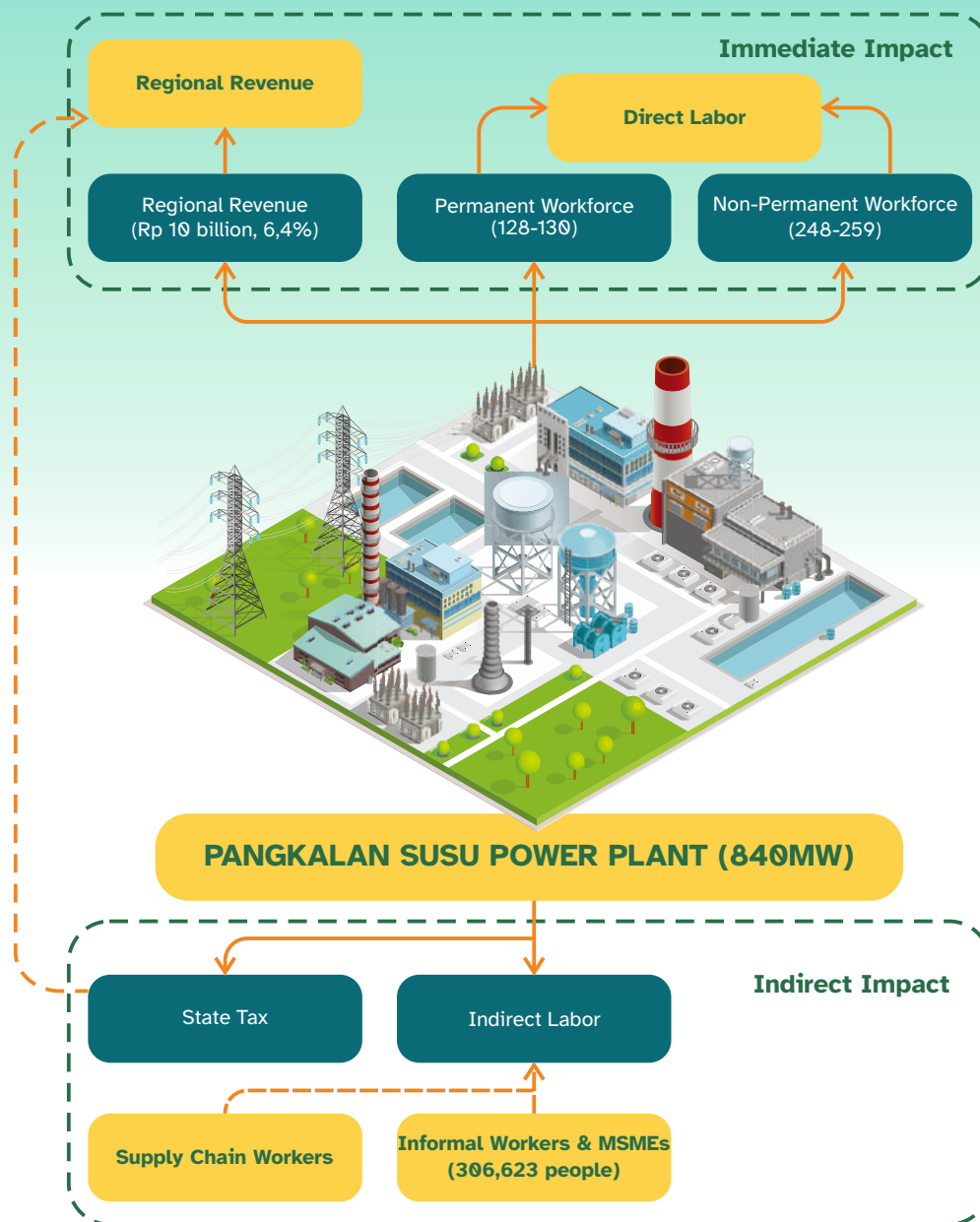


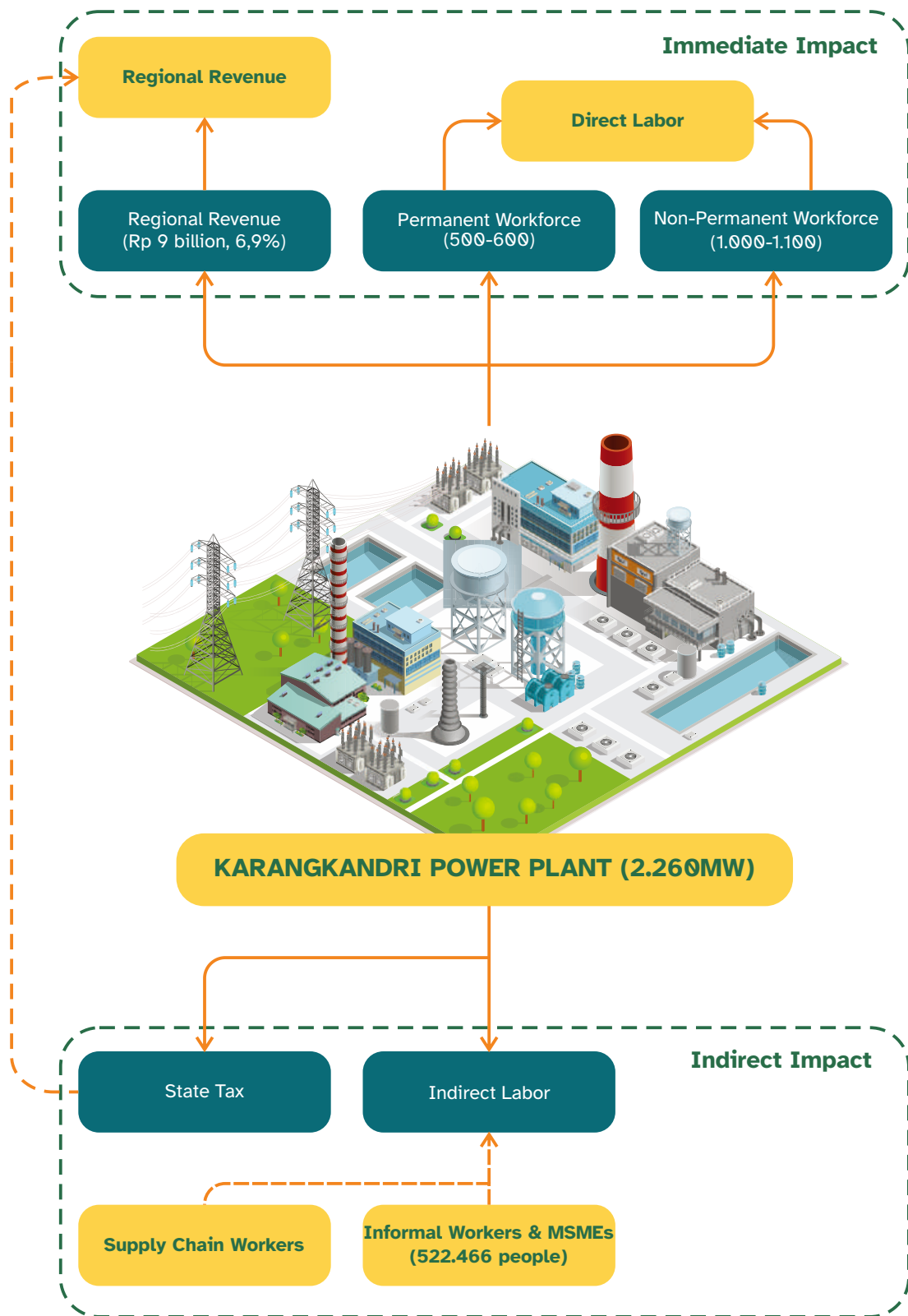
Regional Economic Interests in a Just Energy Transition

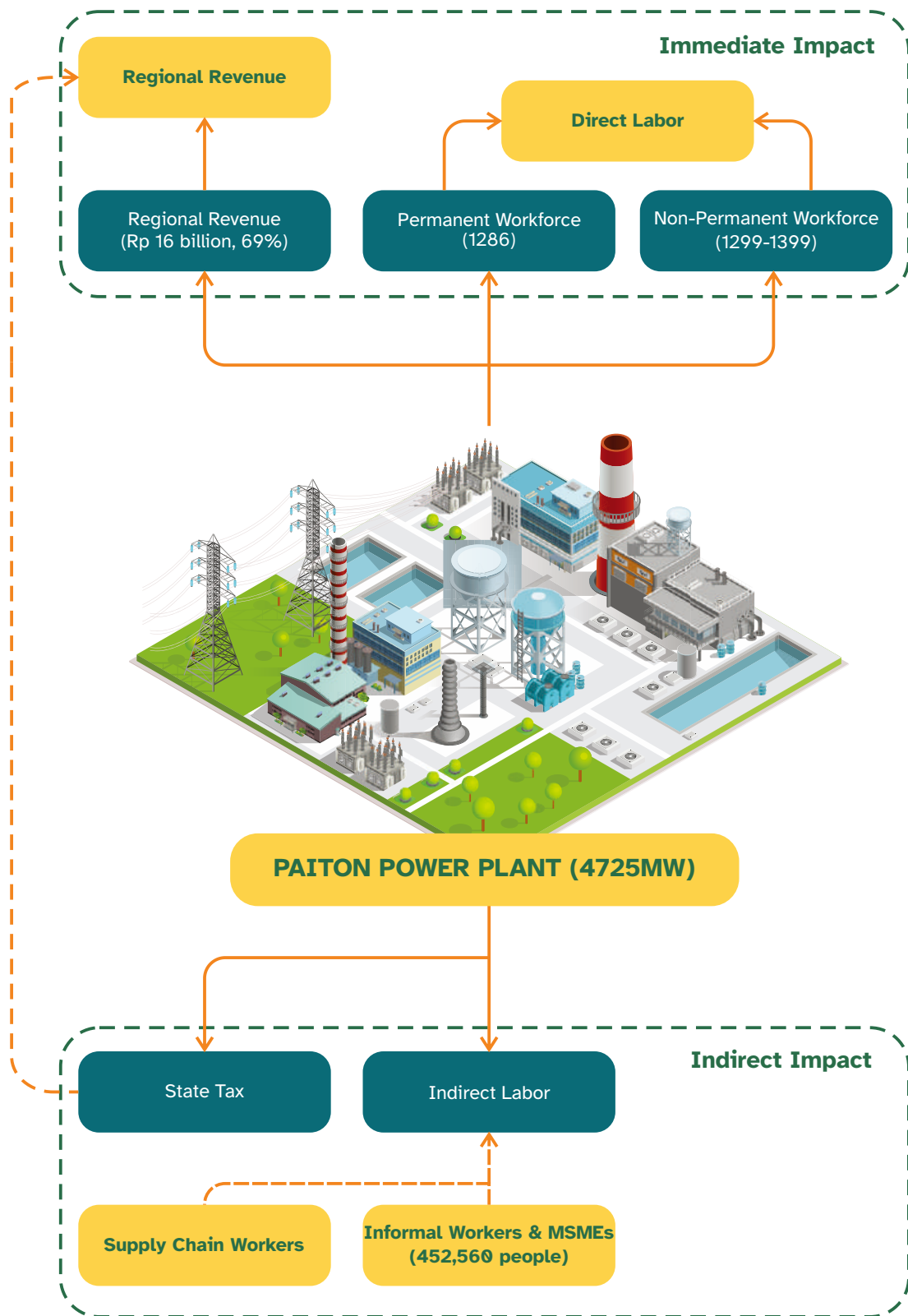


The Economic Impact of the Closure of Coal Fired Power Plants in Langkat, Cilacap and Probolinggo

The results of the estimated impact are still local in the areas around the coal fired power plant and other impacts have not been calculated including the impact on the coal mining are and the coal transport sector from the source to the port.







The minimal involvement of regional governments in energy transition planning can result in neglect of calculating various economic aspects at the regional level. These aspects include the impact on regional revenues and budgets, employment, investment flows for the regions, as well as the value of the economic turnover and income of MSMEs around industrial areas which have so far depended on fossil energy. Without involving the regional governments, the energy transition has the potential to be unfair to the regions because the interests related to these economic aspects would be sacrificed when the transition program is implemented.

Broadly speaking, the value chain of the fossil energy industry has business activities and employment that are spatially concentrated in certain regions in Indonesia. Coal mining activities, for example, are highly concentrated in several areas in Kalimantan, where in East Kalimantan 35.1% of GRDP and 75.6% of regional exports come from coal mining. On the downstream side, various regions become the backbone of electricity where the existence of the coal fired power plant becomes concentrated in certain areas which makes the local government in the region have special treatment for the economic activity of the coal fired power plant. In order to achieve a just energy transition, these regions need special planning to ensure that economic activity can gradually shift away from the fossil energy industry to a more sustainable industry.

In offering a more contextual understanding of the potential economic impact in the regions, this study explores the calculation of the economic aspects that have been mentioned in the three regions that have the potential to carry out a just energy transition scheme, especially by carrying out the early retirement of coal fired power plant. The three regions are Langkat Regency in North Sumatra, Cilacap Regency in Central Java, and Probolinggo Regency in East Java. Each of these three regions has plans for early retirement of coal fired power plant, namely PLTU Pangkalan Susu, PLTU Karangkandri, and PLTU Paiton.

Pangkalan Susu Power Plant

Power Plants
Unit 1, Unit 2

Established Year
2014, 2015

Capacity
2 x 200=400 MW

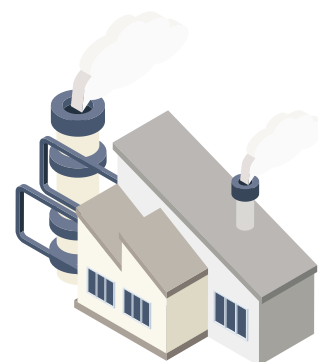
Coal Needs
2,06 million tons

Power Plants
Unit 1, Unit 2

Established Year
2014, 2015

Capacity
2 x 200=400 MW

Coal Needs
2,06 million tons



Karangkandri Power Plant

Power Plants
Unit 1, Unit 2

Established Year
2006

Capacity
2 x 300 = 600 MW

Coal Needs
2,2 million tons

Power Plants
Unit 3

Established Year
2016

Capacity
1 x 660 =660 MW

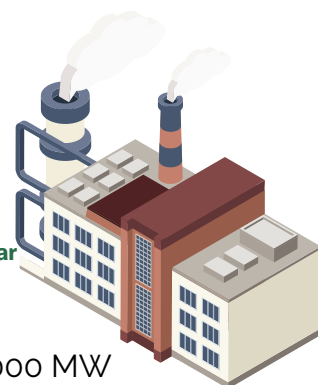
Coal Needs
2,2 million tons

Power Plants
Unit 4

Established Year
2019

Capacity
1x 1.000 =1.000 MW

Coal Needs
3,2 million tons



Paiton Power Plant

Power Plants
Unit 1, Unit 2

Established Year
1993, 1994

Capacity
2 x 400 = 800 MW

Coal Needs
3.47 million tons

Power Plants
Unit 3

Established Year
2012

Capacity
1 x 815 =815 MW

Coal Needs
3.5 million tons

Power Plants
Unit 7, Unit 8

Established Year
1999

Capacity
2 x 615 =1.230 MW

Coal Needs
5 million tons



Power Plants
Unit 5, Unit 6

Established Year
2000

Capacity
2 x 610 =1.220 MW

Coal Needs
5 million tons

Power Plants
Unit 9

Established Year
2012

Capacity
1 x 660 =660 MW

Coal Needs
2.7 million tons

Source: Various sources



Ring 1 Karangandri Power Plant, Cilacap Regency, Central Java. Photo: CELIOS 2023



Ring 1 Paiton Power Plant, Probolinggo Regency, East Java. Photo: CELIOS 2023



Revenue and Regional Budget

One of the concerns of the local governments from the energy transition program is the impact on future regional revenues and budgets. In the context of the early retirement of the coal fired power plant, several sources of regional income that will be affected include Local Government Direct Revenue from Underground Water Tax, Surface Water Tax, Land and Building Tax (PBB), and retribution from various economic activities at the coal fired power plant.



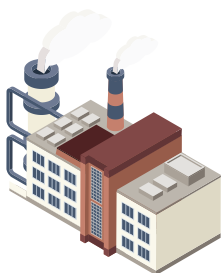
Cilacap

Power Plant

Karangkandri Power Plant Units 1&2 (600MW)

The average Local Government Direct Revenue contribution per year
Rp. 9 Billion

Proportion of all regional Local Government Direct Revenue
1,2%



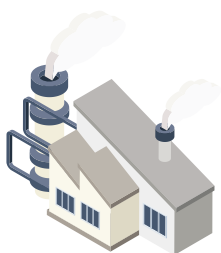
Probolinggo

Power Plant

Paiton Power Plant Units 1&2 (800MW)

The average Local Government Direct Revenue contribution per year
Rp. 9 Billion

Proportion of all regional Local Government Direct Revenue
3%



Langkat

Power Plant

Pangkalan Susu Power Plant (840MW)

The average Local Government Direct Revenue contribution per year
Rp. 10 Billion

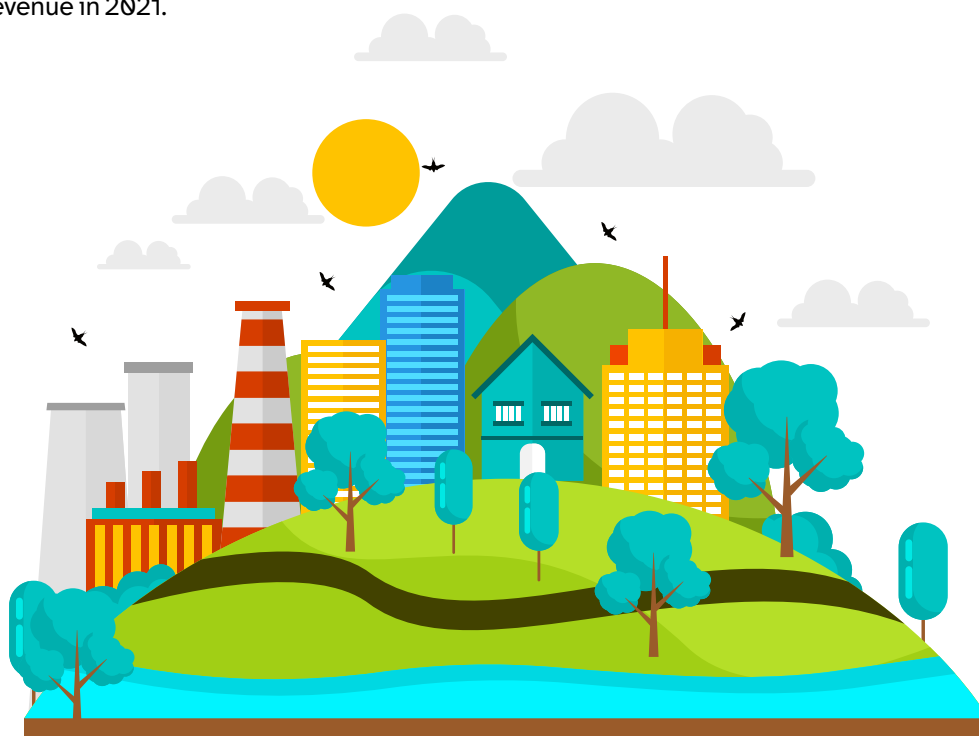
Proportion of all regional Local Government Direct Revenue
6,4%

Through a study of three regions with information from each Regional Financial and Asset Management Agency (BPKAD), the contribution of coal fired power plant to Local Government Direct Revenue has so far been quite significant but relatively small to the overall regional Local Government Direct Revenue. In Cilacap Regency, PLTU Karangandri Units I & II with a capacity of 600 MW has an average contribution to Local Government Direct Revenue around Rp. 9 billion per year, whereby this amount is based on land area and coal fired power plant production output. The average value of this Local Government Direct Revenue contribution covers 1.2% of the total Local Government Direct Revenue of Cilacap Regency in 2021.

In Probolinggo Regency, PLTU PLN Paiton units 1 & 2 with a total capacity of 800MW also have an average contribution to Local Government Direct Revenue of around IDR 9 billion per year. It should be noted that this figure is an estimate of a factor of various taxes that are also contributed to other districts and also to the provincial government such as the groundwater tax. The average value of this Local Government Direct Revenue contribution covers 3% of the entire Probolinggo Regency's Local Government Direct Revenue in 2021.

Meanwhile, in Langkat Regency, PLTU Pangkalan Susu with a total capacity of 840MW has an average contribution to Local Government Direct Revenue of around IDR 10 billion per year. This amount is an estimate of the value of the agreement between the regional government and the management company based on benchmarks for the size of the coal fired power plant agreement in other regions. The average value of this Local Government Direct Revenue contribution covers 6.4% of the overall Local Government Direct Revenue of Langkat Regency in 2021.

The influence of the coal fired power plant on regional income does not only come from Local Government Direct Revenue directly received by the regions, but also indirectly through Regional Tax Revenue Sharing from taxes paid by the coal fired power plant. This value generally varies because the tax paid by the company depends on the coal fired power plant's financial reports, as well as the PPA agreements which are relatively transparent to the public. However, this value can be ascertained to be relatively smaller than the Local Government Direct Revenue received directly by the regional government from the coal fired power plant. This means that its proportion to the overall regional income is lower.



Employment Impact

Employment is another aspect that is most often concerned with the implementation of the energy transition. From all studies on the early retirement of coal fired power plant, all parties who support the existence of coal fired power plant voice their concerns for the fate of coal fired power plant workers and indirect workers if the energy transition scheme is implemented.



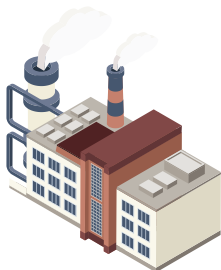
Cilacap

Power Plant
Karangkandri Power Plant

Power Plant Overall Capacity
2.260MW

Total Permanent Workforce
500 people *)

Total Permanent Workforce and Non-Permanent Workforce
1.000 people *) **)



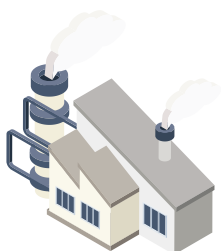
Probolinggo

Power Plant
Paiton Power Plant

Power Plant Overall Capacity
4.725MW

Total Permanent Workforce
1.286 people

Total Permanent Workforce and Non-Permanent Workforce
2.500 people *) **)



Langkat

Power Plant
Pangkalan Susu Power Plant

Power Plant Overall Capacity
840MW

Total Permanent Workforce
120 people

Total Permanent Workforce and Non-Permanent Workforce
240 people *) **)



*) Estimates based on survey results of local government institutions.

**) Workers in districts where PLTU operates. This figure does not include the workforce in the coal transportation sector and in the upstream coal mining.

Coal fired power plants in Indonesia have various capacities and efficiency levels, but the number of workers generally has a scale that is correlative to the production capacity of coal-powered power plants. In Cilacap Regency, the Department of Labor and Industry noted that there were around 500 workers who worked directly in all coal fired power plants in Karangandri. When combined with temporary workers, the number is expected to double.

This is in line with the information given by the interviewee at PLTU Paiton, Probolinggo. Of the 1286 workers who were registered by the Probolinggo Regency Manpower Office as working directly at the nine coal fired power plant Paiton units, it is estimated that the number of temporary workers who earn from the coal fired power plants is equivalent. This indicates that in total, there are around 2400 workers whose livelihoods come from the existence of the PLTU Paiton.

Meanwhile, in Langkat Regency, the number of direct workers at the PLTU Pangkalan Susu listed in PT Indonesia Power's 2020 Statistical Report is 120 people. According to information from local

sources, the number of temporary workers is also estimated to be equal to the number of direct workers. This shows that the total number of workers is estimated to be at least 240 people.

One shared concern in the areas that are being studied is complaints from residents who stated the low number of locals who are employed in the coal fired power plants. Of the three coal fired power plants, only a minority of all coal fired power plant workers are local people from the regions. Of the workforce taken from the areas around the coal fired power plants, almost all of them are workers in the low-skill worker category which in terms of income are not much different from the average income of other jobs available in those areas. The majority of workers, especially those with higher positions and incomes, are not local residents. Therefore, the residents of the local areas themselves do not feel the positive impact of the existence of the coal fired power plants on the employment of local workforce.



Lessons from the Energy Transition Program in Mpumalanga, South Africa

Prior to Indonesia, South Africa had previously implemented an energy transition program through JETP funding. South Africa's Just Energy Transition Investment Plan (JET IP) 2023-2027 involves local local government and develops appropriate approaches to build a sustainable economy in the areas that will be affected. The program also constitutes planning local economic resilience, environmental restoration, creating better jobs, and increasing the capacity of human resources in regions that will carry out energy transition schemes.



Foto: Bloomberg - Waldo Swiegers

This energy transition process can be an opportunity for local governments to encourage upskilling and reskilling programs for affected regions and workers so as not to increase the number of unemployment in areas affected by early retirement. This is consistent with a program that includes JETP funding in South Africa in the Mpumalanga area. In the JETP program, not only can local governments encourage provision of temporary income compensation for workers who lose their jobs, but can also request funding for

redeployment, reskilling, retraining programs, support for worker relocation, and support for placement of affected workers. 9.2% of all JETP funding in South Africa (5.6 out of ZAR 60.4 billion) is budgeted for the employment program, which can be a benchmark for the Indonesia local governments to contribute in the budgeting and program planning side.

³⁹ The Presidency of the Republic of South Africa. 2022. South Africa's Just Energy Transition Investment Plan (JET IP) for the initial period 2023-2027. Government Publishers.

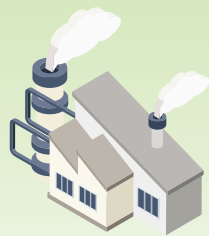


Foto: pexels.com/Los Muertos Crew

MSMEs' Economic Turnover Around the Coal Fired Power Plants

Apart from regional income and employment, another aspect that is measured is the indirect effect of the existence of the fossil energy industry on the economy in the region, especially for micro, small and medium enterprises (MSMEs). In the context of the early retirement of coal fired power plants, our study in three different locations show similar results concerning the impact of coal fired power plants on the economic patterns of residents in the surrounding areas.

Proportion of Informal Sector Workers to the Whole Population Working in the Regions (2021)



Langkat

The number of MSMEs

87.375 businesses

The number of informal sector workers

306.623 people

Informal sector workers

58,50%

Direct workers in the informal sector on a very small scale (self-employed)

23,37%

Family/Unpaid workers

10,83%



Cilacap

The number of MSMEs

20.015 businesses

The number of informal sector workers

522.466 people

Informal sector workers

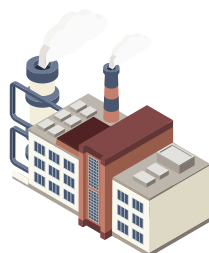
69,91%

Direct workers in the informal sector on a very small scale (self-employed)

21,82%

Family/Unpaid workers

14,90%



Probolinggo

The number of MSMEs

68.872 businesses

The number of informal sector workers

452.569 people

Informal sector workers

69,49%

Direct workers in the informal sector on a very small scale (self-employed)

20,32%

Family/Unpaid workers

19,20%

Source: Central Bureau of Statistics Langkat Regency, Cilacap Regency, Probolinggo Regency (2022)

One important finding is that the existence of the coal fired power plants does not significantly affect the income of the majority of MSMEs in the coal fired power plants' surrounding areas. Of all types of MSMEs, the two types of MSMEs that are relatively most affected by the existence of the coal fired power plants are the food and beverage as well as the boarding house sectors. The survey at the three coal fired power plant locations in Langkat Regency, Cilacap Regency, and Probolinggo Regency showed that the majority of MSMEs in the coal fired power plant regions did not feel a significant impact on the existence of the coal fired power plants. This is because the ecosystem built for worker activities results in a system that is quite closed so that only a small number of MSMEs feel a significant impact from the existence of the coal fired power plants in terms of income.

Direct or indirect workers at the coal fired power plants generally do not leave the coal fired power plant area until after work hours which makes the workers choose to rely on the canteens and company cooperatives, or leave them with a colleague in the coal fired power plant who has an attachment to one UMKM which is the only customer for a long time.

This condition results in the inequality of income levels among MSMEs. At the PLTU Karangandri, for example, one food and beverage MSME has a gross sales level of more than Rp. 100 million per month, while the gross sales of other MSMEs in the area are no more than Rp. 15 million per month. The majority of these food and beverage businesses admit that the existence of the coal fired power plants has had little effect on their business sales.



Ring 1 Karangandri Power Plant on East Ring Road, Karangandri. This area has the densest commercial activity compared to other areas in Ring 1. According to information from local MSME players, the existence of the power plant does not have significant economic impact.



MSMEs in the food and beverages sector in Ring 1 Karangandri Power Plant. The impact of power plant activities only focused on a small number of MSMEs. One MSME can take up more than 90% of the share of expenditure for consumption workers at adjacent Power Plant units.

This condition was also confirmed by a survey of MSMEs in the PLTU Pangkalan Susu area in Langkat Regency and PLTU Paiton in Probolinggo Regency. At the PLTU Pangkalan Susu which has its own canteen for employees and partners, MSMEs located in the PLTU Ring 1 area admit that on average coal fired power plant workers and people related to coal fired power plant activities

only contribute no more than 5% of their total sales. At the PLTU Paiton, in several work areas that are far from the canteen, the coal fired power plant workers themselves usually use the help of a party within the coal fired power plants to meet their consumption needs who has attachment to only one MSME.



Ring 1 Paiton Power Plant in Jalan Raya Surabaya-Situbondo. There are no significant differences in the demographics and economic activities of the population compared to other areas along Jalan Raya Pantura.



The food and beverage MSMEs in Ring 1 of the Paiton Power Plant. Even though they are the closest MSMEs to the Power Plant, business actors admit that the existence of the Power Plant does not have an impact on their sales. Sales are almost entirely obtained from people crossing Jalan Raya Pantura who are not related to the Power Plant.

As for the boarding house and rented house businesses, in the three areas the need for temporary housing or housing for workers is relatively not as high as in the more densely populated industrial areas. This is because many workers from outside the region prefer to live in more urbanized locations and to avoid air pollution from burning fossil energy. In addition,

the coal fired power plants have also built a mess or dormitory for several types of employees. This causes the need for boarding houses or rented houses around the coal fired power plant area to be more limited compared to other industrial or commercial zones.



Regional Government Challenges and Opportunities in the Policy and Regulatory Framework



Regional Government Challenges in the Policy and Regulatory Framework

To review the various challenges in policy and regulatory aspects, this section will discuss the results of survey data as a case study conducted in 6 (six) regional governments, which consist of three Provinces, namely Central Java, East Java, and North Sumatra, and three Regencies, namely Cilacap, Probolinggo and Langkat. In this study, 4 (four) Dimensions were measured, namely: a) energy transition in JETP; b) energy transition regulatory objectives; c) correlation of regulations and problems that arise; d) anticipation and handling of the affected groups.



Dimensions

Energy Transition in JETP

Variable

- Regional governments' knowledge about JETP policy
- Regional governments' involvement in JETP policy formulation

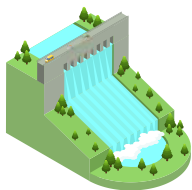


Dimensions

Purpose of Energy Transition Regulation

Variable

- Regional governments' knowledge about Presidential Regulation No. 11 of 2023
- The availability of the regulatory framework for implementing Presidential Regulation No. 11 of 2023



Dimensions

Regulatory Correlation and Associated Problems

Variable

- Regional governments objectively require Presidential Regulation No. 11 of 2023
- Presidential Regulation No. 11 of 2023 has answered the needs
- The local governments have regulations related to Renewable Energy



Dimensions

Anticipation and Handling of the Affected Communities

Variable

- Current regulatory conditions that protect vulnerable groups
- Regulatory conditions that guarantee material protection for the communities affected by the closure of the power plants

● Distribusi Dimension Responden



Dimension

Energy Transition in JETP

Table 1. Distribution of Energy Transition Dimensions in JETP

Statement	Yes		No		Do not know		Total	
	N	%	N	%	N	%	N	%
Regional governments know about the energy transition policy in JETP	0	0	6	100	0	100	6	100
Regional governments are involved in the formulation of the JETP energy transition policy	0	0	6	100	0	100	6	100

Source: Primary data processed in 2023

Based on Table 1, it can be seen that all respondents (100%) answered no (does not know) to the statement “the local government knew about the energy transition policy in JETP” and the statement “the local government was involved in the formulation of the JETP energy transition policy.”



Dimension

Energy Transition Regulatory Goals

Table 2. Dimensional distribution of the objectives of the energy transition regulations

Statement	Yes		No		Do not know		Total	
	N	%	N	%	N	%	N	%
Regional governments are aware of the existence of Presidential Regulation No. 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New and Renewable Energy Sub-sector	1	16,7	5	83,3	0	0	6	100
Regional governments are aware of the existence of Presidential Regulation No. 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New, Renewable Energy Sub-sector	0	0	6	100	0	0	6	100

Source: Primary data processed in 2023

Based on Table 2, it can be shown that 83.3% of respondents answered no (did not know) regarding the statement “the regional government knew about the existence of Presidential Decree No. 11 of 2023.” However, in the statement “the regional government has provided a regulatory framework for implementing Presidential Decree No. 11 of 2023,” all respondents (100%) answered no (does not provide).



Dimensi
Regulatory Correlation and Associated Problems

Table 3. Distribution of Regulatory Correlation Dimensions and Associated Problems

Statement	Yes		No		Do not know		Total	
	N	%	N	%	N	%	N	%
Regional governments objectively require Presidential Regulation No. 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New, Renewable Energy Sub-sector	4	66,7	0	100	2	33,3	6	100
Presidential Regulation No. 11 of 2023 Concerning Additional Concurrent Governments Affairs in the Energy and Mineral Resources Sector in the New and Renewable Energy Sub-sector answers the need for an energy transition in the regions	0	0	5	83,3	1	16,7	6	100
Regional governments have regulations related to New and Renewable Energy	3	50	3	50	0	100	6	100

Source: Primary data processed in 2023

Table 3 demonstrates that the majority of respondents, namely 66.7% of respondents, answered yes to the statement “the regional government objectively needs Presidential Regulation No. 11 of 2023.” However, 83.3% of respondents answered no to the statement “Presidential Decree No. 11 of 2023 addresses the need for an energy transition in the regions.” Meanwhile, in the statement “the regional government has regulations related to renewable energy,” 50% of respondents answered yes (has) while the other 50% answered no (does not have).



Table 4. Distribution of the Dimensions of Anticipation and Handling of the Affected Communities

Statement	Yes		No		Do not know		Total	
	N	%	N	%	N	%	N	%
Various current regulations can protect vulnerable groups in the regions	1	16,7	6	100	0	100	6	100
The current regulations have accommodated guarantees of material protection for the communities affected by the closure of the power plants	0	0	6	100	0	100	6	100

Source: Primary data processed in 2023

Table 4 shows that the majority of respondents, namely 83.3%, answered "no" to the statement "the various regulations that currently exist can protect vulnerable groups in the regions from the impact of the closure of coal power plants." All respondents also answered "no" regarding the presence of regulations to guarantee material protection for vulnerable communities after the closure of the coal power plants. This condition reflects the unpreparedness of regulatory instruments at the regional level in preparing for the negative economic impact of the energy transition, especially in the electricity sector.



● **Conformance Level of Reality (Performance) with Regional Government Performance Expectations**

Table 5. Conformity Level of Reality (Performance) with Expectations

Variables	Performance	Hope	Conformity Level
T1	2,00	3,00	66,67
T2	2,00	3,00	66,67
V1	2,17	3,00	72,33
V2	2,00	3,00	66,67
Y1	2,33	3,00	77,67
Y2	1,83	3,00	61,00
Y3	2,50	3,00	83,33
X1	2,17	3,00	72,33
X2	2,00	3,00	66,67

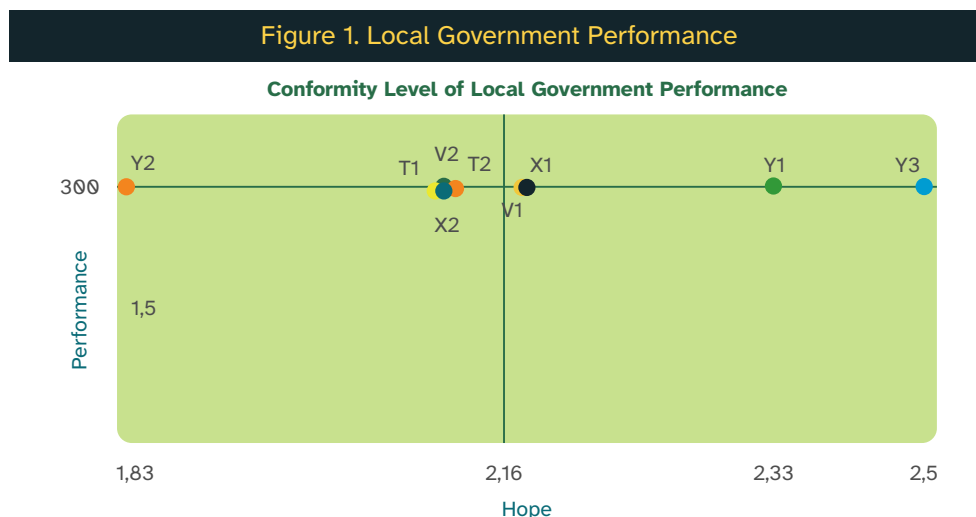
Source: Primary data processed in 2023

Table 5 demonstrates that:

- Variable T (Energy transition in JETP) has a level of compatibility between reality (performance) and expectations of 66.67%. **Therefore, the central government needs to broaden the understanding of energy transition policies in JETP and involve regional governments in formulating policies related to JETP.**
- Variable V (Purpose of Energy Transition Regulation) has a level of compatibility between reality (performance) and expectations in the range of 66.67% - 72.33%. The lowest level of conformity is shown in the indicator that the regional government has provided a regulatory framework for the implementation of Presidential Decree No. 11 of 2023, namely only 66.67%. **Therefore, the regional government needs to provide a regulatory framework for the implementation of Presidential Decree No. 11 of 2023**
- Variable Y (Regulatory Correlation and Associated Problems) has a level of conformity between reality (performance) and expectations in the range of 61% - 83.3%. The lowest level of conformity is shown in the indicator of Presidential Regulation Number 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New and Renewable Energy Sub-sector answers the need for an energy transition in the regions, namely only 61%. **Therefore it is necessary to review the contents of Presidential Decree No. 11 of 2023. This regulation must be reviewed and revised to ensure that it can answer the needs of the energy transition in the regions.**
- Variable X (Anticipation and Handling of the Affected Groups) has a level of conformity and reality (performance) and expectations in the range of 66.67% - 72.33%. Coal fired power plants are only 66.67%. **Therefore, it is necessary to review the contents of the regulation. Regulations need to be evaluated and improved to ensure that they can accommodate material protection guarantees for the community impacted by the closure of the coal fired power plants.**

● Analysis of Local Government Performance Improvement

Analysis of local government performance improvement was carried out using a quadrant analysis of the suitability of local government performance. This can be seen in Figure 1 below:



Quadrant I

This quadrant shows important indicators. The conditions on these indicators should have been obtained by the respondents. There are 3 indicators included in quadrant I, namely:

- Local governments are aware of the existence of Presidential Decree No. 11 of 2023 (V1);
- Local governments objectively requires Presidential Regulation No. 11 of 2023 (Y1);
- Local governments have regulations related to New and Renewable Energy (Y3) (RUED) in 3 provinces

Quadrant II

This quadrant shows indicators that are less important, but it shows receiving perceptions of more than what is expected so that it does not make improvement a priority. In this study, there were no indicators in quadrant II.

Quadrant III

This quadrant shows several indicators that have less important influence, but it shows that they do not get the reality as expected so that they become the focus of attention. In this study, there were no indicators in quadrant III.

Quadrant IV

This quadrant shows several indicators that affect and indicators that must be corrected immediately because this attribute is considered very important but the respondents have not received the reality as expected so that it becomes a priority for improvement. There are 5 indicators included in quadrant IV, namely:

- Local government knows the energy transition policy in JETP (T1);
- The local government is involved in the formulation of the JETP energy transition policy (T2);
- The regional government has provided a regulatory framework for implementing Presidential Regulation No. 11 of 2023 (V2);
- Presidential Regulation No. 11 of 2023 answers the need for an energy transition in the regions (Y2);
- The current regulation has accommodated material protection guarantees for the communities affected by the closure of the coal fired power plants (X2).

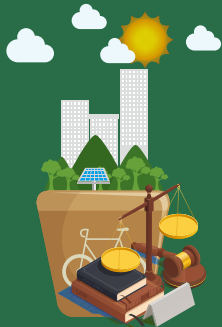
Therefore, it is necessary to immediately prioritize repairs.

The survey findings on energy transition regulations for optimizing the use of Renewable Energy above, are also confirmed in the two contents of the Presidential Regulation which are problematic:



Presidential Regulation Number 11 of 2023

It has not clarified the concept of division of concurrent government affairs in the Renewable Energy sector with the regional government.



Law No. 23 of 2014 concerning Regional Government (UU Pemda) is the parent regulation of Presidential Decree No. 11 of 2023 concerning the distribution of authority. Referring to Article 9, Article 11, Article 13 and Article 15 paragraph (2) of the Regional Government Law, the division of roles between the central and regional governments has not been clearly formulated in the Renewable Energy sector. Due to these deficiencies, Presidential Decree No. 11 of 2023 should also formulate norms related to sub-affairs of Renewable Energy which will be divided (such as: formulation of policies, development, central support, licensing), coordination of the implementation of authority, monitoring and evaluation, as well as guidance and supervision. Thus, the governance of concurrent government affairs in the Renewable Energy sector with the regional government comprehensively answers the shortcomings of the regional



Regencies/Cities are not involved in Renewable Energy matters

Presidential Regulation No. 11 of 2023 does not divide concurrent government affairs in the Renewable Energy sector into regencies/cities. The distribution of affairs is only given to the province. Referring to the regional government law, the province is actually the representative of the central government. The portion of regional government participation should be pushed up to the district/city as the authority that directly deals with the affected communities and parties. Therefore, the division of concurrent government affairs in the Renewable Energy sector must be able to ensure the involvement and distribution of roles from the central,



Presidential Regulation No 112 of 2022

The Presidential Regulation does not formulate a systematic and integrated concept regarding the direction of Renewable Energy Development for the Provision of Electricity. The formulation of Article 1 point 5, which regulates the Electricity Supply Business Plan (RUPTL) does not clarify the concept of Renewable Energy Development in the process of generation, transmission and distribution. The regulation focuses more on regulating the sale of electricity and ignores the development model.

The paradigm behind the Presidential Regulation, as illustrated in the consideration given to letter a, focuses more on accommodating investment needs. It is not based on environmental and climate issues as the main concern of the global community.

The Renewable Energy Development Policy formulated in the RUPTL is not integrated with the Transition Policy Formulation and Road Map in the Renewable Energy Bill which is being discussed by the government and the People's Representative Assembly.

Restrictions on coal fired power plants are inconsistent as they still open opportunities for the opening of the plants with loose and unmeasurable criteria

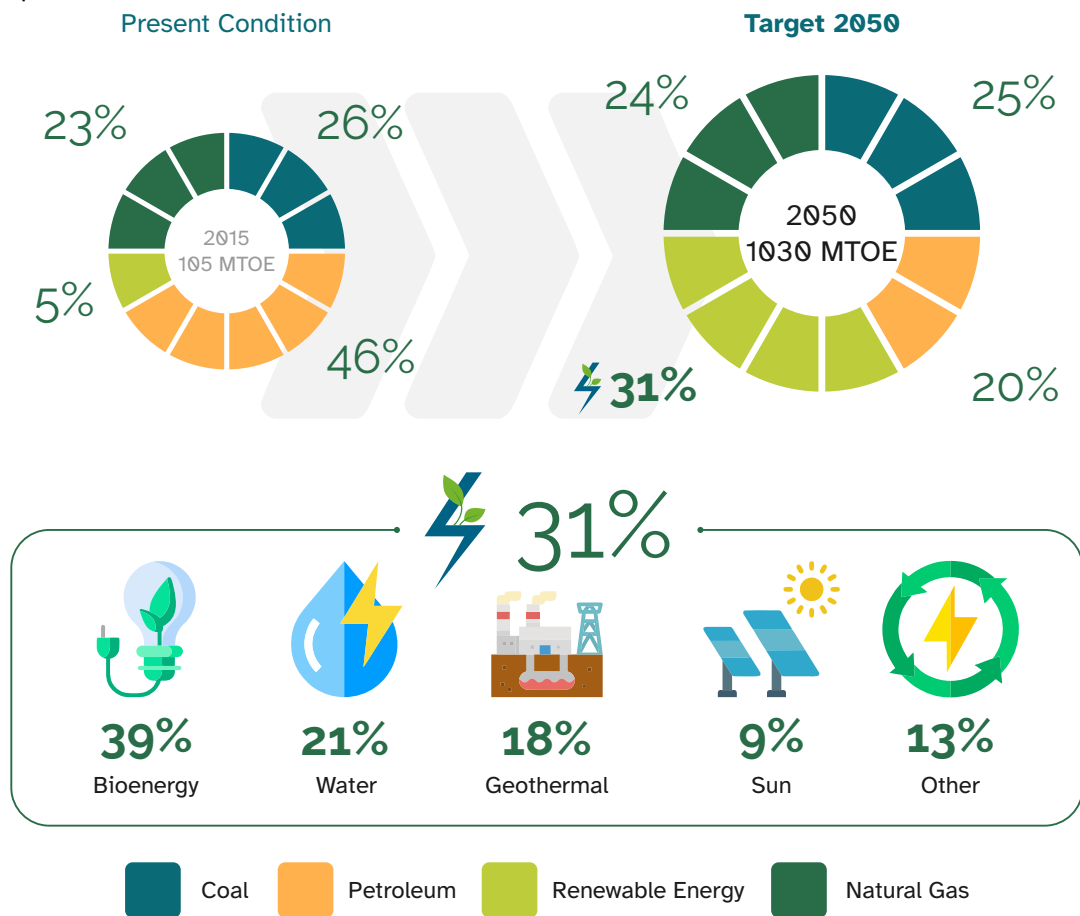
The policy to accelerate the closure of coal fired power plants through Renewable Energy generators remains optional and without strict norms. This is because Article 3 paragraph (6) still uses the phrase "can" which implies that it is non-binding.



Mapping Opportunities and Optimizing Regional Roles in the Energy Transition

Referring to the IEA³⁶ study, achieving zero emissions in 2060 can be carried out through four approaches: the deployment of renewable energy resources; energy efficiency; electrification; and network interconnection. In the context of Renewable Energy, as an archipelagic country, Indonesia has the potential to produce renewable energy and the available resources are distributed in various regions.

The energy security policy formulated in the Indonesia Vision 2045 document explains that the role of Renewable Energy will be increased to 30 percent. Electric power generation will be increased to more than 430 GW, electrification ratio is 100 percent since 2020, and energy supply per capita will be increased to 7 thousand kWh in 2045. The development of electricity infrastructure also applies the concept of archipelago to ensure that fulfillment of electricity per capita is more effective.



Source: Bappenas 2022

36 International Energy Agency. 2022, Special Report An Energy Sector Roadmap...Op.Cit. hlm.3



Bioenergy

57
Potential (GW)

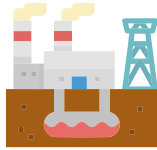
3.087
Utilization (MW)



Water

95
Potential (GW)

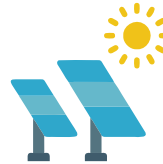
6.689
Utilization (MW)



Geothermal

24
Potential (GW)

2.355
Utilization (MW)



Sun

3.295
Potential (GW)

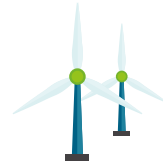
272
Utilization (MW)



Sea

60
Potential (GW)

0
Utilization (MW)



Wind

155
Potential (GW)

154
Utilization (MW)

3.686
Total Potential (GW)



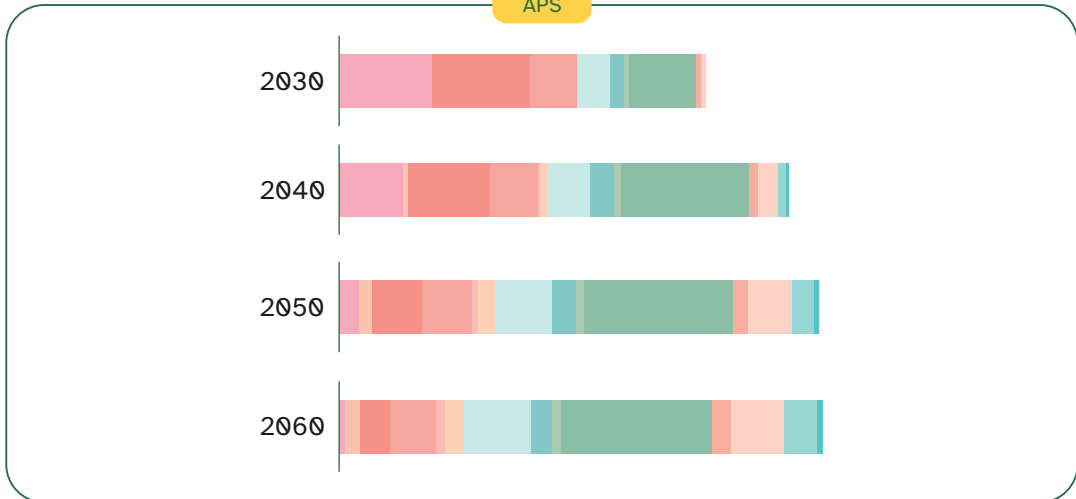
12.557*
Total Utilization (MW)

Source: Directorate General of Renewable Energy and Energy Conservation (DG Renewable Energy)

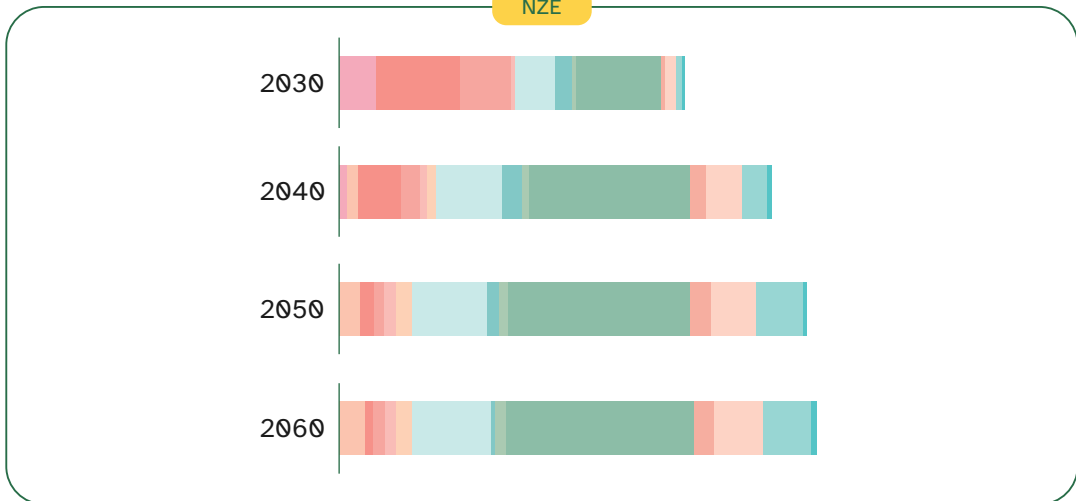
Total energy supply in Indonesia in the NZE Policy announcement scenarios
2050, 2021 and 2030-2060



APS



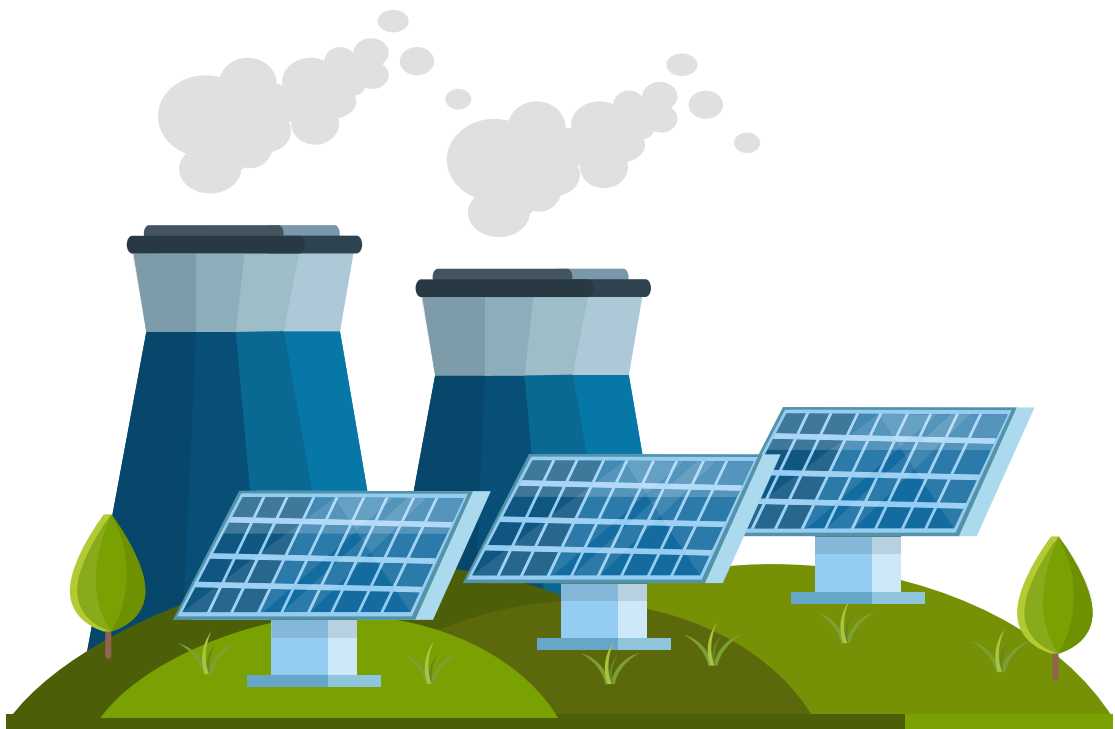
NZE



- Another renewable energy
- Modern renewable energy gas
- Natural gas with CCUS technology
- Wind
- Liquid modern renewable energy
- Sustainable natural gas
- Solar Panels
- Solid modern renewable energy
- Oil
- Water
- Old ways of using biomass
- Coal with CCUS technology
- Geothermal
- Nuclear
- Sustainability coal

Source: IEA 2022

To optimize energy transition opportunities in this context, the concept of energy justice has a special value because it questions the extent to which "greening of a country's energy mix also considers the dimension of justice" to ensure the promotion of universal access to safe, affordable and sustainable energy. Energy equity refers to the availability, accessibility and affordability of clean energy³⁷, but also to trade unions. As a fair transition, it is necessary to safeguard the transfer of jobs as well as the just distribution of ecological benefits³⁸. In more detail, energy justice points to the fact that society's transition to a lower carbon future must be voiced openly, particularly on issues of equality and equity, considering that transition is not only about access to energy, but also the adverse effects that it has³⁹.



37 Jenkins, K., D. McCauley, R. Heffron, H. Stephan, and R. Rehner. 2016. "Energy Justice: A Conceptual Review." *Energy Research & Social Science* 11: 174–182.

38 Newell, P., and D. Mulvaney. 2013. "The Political Economy of the 'Just Transition'." *The Geographical Journal* 179 (2): 132–140.

39 Swilling, M., and E. Anneck. 2012. *Just Transitions: Explorations of Sustainability in an Unfair World*. Tokyo: United Nations University Press.



Just Energy Transition Framework (JET Framework)



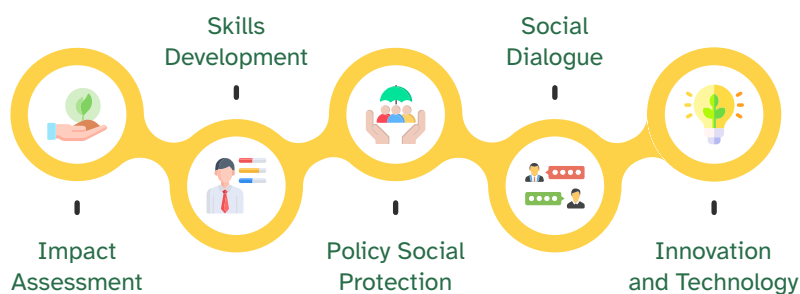
Referring to the concept of energy justice and analysis of economic problems, policy challenges, and laws at local governments, this study recommends an energy transition framework (Just Energy Transition Framework) at the central and regional levels (Local Government Framework) or a social equity framework.

● Transition Framework At Central Level

The energy transition framework at the central level rests on 3 principles:



These principles are then translated into 5 (five) governance arrangements and policy measures for the energy transition:



To carry out the transitional framework above, the government requires comprehensive regulations that regulate transitional aspects. This is because the current regulations, including Presidential Regulation Number 112 of 2022 concerning the Acceleration of Development of Renewable Energy for the Provision of Electricity and Presidential Decree Number 11 of 2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New and Renewable Energy Sub-sector, do not have broad reach in realizing a just transition.

For this reason, learning from the energy transition policies in South Africa⁴⁰ in the JETP, a Draft Climate Change Bill (Climate Change Bill) was introduced as a comprehensive normative basis in designing a sustainable transition in which it regulates matters related to: a) the principle of a fair transition; b) environmental governance; c)

alignment of climate policies from the center to the regions; d) institutional (climate change commission); e) climate change response; f) climate change adaptation (scenario-strategy); g) financing and investment; and h) implementation action framework⁴¹.

South Africa is not the only country introducing a Climate Change Bill for the implementation of the energy transition. Several countries that have introduced and are currently preparing such bill include: a) Australia Climate Change Act 2022⁴²; b) German Federal Climate Change Act⁴³; c) India The Climate Change Bill, 2015⁴⁴; d) Isle of Man Climate Change Act 2021⁴⁵; e) Japan Climate Change Adaptation Act 2018⁴⁶; f) New Zealand Climate Change Bill 2021⁴⁷; g) Nigeria Climate Change Act, 2021⁴⁸; h) Korea 2021⁴⁹; i) UK Climate Change Act 2008⁵⁰; and j) Malaysia Climate Change Act⁵¹.

⁴⁰ South Africa's Just Energy Transition Investment Plan (JET IP) 2022, for the initial period 2023–2027

⁴¹ Minister of Forestry, Fisheries and The Environment, Climate Change Bill, Republic of South Africa draft 11 October 2021

⁴² Australia Climate Change Act 2022, No. 37, 2022.

⁴³ Official Journal of the European Union, 2021. establishing the framework for achieving climate neutrality and amending Regulations (EC).

⁴⁴ India The Climate Change Bill, No. 23 of 2015

⁴⁵ Isle of Man, Climate Change Act 2021

⁴⁶ Japan, Climate Change Adaptation Act No. 50 of June 13, 2018

⁴⁷ Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 New Zealand Government.

⁴⁸ Nigeria, Climate Change Act, 2021

⁴⁹ Korea, Framework Act on Carbon Neutrality and Green Growth to Respond to the Climate Crisis, 2021

⁵⁰ UK, Climate Change Act 2008

⁵¹ Amin Abdul Majid. 2021. Malaysia's Climate Change Act? What To Expect. Zico Law.

Indonesia, in carrying out a fair transition policy, should immediately present the Climate Change Bill to refine various sectoral regulations and thoroughly design energy transition governance whose content regulates:

- Principles of Just Transition;
- Concept of State Control over Energy;
- Climate Change Action Plan
 - Mitigation;
 - Adaptation;
 - Resilience;
 - Sectoral (ex: Industry, Agriculture, Health, Finance, Transportation, etc.)
- Planning and Evaluation;
- Implementing Policies and Institutions (Provincial/District/City involvement);
- Local Community;
- Funding;
- Education;
- Law Enforcement.

● Transitional Framework at the Regional Level

Observing the findings of case studies conducted on 6 (six) regional governments that have measured the dimensions of: a) energy transition in JETP; b) energy transition regulatory objectives; c) correlation of regulations and associated problems that; and d) anticipation and handling of the affected groups, combined with the concept of energy justice, this study presents

a methodology that enables regions to map the concept of transitional justice across 3 (three) dimensions: access, participation, and opportunity. This method was formulated based on studies by ICLEI and the Urban Transitions Alliance, which have committed to realizing a sustainable and inclusive transition⁵².





Access

To ensure equity and accessibility, LGs can implement targeted support measures for the energy transition and prioritize inclusive local planning to serve all parties. This research presents three paths focusing on geographic, demographic, and economic components for LGs to support a just transition. Prioritizing just access to resources, services and infrastructure.

- **The mechanism for determining Renewable Energy concession areas by the government.**
- **Support from the central and regional governments in accelerating the development of Renewable Energy**



A just access to resources, services and infrastructure is the first dimension of a transitional justice framework and is related to the provision of basic needs and the establishment of enabling conditions for meaningful participation in the society. The complexity of problems in the regions related to resources makes vulnerable groups face risks.

Access to information plays an important role in this context. When designed without considering equity, sustainability interventions often fail to benefit all facets of the society, while some economic measures even increase the burden on vulnerable groups.

From the local governments' perspective, paying attention to equal access in transition planning means identifying access gaps and implementing targeted support measures for those in need as well as prioritizing inclusive regional planning to ensure transitional policies can be enjoyed by all.

Concretely, local governments can support access to resources, services, and infrastructure through three interconnected channels that focus on place, people, and finance.



Geographic Access

Applying a place-based approach to support vulnerable environments/strategic partners for energy development

Applying a place-based approach to support vulnerable environments/strategic areas to address structural inequalities between regions that determine the living conditions of local populations, local governments can identify geographic priority areas to develop comprehensive policies and programs in partnership with affected communities. for energy development.



Demographic Access

Ensuring equal access regardless of gender, age, ability and origin

To create an inclusive transition, the government needs to acknowledge demographic inequalities and take into account the different realities of gender, age, physical and mental abilities, and language capacity in planning and providing services.



Economic Access

Innovative funding model to empower the regions

Public investment to address the quality of economic inequality at the structural level is well placed when empowering the residents of the regions through cultural and social participation and improving community infrastructure.



Participation

To pay attention to the governance aspects of the design of a just transition, **involving citizens in the process and engaging underrepresented voices to ensure no one is left behind** are key approaches for the government.



Designing programs with citizen involvement

- **The role of the community in protecting and maintaining the sustainability of the areas in Renewable Energy utilization activities.**

This dimension refers to the governance aspect of a just transitional design, emphasizing the involvement of citizens in the process and the involvement of underrepresented voices to ensure that no one is left behind.

The more programs are designed with citizen engagement and underrepresented voices in a meaningful way using multiple channels, the more they will meet the needs of the regions and generate long-term impacts. This can be ensured by prioritizing collaborative co-creation with regional agents and by empowering existing community initiatives.

Participation is the most promising when it is included early in the planning process and facilitated throughout the planning stages. This helps to ensure that the program is adapted to the specific context of the case and is implemented in a way that serves the needs of the regions.

Participation can have different levels of engagement, ranging from citizen consultation and co-production to levels of ownership and subsequent implications in program design.

From the government's perspective, enabling participation means identifying the groups that will be affected by the plans and ensuring appropriate channels are in place for meaningful and inclusive participation. Local governments can also act as organizers and advocates to support existing civil society initiatives, understanding and meeting their needs to ensure that they have local impacts.

Concretely, the government can support participation through three interconnected channels: representation, engagement and collaboration.



Representative Participation

Identifying vulnerable groups when designing programs

To ensure that sustainability programs represent diverse interests and needs regarding transitions and prioritize vulnerable communities, this dimension focuses on the involvement of affected populations and making all voices heard from the early stages of planning throughout the life of the project.



Interesting Participation

Collaborating with regional stakeholders through various methods

Representation is about recognizing and integrating the interests of various groups, while engagement is about finding the right methods/tools for the group to jointly design and influence programs



Collaborative Participation

Empowering existing initiatives in the regions

A key component to accelerate change on the ground is recognizing and supporting existing civil society initiatives that contribute to local priorities. The bottom-up approach is to empower local communities and enable shared ownership of the transition.



Opportunities

To offer a fair perspective for all, the government can target increased opportunities, providing career perspectives through training and support programs and strengthening and diversifying the local labor market.

Delivering fair opportunity through jobs, markets and training

- **Upskilling and reskilling**



Equal opportunity for employment, training and skills upgrading is the third dimension of the transitional justice framework.

The transition will enable millions of people to overcome poverty and enjoy a better life. It needs to demonstrate that sustainability programs support the local economy, workforce and, especially, benefit vulnerable workers.

Not all transitional jobs are the same. This is because some require highly skilled labour, which may not be readily available in the specific regions. Therefore, it requires educational and training opportunities to support upskilling and reskilling as well as incentives to support fairness and security in the labor market.

Thus, creating equal employment opportunities through transition programs requires focusing not only on the quantity of jobs generated from the transition programs but also on their accessibility and quality.

As an employer, enabling market shifts and bringing economic actors together, the government can support transitions that provide fair employment opportunities through three channels: employment opportunities, training opportunities, and labor market opportunities.



Job Opportunities

Prioritizing vulnerable groups in regional employment programs

The government can mobilize funds for sustainability programs that provide employment benefits. Increasing diversity and prioritizing vulnerable groups in such programs is an important step in designing a just transition programme.



Training Opportunities

Improving employability through training and upgrading skills

Providing a prospective career through training and support programs that help upskill and re-skill the local workforce to meet new job needs is key to ensuring transition programs that provide opportunities for local residents.



Job Market Opportunities

Supporting market conditions for long-term equity

Working with local stakeholders to support transitioning sectors and ensuring that they create long-term quality jobs with decent working conditions is a prerequisite for a just sustainable transition.

Conclusion

- Energy transition planning that pays little attention to regional interests has the potential to harm regions where coal-fired power plants affecting many economic aspects. On the other hand, regional involvement in the energy transition program can actually create a positive impact on the welfare of the local communities.
- The coal fired power plant early retirement plan has the potential to cause regions to lose around 1.2% to 6.4% of the total regional original income (Local Government Direct Revenue), depending on the structure of their respective economies. However, there are mitigation steps that can be taken, namely negotiating with the central government over the value of "transfers to the regions", as well as encouraging investment commitments in renewable energy as a substitute for the region's sources of income.
- On the employment aspect, in addition to funding compensation for workers' lost income from the early retirement of the coal fired power plant, the local governments also need to encourage upskilling and reskilling programs as was carried out for affected areas in the South African JETP program.
- This study found that the existence of the coal fired power plants actually did not have a significant impact on the economy of the majority of MSMEs in the surrounding areas so that early retirement could be carried out. However, to anticipate the indirect excesses of the closing of the coal power plants, mitigation efforts are needed. One of them is that local governments need to make sure to encourage more industries that contribute to the local MSMEs economy.
- In case studies regarding policies and regulations in six regions, it was concluded that: (a) the local government has little knowledge about and is not involved in the JETP energy transition policy; (b) The majority of regional governments who were respondents did not know about the existence of Presidential Decree No. 11/2023 concerning Additional Concurrent Government Affairs in the Energy and Mineral Resources Sector in the New Renewable Energy sub-sector; (c) To date, regional governments do not yet have a regulatory framework for implementing Presidential Decree No 11/2023; (d) Regional governments state that Presidential Decree No. 11/2023 has not addressed the need for the energy transition; (e) Regional governments stated that currently they have not provided material protection guarantees to the communities impacted by the closure of power plants. Apart from these findings, there are two normative problems in Presidential Decree No. 11/2023, namely the division of concurrent government affairs in the Renewable Energy sector which is not yet clear and districts/cities have not been involved in Renewable Energy issues.
- Mapping opportunities and optimizing the role of the regions is carried out by formulating an energy transition framework at the central level that involves the regions. The transitional framework at the national level is embodied in five governance arrangements for: (a) impact assessment; (b) skills development; (c) social protection policies; (d) social dialogue; and (e) innovation and technology. At the regional level, this is manifested in three dimensions: access, participation and opportunity.

Recommendations

The central government through the Coordinating Ministry for Maritime Affairs and Investment and the Ministry of Energy and Mineral Resources

- The JETP scheme, in which one of the important actors is the Coordinating Ministry for Maritime Affairs and Investments alongside the Ministry of Energy and Mineral Resources, needs to encourage a model of a just energy transition that involves local governments actively, both in drafting regulations at the law level and technical plans in the form of a Comprehensive Investment and Policy Plan (CIPP). Local governments need to participate in planning, setting budgets and implementing energy transition programs to ensure that regional economic interests in terms of regional income, employment and the livelihoods of local people are not neglected.
- The contents of Presidential Decree No. 11/2023 need to be reviewed to ensure that it can answer the energy transition needs in the regions, and the local governments provides regulations for implementing Presidential Decree No. 11/2023.
- In carrying out a just transition policy, Indonesia needs to immediately provide a Climate Change Bill to improve the various sectoral regulations.
- Synchronization between the RPJPN, RPJMN and RPJMD plans in strengthening the energy transition at the regional level is crucial to establish a unified program to funding sources.

The Ministry of Labor

- Establishing special programs related to reskilling and upskilling workers affected by the energy transition. This program can be linked to the vocational school curriculum, vocational training centers, and collaboration with PLN and related regional governments.
- Arranging incentives for private parties such as training institutions and educational institutions that are active in providing job training in the context of preparing for the energy transition.
- Preparing a road map for the transition of workers up to 2050.

JETP Secretariat

- The JETP Secretariat needs to broaden the understanding and socialization of energy transition policies and involve regional governments in formulating policies related to JETP funding plans.
- Forming a special working group that contains regional governments with the criteria of coal producing regions, regions with Renewable Energy potential, and regions with coal power plants and are included in the early retirement plan.
- Encouraging social dialogue between IPG, GFANZ and local governments, affected communities, trade unions and civil society organizations concerned with energy transition readiness and workers' transition.

Local Government

- In the coal fired power plants' early retirement plan, local governments need to encourage investment commitments in renewable energy as a substitute for regional sources of income.
- In mitigating the impact on the workforce sector due to the early retirement of the coal fired power plants, local governments can request guaranteed funding for redeployment, reskilling, upskilling, retraining programs, support for worker relocation, and support for placement of workers in the affected areas.
- Local governments need to take advantage of the momentum of the energy transition to encourage industries that have more impact on the local economy and MSMEs than previous industries.

- The transitional framework involving local governments operates in three dimensions: access, participation and opportunity.
- It is necessary to review the various transitional regulations, as mentioned in this report, in order to accommodate material protection guarantees for the communities affected by the closure of the coal fired power plants.

Business Actors

- Business actors in the renewable energy sector and the processing industry are encouraged to develop various apprenticeship and skill matching schemes with universities and vocational schools around the coal power plants.
- Research collaboration with local governments to accelerate Renewable Energy innovation that can be managed by BUMD (Local State Owned Enterprise), BUMDes (Village Owned Enterprise)
- Increasing the investment portion and absorption of MSME raw materials around the coal-fired power plants so that it becomes an effective mitigation effort from the negative excesses of coal-fired power plant early retirement.

Reference

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