



Policy Brief

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Pathways to a Just Energy Transition in Malaysia

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This policy brief is a series of research documents summarizing the knowledge of area contextualized to Southeast Asia and Malaysia, in particular from ongoing research work by the Center for Technology, Strategy & Sustainability (CTSS) at the Asia School of Business. The author of this issue is Renato Lima-de-Oliveira **Associate Professor at the Asia School of Business and Faculty Affiliate of the Center for Technology, Strategy and Sustainability, ASB**

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Executive Summary

The transition to a low-carbon energy system is among the most profound structural transformations of this century. As the energy sector accounts for about ¼ of global greenhouse gas emissions, decarbonizing our energy system is essential for achieving net zero goals. Yet this transformation goes far beyond technological changes such as replacing coal power plants with solar farms and batteries: it will reshape economies, labor markets, communities, and geopolitics. In this context, the concept of energy justice provides a useful framework to ensure that changes brought by transitioning to a low-carbon energy system address existing inequalities and does not create new ones. While there are many dimensions to energy justice, three stand out: distributive, procedural, and recognitional. Taken together, an energy justice perspective calls for fair distribution of benefits and burdens, inclusive participation in decision-making, and recognition of diverse social realities and historical disadvantages.

Building on this framework, the study examines how energy justice principles are reflected in three of Malaysia's policy documents: the National Energy Policy 2022–2040, the National Energy Transition Roadmap 2023 (NETR), and the Long-Term Low Emissions Development Strategy 2025 (LT-LEDS). These documents signal growing awareness of fairness and inclusivity in Malaysia's energy planning, emphasizing affordability, regional balance, and equitable access. However, distributive concerns are primarily treated in economic terms (e.g. protecting consumers and stimulating the creation of green jobs), but could advance more in terms of mechanisms to compensate workers or communities affected by the transition. Procedural justice remains limited by a centralized governance model of Malaysia (a characteristic not unique to the energy sector), where consultations are advisory rather than participatory, and community stakeholders have little influence over project design. Recognitional justice is the least developed dimension and could be strengthened by explicitly acknowledging the distinct experiences and needs of vulnerable groups.

International experience suggests that energy transitions are politically sustainable only when supported by broad climate coalitions that link fairness with growth. Compensation schemes, green industrial policies, and community participation can transform potential “losers” of the structural transformation brought by decarbonization of the economy into potential supporters, strengthening the legitimacy and resilience of climate action, particularly when faced with government changes. For Malaysia, integrating energy justice more deeply into policy formulation and execution has the potential to make the transition faster and politically resilient, a particularly important consideration for a country still fiscally dependent on oil and gas (O&G) revenues.

1. Introduction

Reducing man-made greenhouse gas (GHG) emissions is critical to avoid the worst potential consequences of climate change. The call to decarbonize the world economy will have widespread effects, but no other industry will be more affected than the energy sector, as about 75% of emissions originate from this sector. The structural change of our energy system from fossil fuels to clean energy sources calls for trillions of investments - the estimate by the International Energy Agency (IEA) is of USD 4.5 trillion a year by 2030 (IEA 2023). A world fueled by clean energy generation will be a world with lots of solar and wind farms, energy storage providers, and minimal fossil fuel plants. This is what the future will look like if we achieve net zero emissions by 2050-2060, a commitment made by many nations and companies.

Transforming the world economy towards low-emissions will imply a massive change in economic opportunities, affecting nation states (e.g. oil-rich countries like Saudi Arabia) to communities and individuals. The process, which is simultaneously technical, economical, and political, will generate winners and losers. Existing jobs from coal mining or oil extraction, and communities which rely on them for economic survival, are under threat and may well resist the pace of change. Others, which have resources expected to be in high demand (such as critical minerals like lithium or nickel) or able to seize new manufacturing opportunities (green industrial development), can benefit from a low-carbon future, but this trajectory is far from certain.

Making sure that the energy transition addresses existing inequalities and uneven power dynamics of the energy system, and avoiding the creation of new ones, is at the core of a booming topic of study, energy justice (sometimes referred to as 'just energy transition'). This policy brief summarizes for the broader public the key themes in this area of research and practice, which originates from the energy sector but also involves social protection, skills formation, inclusivity, and environmental preservation.

It highlights that incorporating the justice dimensions into energy policy design is a key contribution of this perspective. As the transition involves political choices, it also shows the importance of coalition-building to enable and sustain the structural changes brought by the energy transition. It then discusses the implications of the energy justice perspective to Malaysia, highlighting the importance of advancing the inclusivity of policy design and participation of local communities in policy and project siting decisions. The brief concludes by pointing out the usefulness of framing the energy transition through the energy justice lenses.

2. The Energy Justice Perspectives

In surveying a concept, it is generally useful to start with a definition. Sovacool and Dworkin (2015, p. 436) define energy justice "as a global energy system that fairly disseminates both the benefit and costs of energy services, and one that has representative and impartial energy decision-making."

A closely related area, albeit more narrowly focused on the process of decarbonizing the energy system, is the "just transition" concept. The International Labour Organization (ILO) refers to it as "maximizing the social and economic opportunities of climate action, while minimizing and carefully managing any negative impacts" (International Labour Organization 2024, p. 6).

It is common to see references to both terms, and they are closely related. However, energy justice brings a perspective that goes beyond the transition process. For instance, the ILO definition focuses on how best to manage the impact of climate action (e.g. adaptation or mitigation climate policies), while energy justice draws its roots in political philosophy principles that include ensuring equality of access to, and benefits from, the use of existing resources by current and future generations.

Accordingly, Sovacool (2014), in one of his pioneering works, proposes eight distinct principles for energy justice: availability, affordability, due process, information, prudence (ensure sustainable use of resources), intergenerational equity, intragenerational equity, and responsibility (to protect the natural environment).

Addressing existing inequalities while avoiding the rise of new ones is an apt summary of the concerns of energy justice. The call to "leave no one behind" is a catch-all phrase commonly used by practitioners in this field and reflects the key aim of transitioning to an energy system that is better than our existing one.

Writing in the context of the UK, Atkins (2023) puts inclusivity at the center of just energy transition considerations and devises six rules for a community-centered approach: 1) Push for community-scale projects; 2) Elevate and emphasize the participation and voices of communities; 3) Foreground community energy schemes in local economies and wealth building; 4) Prioritize those most vulnerable to energy poverty; 5) Ensure the participation and inclusion of workers; 6) Recognize that a just energy transition in the UK must equal justice everywhere.

The global dimension of a just energy transition, encapsulated in Rule 6, is a reminder of not shifting the burden of decarbonization to other countries. One practical implication of that is to provide financial support to less developed countries, such as through initiatives like Just Energy Transition Partnerships which, among other activities, supports early retirement of coal power plants. Another is to promote a transition which doesn't result in more exploitation and social conflicts in countries which are endowed with critical minerals, natural resources which will be in high demand as the world electrifies. Among the cited concerns are avoiding a higher demand for cobalt leading to civil wars in Congo, or promoting domestic requirements to the processing of nickel from Indonesia to create more and better paying jobs than just mineral extraction.

Reducing the complexity of many dimensions and prescribed rules for a just transition, it is possible to capture the core components of energy justice in three perspectives: distributive, procedural, and recognitional justice. They are summarized in the table below.

Table 1: Core Energy Justice Dimensions

Type	Description	Policy examples
Distributive	Concerned with the fair allocation of the benefits and burdens of energy systems, such as access to energy, exposure to environmental harm, and distribution of financial resources.	Ensuring that energy subsidies (when existent) are accessible to low-income households, not only the affluent; or designing tariff structures that protect vulnerable consumers from excessive energy price
Procedural	Focuses on inclusive and transparent decision-making processes, ensuring that affected communities have meaningful opportunities to participate in energy planning and policy formulation.	Involving local communities in the siting decisions of energy projects; requiring public consultations and stakeholder representation in national energy transition roadmaps.
Recognitional	Aims to acknowledge and respect the diverse needs, identities, and vulnerabilities of different social groups, recognizing historical marginalization.	Incorporating Indigenous land rights in energy projects; supporting innovative off-grid or community microgrid programs that don't require formal property titles.

Author's elaboration

3. Climate Coalitions and The Political Dimension of Energy Justice

A central insight emerging from the literature on energy justice and just transitions is that the success of decarbonization depends not only on technological and economic feasibility but also on building durable political coalitions that can sustain policy momentum over time. Incorporating energy justice principles can, thus, facilitate the persistence of climate action policies over time (and political cycles).

Scholars working on the interaction of climate action and public policy, such as Meckling et al. (2015), argue that winning coalitions for climate policy emerge when governments strategically combine “carrots and sticks” to support the transition. This includes deploying green industrial policies that generate concentrated economic benefits and, in doing so, cultivate domestic constituencies that support stronger carbon regulation over time. This sequencing logic, where early renewable subsidies or clean energy standards precede the stick of carbon pricing, creates a feedback loop that aligns industrial, labor, and political interests with decarbonization. Support comes first, by enabling new industries to be born, before moving towards sunseting dirty industries, which can naturally trigger political opposition.

Similarly to the last point, Healy and Barry (2017) reinforce this political reading of the energy transition by emphasizing that energy justice is inherently a struggle over power and distribution. Policies that neglect the socio-economic costs of decarbonization risk provoking resistance from communities dependent on fossil-fuel industries.

They frame the “just transition” as a strategy to address precisely this problem: compensating workers and regions adversely affected by the phasing out of carbon-intensive sectors. Labor justice, they argue, must therefore be central to climate governance, not peripheral. Empirical evidence supports this claim. Gaikwad et al. (2022) show that in democracies such as India and the United States, public support for ambitious climate action increases markedly when policies include explicit compensation for vulnerable groups or regions. Redistribution and recognition, key tenets of energy justice, thus become the political glue that holds climate coalitions together, converting potential “losers” into allies of the transition (or avoid them mobilizing against it).

Among the tools to promote carbon emissions reduction is the regulation of carbon markets. Here, again, studies have shown the importance of getting the politics right, in order to get emissions low. Stek, Lima-de-Oliveira, and Vasudhevan (2025), in a comparative study involving carbon markets design in the middle-income economies of Brazil, Indonesia, and Malaysia, demonstrate that the pace of such market development has depended on the emergence of pro-climate coalitions that blend external finance (e.g., the Just Energy Transition Partnership, or JETP) with domestic political support. By contrast, countries lacking such regulatory frameworks, like Malaysia, face stalled reforms due to opposition from incumbents.

At the international level, this logic extends to climate coalitions that link fairness, trade, and development, within and between developed and emerging economies. This is the spirit that backs a new proposal for consideration by the members of the Conference of Parties 30 (COP 30) gathered in Brazil and authored by the Global Climate Policy Project at Harvard and MIT. In “Building a Climate Coalition: Aligning Carbon Pricing, Trade, and Development” (GCPP Working Group on Climate Coalitions 2025), a group of leading social scientists propose a multilateral arrangement that coordinates carbon pricing (a stick) across major economies (including a global Carbon Border Adjustment Mechanism, CBAM) while channeling part of the revenues toward developing countries through climate finance, technology transfer, and preferential trade access. The latter is a carrot to bring developing countries into such a carbon coalition and speed up decarbonization in the emerging world. Such mechanisms recognize that equitable burden-sharing is essential for sustaining global cooperation.

Taken together, these insights underscore that effective climate governance is not just about reducing emissions; it is about constructing economic and political systems that make the transition both just and popular. The energy justice perspective helps policymakers (in national and international forums) to incorporate elements to make climate action also politically resilient.

4. Energy Justice in Malaysia

Using the three core perspectives of energy justice, one can critically assess energy policy documents and proposals by asking a number of specific questions: 1) Who pays and benefit from proposed policies (distributive justice)?; 2) Who decides and how are decisions reached and revised (procedural justice)?; 3) Whose realities are acknowledged and historical injustices addressed (recognitional justice)? Malaysia is a particularly useful case to analyze, as it faces a carbon lock-in challenge (Schuch et al. 2024) and hosts extensive economic activities related to O&G extraction (Kasahara, Botelho, and Lima-De-Oliveira 2025).

To further illustrate the usefulness of applying an energy justice lens to the energy transition in Malaysia, three key documents from the Malaysian Federal government are evaluated: The National Energy Policy (2022-2040, launched in 2022), the National Energy Transition Roadmap (NETR, launched in 2023), and Malaysia's Long-Term Low Emissions Development Strategy (LT-LEDS), a report circulated in early 2025. This analysis is not exhaustive and does not cover other relevant publications or state-level initiatives from Sarawak and Sabah. Its aim is to demonstrate how the energy justice framework can inform both the policymaking process and the evaluation of energy transition strategies.

It is not hard to find energy justice concerns in these documents, either explicitly or implicitly, with or without the use of AI tools. However, distributive justice is framed primarily through the lenses of affordability, access, and regional balance. The National Energy Policy, for instance, explicitly links energy policy to the national goal of equitable development, promising to ensure a fair distribution of energy-related costs and benefits across income groups, regions, and ethnicities. The NETR extends this logic by highlighting the creation of green jobs and the need to protect the low- and middle-income households from the potential burden of tariff reforms, while the LT-LEDS emphasizes affordability as a guiding principle of decarbonization. To quote from the NETR:

“While the energy transition will foster job creation particularly in new green growth areas, other non-green areas may experience a decline. This further underscores the importance of greening the economy in a way that is as fair and inclusive as possible for everyone, especially for communities affected by energy transition.” (Ministry of Economy of Malaysia 2023, p. 26).

Yet, these provisions remain predominantly economic in orientation and stop short of instituting mechanisms to compensate those directly or indirectly disadvantaged by the energy transition.

Procedural justice, the second dimension, is constrained by Malaysia's centralized governance model. While all documents were written after stakeholder engagements and consultations, which includes the author of this brief, who joined different sessions as a subject matter expert, these consultations are largely advisory rather than participatory.

They normally involve a large consultancy firm which prepares a study, which is then scrutinized by senior decision makers in the process of policy formulation.

Decision-making power remains concentrated within federal agencies, and implementation of flagship projects under the NETR, such as large-scale solar, hydrogen, and industrial decarbonization clusters, relies heavily on federal–corporate partnerships (and government-linked companies, such as TNB). This leaves limited space for state governments, local communities and Small and Medium Enterprises (SMEs), or labor unions (a relevant constituency to ILO, a flagbearer of the just transition perspective) to influence the design or prioritization of initiatives that will directly affect their territories and livelihoods. A more inclusive procedural justice perspective would ensure meaningful consultation, which could include public hearings, with open and transparent records of inputs (e.g. recorded meetings).

While there are elements of recognitional justice to be found in the documents, it is far from being salient. There is limited recognition of the particular experiences of Orang Asli communities, women-headed households (more broadly, the gender dimensions of energy poverty), persons with disabilities, or informal-sector workers whose energy vulnerabilities can differ qualitatively. Those policy documents (or a national data repository) could disaggregate energy poverty data to inform the public of potential impacts of the transition. With more open data and free, prior, and informed consent, energy entrepreneurs may consider integrating cultural and social values into project design as well as prioritizing local communities during all stages of project development. This omission matters: without explicit recognition of who is at risk and why, policies intended to be inclusive may inadvertently reproduce existing inequities, especially in regions already underserved by infrastructure or historically marginalized within the federation. A more systematic integration of energy justice principles has the potential to significantly enhance both the process and the outcomes of Malaysia’s energy transition, moving from a technocratic exercise into a socially anchored process. Which, as reviewed above and implicitly recognized by the NETR on the above quote, is critical to ensure political support for the transition.

Many of these concerns and considerations have been highlighted by a joint work of the national oil company Petronas with the consultancy PwC, which in November of 2023 published “Laying the Foundation for a Just Energy Transition.” The initiative conducted sessions with 140 participants from over 40 organizations (including the author of this brief)(PWC & Petronas 2023). This shows the growing interest that the energy justice perspective is having in the country and the efforts to disseminate and incorporate such principles, even if they are not fully captured, yet, in the actual policymaking process.

Conclusion

The philosopher John Rawls, one of the most influential of the 20th century, provides a powerful thought experiment called the veil of ignorance. In it, individuals are asked to design the principles of a just society without knowing their own position within it – whether they would be rich or poor, healthy or disabled, part of a majority or minority group. Rational actors, uncertain of their future status, would be expected to choose rules that protect the most vulnerable and ensure equitable opportunities for all. Drawing from this principle, Sovacool (2013) writes:

When applied to the realm of energy justice, this means thinking how we or a society would design a global energy system if we didn't know where we would fit within it – if we couldn't guarantee we would be the ones driving SUVs in the United States, or the ones collecting firewood in the rain in Sub-Saharan Africa. Rawls would argue that, under such a social contract, we would want an energy system fair and open to all, one that gives everybody an equal shot of receiving the energy services they need.” (Sovacool 2013, p. 137).

What is true for an across-countries comparison, also resonates with within-countries disparities. A justice dimension to energy would advocate rules that are fair and applicable equally to inhabitants of Bukit Damansara in Kuala Lumpur or a remote village in Sabah. And fair in this context goes beyond material redistribution, but also incorporates voice in decision-making and recognition of historical injustices.

The integration of energy justice into policymaking is not only a normative call, but also a pragmatic one. As reviewed here, and part of a large body of literature on climate politics, fair distribution of the costs and benefits of decarbonization, inclusive participation in decision-making, and recognition of social and historical differences can enhance the legitimacy and durability of climate policies. This is particularly relevant in times of changes of political leadership and pressures to backtrack on earlier commitments.

A transition that is perceived as unjust, whether because it deepens regional inequalities, marginalizes affected workers, or disregards affected voices, risks eroding public trust and political support, both of which are indispensable for sustaining long-term climate action. Conversely, an energy transition guided by justice principles has the potential to transform decarbonization into a transformative exercise that not only can remodel a country's economy (e.g. generate green jobs) as well as strengthens its participatory mechanisms and sense of belonging.

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