

Towards Inclusive Energy Transition in Indonesia



Powering Progress: Indonesia's Inclusive Energy Transition Goals

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As an emerging economy heavily reliant on fossil fuels, Indonesia faces significant challenges in decarbonizing its energy sector while ensuring energy security and affordability. In line with Indonesia Emas 2045 vision, the country aims to significantly reduce poverty and inequality while promoting sustainable and low-carbon development. Indonesia's ambitious goals include achieving net zero emission (NZE) by 2060 and reducing Greenhouse Gas Emission (GHG) emission intensity by 93.5% while simultaneously increasing per capita income of USD 30,000 and reducing the poverty rate to less than 1% by 2045.

These ambitious targets extend to the energy sector. According to energy-related planning documents, the share of renewable energy (RE) is expected to range from 34% to 85% in the overall energy sector and from 43.5% to 83% in the power sector. However, the current progress remains far from meeting these targets. The short-term goal is to achieve a 23% RE share in the power sector, but as of 2022, only 14.6% of installed capacity comes from RE sources. Additionally, Indonesia has historically struggled to provide reliable electricity access, especially in remote areas such as East Nusa Tenggara, Maluku, and Central Papua, despite a national electrification rate of 99.6% in 2022. Some areas continue to experience frequent power outages.

An often-overlooked issue in this transition is inclusivity. A just energy transition hinges on the foundational concepts of human rights, gender equality and empowerment, and accountability, as outlined in the 2024 Comprehensive Investment and Policy Plan-Just Energy Transition Partnership (CIPP-JETP). Therefore, an inclusive energy transition offers Indonesia the vital framework to accelerate economic growth, address poverty and inequality, and decarbonize its economy simultaneously.



Energy Inclusivity: Challenges for Women and People with Disabilities (PWD)

Inclusivity in Indonesia's energy transition entails: (1) leaving no one behind by ensuring social protection policies for marginalized and vulnerable groups, and (2) fostering sustainability and resilience to create societies and economies that manage natural environment sustainably (JETP Indonesia, 2024).

Two segments of the society that are particularly underrepresented in energy transition are women and people with disabilities (PWD). Three key issues need to be considered:

- **Accessibility:** Women and PWD are also more likely to experience energy poverty.
- **Participation:** Limited access to information for women and PWD restricts their ability to contribute to energy efficiency and the transition process.
- **Impact:** PWD are especially vulnerable to energy poverty, while gender disparities further increase energy needs and expenses among women.

Research on the inclusive energy transition in Indonesia remains limited, often hindered by the lack of data, especially on the issue related to Gender Equality, Disability, and Social Inclusion (GEDSI). While Indonesia's Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) and Enhanced National Determined Contribution (NDC) emphasized the importance of mainstreaming gender and PWD considerations into the energy transition efforts, these practices are not adequately enforced and encouraged by the government and stakeholders. Therefore, policies should address the barriers faced by these groups.

Barriers to the Inclusion of Women in Energy Transition

Women remain underrepresented in energy policies, and their potential contribution are often overlooked, reducing their roles to that of mere energy consumers. This limited perspective fails to recognize the critical and multifaceted roles women play in energy transition efforts. Moreover, women from the low-income groups, particularly in rural or remote areas, struggle to access the benefits of the new ener-

gy sources. Unlike men, women's engagement with renewable and transition energy is not proportional to their access to information and technology. Preexisting gender inequalities further exacerbates the barriers to women's representation in the energy transition.

Barriers to the Inclusion of PWD in Energy Transition



People with disabilities are more vulnerable to poverty and energy poverty. In Indonesia, PWD are estimated to be 30-50% more likely to experience poverty than non-disabled people, particularly in urban areas. PWD are less likely to be employed, often face discrimination in the workplace, and tend to be excluded from economic opportunities. In the energy sectors, PWD are almost excluded from all stages of the production processes—pre-production, production, and post-production.

The Impact of Decarbonizing the Energy Sector on the Welfare of Vulnerable Groups

A simulation on the impact of energy transition to the welfare of vulnerable groups was conducted using climate modelling (GCAM – Global Change Assessment Model) combined with micro-level analysis (AIDS – Almost Ideal Demand System Model). This collaborative study involved LPEM FEB UI, ANU, IESR and SMERU Institute.¹

Study Findings

The NZE scenarios indicate a significant shift from coal to renewable energy in the electricity generation mix. Under the reference (no policy) scenario, coal use increases, while in the NZE 2050 scenario, solar power, including rooftop solar PV, becomes the dominant energy source. The GCAM model simulates carbon pricing in the NZE scenarios, projecting carbon price to rise to the level between USD 500-600 per ton of CO₂ as NZE targets are approached.

Efforts to achieve NZE are expected to slow poverty reduction, primarily due to increased commodity prices driven by higher energy costs from elevated carbon pricing. A faster NZE target results in higher poverty rates as well as inequality, with all vulnerable groups experiencing greater poverty and inequality by 2045 compared to the Reference scenario. Among these vulnerable groups, households with PWD are the most affected.

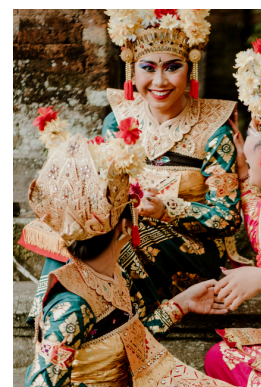
¹ LPEM FEB UI (the Institute for Economic and Social Research, Faculty of Economics and Business, Universitas Indonesia), ANU (Australian National University), the SMERU Institute, and IESR (Institute for Essential Services Reform).

Simulation results under the NZE 2050 scenario project a poverty rate of 4.60% in 2045, compared to 0.93% in the Reference scenario. Inequality is also higher for vulnerable groups, with households with disabilities facing the highest level of inequality. This is reflected in the Gini ratio, a measure of inequality, which reaches 0.355 in the NZE 2050 scenario, higher than the 0.347 in the Reference scenario. Female-headed households experience the highest inequality, with a Gini ratio of 0.392. These trends highlight the risks of the energy transition, especially for vulnerable groups.

The potential negative impact of energy transition can partly be mitigated by fiscal transfers. The incorporation of fiscal transfers shows that combining fiscal stimulus with carbon pricing reduces poverty and inequality across scenarios. In the NZE 2050 scenario, fiscal stimulus narrows the poverty rate gap to 1.92% by 2045, down from 2.68%. While vulnerable groups, such as households with PWD, still experience higher poverty rates, these rates gradually align more closely with the overall population.

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Similarly, fiscal stimulus reduces inequality, as indicated by a lower Gini ratio across scenarios. Vulnerable groups, including female-headed households and those with children or elderly members, also experience significant reductions in poverty rates due to fiscal stimulus, bringing them closer to overall poverty levels by 2045. This demonstrates that fiscal stimulus, supported by strong institutional commitment, can effectively mitigate the adverse impacts of the energy transition on vulnerable groups through the redistribution of revenue generated from carbon pricing instruments.





Policy Recommendations

1

Increase Access to Renewable Energy Technologies

Develop initiatives that improve access to renewable energy technologies, information and skills training for women and PWD, with special attention to rural and remote areas. Energy systems and infrastructure must be designed to be accessible to both women and PWD, ensuring that energy equipment, resources and information technology meet their specific needs. This combined effort will promote equitable access.

2

Incorporate Gender and Disability Considerations into Energy Policies

Recognize women and PWD as key contributors and decision-makers in energy planning, development, and governance. This includes involving them in policy formulation, decision-making, and project design processes, ensuring that their diverse needs and perspectives are fully considered and addressed throughout the energy transition.

3

Implement Targeted Social Protection Programs

The energy transition is expected to slow poverty reduction and increase inequality, particularly among vulnerable groups. Targeted social protection programs can help to mitigate these adverse impacts.

4

Strengthen Inclusivity in the JETP Initiative

Ensure that the Just Energy Transition Partnership (JETP) address inclusivity more comprehensively and operationalized its funding strategy effectively.

5

Improve Data Availability and Research

Data on women and PWD is essential for driving inclusive energy transition efforts. Their contributions will be the key to achieving the long-term NZE 2060 target.

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