AEER
AKSI EKOLOGI & EMANSIPASI RAKYAT

**Input for COP 30 Presidency Roadmap on the Transition Away from Fossil Fuels in a Just, Orderly and Equitable Manner**

(a) What are the most critical barriers — whether physical, economic, financial, institutional, technological or social— preventing a transition away from fossil fuels?

- In the context of Indonesia, strong economic and political incentives continue to entrench coal dependency. Indonesia is the second-largest coal exporter globally, accounting for around 30% of global coal exports (by value) in 2025, while coal and coal-derived products contribute approximately 5.6% of national export value. This global positioning reinforces domestic reliance on coal revenues. At the local level, limited economic diversification, combined with the dependence of workers and regional economies on coal-related jobs and insufficient investment in alternative livelihoods, creates significant structural barriers to a just and sustainable transition.
- Energy system lock-in remains a major barrier, with coal still dominating for around 60-65% of Indonesia's electricity generation, supported by long-term power purchase agreements (PPAs). These arrangements reduce system flexibility and delay renewable energy integration, while shifting transition risks and costs unevenly across stakeholders.
- Grid and infrastructure constraints significantly limit renewable deployment. Indonesia's fragmented archipelagic system, combined with the concentration of over 70% of electricity demand in Java-Bali, creates unequal grid capacity and increases curtailment risks in outer regions
- Land use and permitting challenges continue to delay renewable energy projects. Complex land acquisition processes and overlapping regulatory framework often result in project lead times of 3-5 years, undermining investment certainty
- Renewable energy deployment remains structurally lagging, with only 15% of the primary energy mix, far below the national target of 23% by 2025, indicating persistent policy, regulatory, and investment bottlenecks.

(b) What potential levers, whether economic, financial, institutional, social or technological, exist for accelerating the implementation of the transitioning away commitment?

- **Reforming fossil fuel subsidies and price mechanisms.** Indonesia continues to allocate around IDR 713.5 trillion (~ USD 45 billion) in energy subsidies in 2024, with nearly 90% directed to fossil fuels, significantly distorting energy markets and delaying the competitiveness of renewables

- **Strengthening grid infrastructure and regional interconnection.** Indonesia's power system remains highly centralized, with over 70% of electricity demand concentrated in Java-Bali, while outer islands face limited grid capacity, constraining renewable integration and reinforcing regional inequality.
- **Streamlining permitting and land acquisition processes.** Reducing project lead times (currently 3-5 years) through regulatory simplification and clearer land governance frameworks, particularly for renewable energy projects.
- **Promoting decentralized and community-based energy systems.** Despite persistent gaps in energy access across remote regions, decentralized solutions remain underutilized, even though centralized systems fail to adequately serve Indonesia's archipelagic geography of 17,000+ islands.
- **Enhancing regulatory certainty and institutional coordination.** Policy inconsistency persists in a system where fossil fuels still dominate around 82% of electricity generation (with coal alone >64%), undermining investor confidence and slowing the scale-up of renewable energy.

(c) What country, regional or sector roadmap experiences, best practices, and lessons learned can be shared?

- At the community level, the Sumba Iconic Island initiative demonstrates how decentralized renewable energy systems can expand energy access while promoting local economic development. Electrification in Sumba increased significantly from around 50% in 2010 to over 90% by 2020, supported by a long-term vision of achieving 100% renewable energy-based supply. A key lesson is the importance of community engagement, cross-sector partnerships, and sustained capacity building to ensure long-term sustainability.
- At the project level, large-scale initiatives such as floating solar power plants (e.g., Cirata, 192 MWp) illustrate the potential of innovative technologies to accelerate renewable energy deployment. The project, currently the largest floating solar PV in Southeast Asia, can generate around 300 GWh per year and supplying electricity to approximately 50,000 households, highlighting the importance of grid readiness and regulatory support for scaling up renewables.
- At the national planning level, Indonesia's Electricity Supply Business Plan (2025-2034) signals a more ambitious transition pathway, targeting 69.5 GW of new capacity, with around 76% coming from renewable energy and storage systems. This reflects a significant shift in long-term planning toward clean energy. However, persistent gaps between planning and implementation, where fossil capacity additions have historically outpaced renewables, highlight the need for stronger

policy consistency, execution capacity, and investment readiness to translate targets into real deployment.

(d) How can a just, orderly and equitable transition best reflect the diverse realities of countries at different stages of development and with different degrees of dependence on fossil fuels?

- **Applying differentiated pathways.** Transition timelines and strategies must reflect national circumstances, particularly for countries with high fossil fuel dependence, where coal still accounts for over 60-65% of electricity generation, requiring more gradual and supported phase-down pathways.
- **Scaling climate finance and concessional support from international stakeholders.** Developing countries require significantly higher levels of accessible and affordable financing, current commitments such as USD 20 billion under JETP Indonesia remain insufficient compared to actual transition needs, which are estimated to reach hundreds of billions by 2050. This includes prioritizing more accessible and predictable climate finance, also increasing the share of concessional and grant-based climate finance.
- **Expanding energy access and equity.** In archipelagic countries of over 17,000 islands and developing contexts, decentralized renewable energy systems are critical to addressing uneven access, particularly in regions where centralized grids remain limited or even are not suitable for grid interconnection.
- **Strengthening technology transfer and local capacity.** Bridging technological gaps requires enhanced international cooperation such as technology transfer, technical assistance, and establish inclusive governance mechanism to support domestic manufacturing, grid management, and renewable integration capabilities in developing countries and affected communities to meaningfully shape and implement just transition pathways.
- Justice for worker transitions, local economic diversification, and accessible financing for fossil fuel-dependent regions (including those along the supply chain) so that no one is left behind in the agenda of energy transition. Achieving these demands workforce reskilling programs, structural economic transformation, alongside robust monitoring and evaluation to ensure the transition is implemented in a just and equitable manner.