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To cite this article: Oyeniya Abe & Victor Azubike (2024) (Re)examining the intersection between energy justice and energy transition in Africa, Journal of Energy & Natural Resources Law, 42:3, 279-299, DOI: [10.1080/02646811.2024.2356988](https://doi.org/10.1080/02646811.2024.2356988)

To link to this article: <https://doi.org/10.1080/02646811.2024.2356988>



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Published online: 18 Jul 2024.



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(Re)examining the intersection between energy justice and energy transition in Africa

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(Received 5 March 2024; final version received 30 May 2024)

Today, energy justice and energy transition are converging, particularly in Africa. This intersection is crucial for achieving sustainable development and addressing the challenges of climate change. The context of energy transitions in Africa necessitates a thorough examination of the continent's unique challenges and opportunities. Mainstreaming the justice dimension and adopting comprehensive policy frameworks that balance developmental concerns and market creation are crucial for achieving a clean energy transition and sustainable development in Africa. Despite the increasing research on energy justice, the emphasis has been predominantly on energy transitions in the Global North, leaving Global South contexts, including Africa, underrepresented. However, considering that fast-growing regions in Africa, South Asia, and Southeast Asia are expected to contribute significantly to future energy demand, this article investigates how energy justice principles can be used to guide and shape the energy transition in Africa. The goal is to ensure that the transition is inclusive, sustainable and beneficial for all segments of society. It highlights the need for comprehensive policy frameworks that balance developmental concerns and market creation.

Keywords: Energy Justice; Energy Transition; Africa; Sustainable Development; Just Transition; Energy Law

1. Introduction

Conceptually, energy justice requires the fair distribution of the advantages, benefits and responsibilities of energy production and usage among different populations.¹ Energy justice and energy transition are critical in powering industries, improving healthcare and education outcomes, enhancing food security, and driving innovation and economic diversification.² It is imperative to guarantee a just transition to avoid leaving vulnerable

- 1 Energy justice has emerged as a new crosscutting social science research agenda which seeks to apply justice principles to energy policy, energy production and systems, energy consumption, energy activism, energy security and climate change. See further Kirsten Jenkins and others, 'Energy Justice: A Conceptual Review' (2016) 11 *Energy Research & Social Science* 174; Kim Talus and Pami Aalto, 'Energy Transitions and the Law' in Tina Hunter and others (eds), *Routledge Handbook of Energy Law* (Routledge 2021) 549
- 2 Stephen Williams and Andreean Doyon, 'Justice in Energy Transitions' (2019) 31 *Environmental Innovation and Societal Transitions* 144; see also Aileen McHarg, 'Energy Justice: Understanding the "Ethical Turn" in Energy Law and Policy', in Iñigo del Guayo and others (eds) *Energy Justice and Energy Law* (Oxford University Press 2020) 15–30

communities behind in the shift towards a sustainable energy future.³ Mainstreaming the justice dimension in policy frameworks is essential for achieving a just energy transition in Africa. Thus, addressing the unique challenges faced by the continent requires policymakers to develop comprehensive policy frameworks that balance developmental concerns and market creation. To achieve this, the importance of considering energy transition through a justice lens to promote universal, safe, affordable and secure energy access, contributing to improved well-being and sustainable development, is crucial.⁴

The concept of energy transition has sparked passionate debates in recent times, given its socio-economic, policy, and practical importance to the African continent. Energy transition entails the shift from low-efficient energy sources towards more efficient energy sources.⁵ This involves a move away from carbon-intensive energy sources to low-carbon energy sources like wind and solar energy.⁶ Further, the energy transition discussion represents a positive step for achieving sustainable development, as the transition to renewable energy sources,⁷ thus ensuring that regions like Africa will continue to develop, and meet their social and economic goals on the back of their natural resources, albeit not the carbon-intensive ones, which the continent possesses in abundance, but on renewable energy sources like wind and solar.⁸

Access to reliable, affordable and sustainable energy is fundamental to achieving socio-economic development and environmental sustainability. In Africa, where energy poverty remains a significant challenge, ensuring universal access to energy has emerged as a critical priority.⁹ As the global community acknowledges the urgency of transitioning towards cleaner energy systems to mitigate climate change, the concept of a 'just transition' has gained prominence.¹⁰ This transition aims to

3 The concept of a just transition originated in the labour movement and gained traction within the environmental and social justice movements. It recognises that the shift to a low-carbon economy must be accompanied by measures to protect workers' rights, support affected communities, and address socio-economic inequalities. See UNDP, 'What Is Just Transition? And Why Is It Important?' (*UNDP Climate Promise*, 29 February 2024) <<https://climatepromise.undp.org/news-and-stories/what-just-transition-and-why-it-important>> accessed 6 April 2024

4 For instance, stakeholders such as local households, communities, utilities and governments. Integrating justice aspects into policy frameworks can facilitate a transition that encourages sustainable development while tackling historical injustices and disparities. See Rebecca Grant and others, 'An Ecohealth Approach to Energy Justice: Evidence from Malawi's Energy Transition from Biomass to Electrification' (2021) 75 *Energy Research & Social Science* 101875

5 Energy transition has been defined as a fundamental change in a country's energy mix, such as an increase in the proportion of renewable energy and the phasing out of fossil fuels, which would lead to energy efficiency. See Bassam Fattouh, Rahmatallah Poudineh and Rob West, 'The Rise of Renewables and Energy Transition: What Adaptation Strategy Exists for Oil Companies and Oil-Exporting Countries?' (2019) 3 *Energy Transitions* 45; see also IRENA I, 'Global Energy Transition a Roadmap to 2050' (*IRENA*, 2018) <www.irena.org/publications/2018/Apr/Global-Energy-Transition-A-Roadmap-to-2050> accessed 28 April 2024

6 Yu Yang and others, 'Energy Transition: Connotations, Mechanisms and Effects' (2024) 52 *Energy Strategy Reviews* 101320

7 Barry Solomon and Karthik Krishna, 'The Coming Sustainable Energy Transition: History, Strategies, and Outlook' (2011) 39 *Energy Policy* 7422

8 See Dolf Gielen and others, 'The Role of Renewable Energy in the Global Energy Transformation' (2019) 24 *Energy Strategy Reviews* 38

9 Mikel González-Eguino, 'Energy Poverty: An Overview' (2015) 47 *Renewable and Sustainable Energy Reviews* 377

10 See Climate Justice Alliance, 'Just Transition: A Framework for Change' (*Climate Justice Alliance*, 15 March 2023) <<https://climatejusticealliance.org/just-transition>> accessed 4 March 2024

ensure that the shift to cleaner energy sources is equitable and inclusive, and benefits all segments of society, especially the most vulnerable.

In energy transition, a just approach seeks to ensure that the benefits of renewable energy deployment are equitably distributed, and the burdens are minimised, particularly for marginalised groups. In Africa, where numerous economies heavily depend on extractive industries such as oil, gas and coal, the imperative of a just transition is clear. The shift towards renewable energy sources must not only reduce greenhouse gas emissions but also promote social equity, foster inclusive development, and create new opportunities for sustainable growth. This requires careful planning, stakeholder engagement and targeted interventions to address the unique challenges and opportunities facing African countries.

This article unpacks, clarifies and addresses the underlying causes of energy injustices, and considers the political economy and power dynamics surrounding socio-technical energy transitions in Africa. It methodically investigates the social, economic and environmental dimensions of just transition in Africa. By assessing where injustices occur, identifying who bears the burden of these injustices and determining potential remedies, energy justice can be incorporated into energy systems to advance fairness. Part 2 discusses the intersections of energy justice and energy transition in Africa, expounding on the theories of energy justice and just transition regarding how African countries can meet their energy transition goals. Part 3 examines various energy transition efforts in Africa and highlights the challenges to just transition in Africa. Part 4 provides inexhaustive building blocks for safeguarding just transition in Africa and highlights the need for comprehensive policy frameworks that balance developmental concerns and market creation. Part 5 concludes the article.

2. Contextualising energy justice and energy transition in Africa

Energy justice in Africa is a critical concept with profound implications for sustainable development. The concept encompasses principles of fairness, equity and ethical considerations in energy production, distribution and access.¹¹ In the African context, achieving energy justice is essential for addressing the challenges of energy marginalisation and exclusion, especially in the deployment of renewable energy resources.¹² This is crucial for ensuring that all segments of the population have access to affordable and sustainable energy sources, which are fundamental for sustainable development. While the concept is global, the arguments for energy justice in Africa might shift from a globalisation standpoint to a 'continentalisation' one, as part of the sustainable socio-economic growth towards industrialisation of the continent.¹³

11 Benyoh Nsafon and others, 'The Justice and Policy Implications of Clean Energy Transition in Africa' (2023) 11 *Front. Environ. Sci.* <www.frontiersin.org/articles/10.3389/fenvs.2023.1089391/full> accessed 17 March 2024; Sanya Carley and David Konisky, 'The Justice and Equity Implications of the Clean Energy Transition' (2020) 5(8) *Nature Energy* 569; Jenkins and others, 'Energy Justice: A Conceptual Review' (n 1) 174

12 Yekeen Sanusi and Andreas Spahn, 'Exploring Marginalization and Exclusion in Renewable Energy Development in Africa: A Perspective from Western Individualism and African Ubuntu Philosophy' in G. Bombaerts and others (eds) *Energy Justice Across Borders* (Springer 2020) 273–296

13 Jeremy Rifkin, *The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World* (Palgrave Macmillan 2013) 161–176

Energy justice has emerged as a new crosscutting social science research agenda which seeks to apply justice principles to energy policy, energy production and systems, energy consumption, energy activism, energy security and climate change.¹⁴ Further, in Africa, the concept denotes the fair distribution of the benefits and responsibility of energy consumption and production in the various communities.¹⁵ The theory of energy justice with key links to Africa meeting its energy transition goals must be done in international law related to sustainable energy, achieving Sustainable Development Goals (SDGs) 7 and 13, and the present attempts to adopt the right to energy within the continent.¹⁶ Mechanisms, structures, implementation of SDGs 7 and 13, and energy rights are some strengthening measures maintained in this paper.¹⁷ Some of the central components of energy justice link to international law, SDGs 7 and 13, human rights, and supervisory and compliance mechanisms which could be argued to be the result of the need to accept ethical and moral thinking within the global energy sector given the present push for net-zero and decarbonisation of the global energy systems¹⁸ – particularly as part of the argument for sustainable development from natural resources, which include fossil fuel energy sources, usually located within the developing regions of the world, which includes Africa. Accordingly, equity and justice are inserted into the discussion of sustainable energy development in Africa and are crucial for the success of energy transition within the region, as there must be a long-term societal buy-in.¹⁹ Furthermore, energy justice and just transition are crucial frameworks for ensuring that the shift towards sustainable energy systems is not only environmentally sound but also socially equitable. There must be a long-term acceptance of energy transition in Africa, especially the decarbonisation of the energy sector, for a successful sustainable outcome.²⁰ Herein lies the need to incorporate energy justice into the framework of Africa's energy system, as this is the centre of an energy transition venture within the continent.²¹

Guayo and colleagues articulated distributive justice, procedural or participation justice, restorative or reparation justice, and recognition justice as key broad themes of energy justice. They acknowledged the diverse and complex nature of energy justice issues and the concept.²² This complexity is inherent to energy transition, as the concept means different lines of action to different regions around the world.

14 Jenkins and others, 'Energy Justice: A Conceptual Review' (n 1); Talus and Aalto (n 1) 549–551

15 RE Shelton and H Eakin, 'Who's Fighting for Justice?: Advocacy in Energy Justice and Just Transition Scholarship' (2022) 17 Environmental Research Letters 063006; see also E Zaidan and I Antoine Ibrahim, 'Achieving Energy Justice: The Role of Supervisory and Compliance Mechanisms in Global Frameworks and the International Community' (2024) 52 Energy Strategy Reviews 101335

16 Zaidan and Antoine Ibrahim (n 15)

17 SDG 7 'Goal 7 | Department of Economic and Social Affairs' (*United Nations*) <<https://sdgs.un.org/goals/goal7>> accessed 9 May 2024; see also SDG 13 'Goal 13 | Department of Economic and Social Affairs' (*United Nations*) <<https://sdgs.un.org/goals/goal13>> accessed 9 May 2024

18 RJ Heffron and D McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 Applied Energy 435; see also M Martiskainen and others, 'New Dimensions of Vulnerability to Energy and Transport Poverty' (2021) 5 Joule 3

19 Darren McCauley and others, 'Energy Justice and Policy Change: An Historical Political Analysis of the German Nuclear Phase-Out' (2018) 228 Applied Energy 317. See Raphael Heffron, *Achieving a Just Transition to a Low-Carbon Economy* (Palgrave Macmillan 2021) 9.

20 Africa must buy into the energy transition plans and strategies – *ibid.*

21 See Darren McCauley, *Energy Justice Re-Balancing the Trilemma of Security, Poverty and Climate Change* (Palgrave Macmillan 2018) 1–4; see also Raphael Heffron, 'Applying Energy Justice into the Energy Transition' (2022) 156 Renewable and Sustainable Energy Reviews 111936

22 *Ibid.*

The themes of energy justice and the driving mechanisms of energy transition make up an important part of realistic and theoretical research on both concepts.²³ Arguably, energy transition is a very socialised process which is influenced by various factors with a different impact on the process.²⁴ For instance, Yang and others included social-cultural influences in their analysis of energy transition, which also through their broader lens of analysis highlighted the technology innovation, policy arrangements and market dynamics as some driving mechanisms of energy transition.²⁵

Conceptually, distributive justice focuses on the fair distribution of the benefits and burdens of energy systems across different social groups. In most African countries, this entails ensuring that marginalised people, often located in rural or semi-urban areas, have access to clean and affordable energy sources. This might involve prioritising decentralised renewable energy solutions like solar microgrids or small-scale hydroelectric projects. For instance, energy poverty disproportionately affects the world's poorest populations due to the unequal distribution of energy resources and burdens. Many communities hosting extractive and energy industries face severe deficits in education, healthcare and infrastructure. According to the United Nations Environment Programme (UNEP) 2011 Ogoni report, the clean-up of oil and gas operations by international oil companies could require up to 30 years, with progress currently lacking.²⁶ Moreover, endemic corruption and illicit financial flows prevent local communities from reaping the benefits of these resources. Reports indicate that the amount lost to illicit financial flows in African countries surpasses the gross domestic product (GDP) of several countries in a year.²⁷

Procedural justice revolves around the fairness and inclusivity of decision-making processes concerning energy policy and infrastructure development. African nations must guarantee that every stakeholder, from local communities and civil society organisations to indigenous groups, participates in both the planning and execution phases of energy projects. This approach can mitigate the marginalisation of certain groups and foster transparency and accountability in decision-making procedures. Certainly, the exclusion of individuals, particularly women, from decision-making processes exacerbates gender disparities with unintended repercussions. An International Labour Organization (ILO) report underscores the importance of ensuring that the pursuit of energy transition does not compromise the right to decent work. For countries like Nigeria, where approximately 80 per cent of government revenue stems from oil and gas, transitioning is crucial. However, it raises the critical question of how to ensure a just transition, preventing the sudden unemployment of the hundreds of thousands reliant on

23 Yang and others (n 6)

24 *Ibid*; see also Phil Johnstone and others, 'Waves of Disruption in Clean Energy Transitions: Sociotechnical Dimensions of System Disruption in Germany and the United Kingdom' (2020) 59 *Energy Research & Social Science* 101287

25 *Ibid*; see also Kirsten Jenkins, Darren McCauley and Alister Forman, 'Energy Justice: A Policy Approach' (2017) 105 *Energy Policy* 631

26 UNEP, 'Environmental Assessment of Ogoniland Report' (UNEP, 2011) <www.unep.org/topics/disasters-and-conflicts/country-presence/nigeria/environmental-assessment-ogoniland-report> accessed 12 May 2024

27 AFDB, 'New Report Reveals African Countries Have Generated €1.7 Billion in Additional Revenues from Tackling Tax Evasion and Illicit Financial Flows' <<https://afdb.africa-newsroom.com/press/media/new-report-reveals-african-countries-have-generated-euro17-billion-in-additional-revenues-from-tackling-tax-evasion-and-illicit-financial-flows?lang=en&display=all>> accessed 12 May 2024

income from these resources. In African nations with substantial fossil fuel sectors, like Angola, addressing this entails instituting initiatives such as retraining programmes, financial assistance, or job placement aid for workers in the oil and gas industry as they transition to new roles in renewable energy or alternative sectors. When analysing the economic effects of energy transition, there is a clear mismatch in the distribution of employment opportunities.²⁸ This means that losing fossil fuel jobs does not result in the generation of new green jobs in the same area.²⁹ Consequently, the support for the energy transition in the areas losing ‘green jobs’ and losing their livelihood because of the transition will most likely see less societal support for the energy transition.³⁰ Further, from an energy justice viewpoint, critical steps and measures must be in place, such as training, employment opportunities, or compensation, which should be taken into account in energy transition planning.³¹ Here also lies the vital role of policymakers in Africa, and the need for a strong understanding of the complexity of the social and economic impact of energy transition.³² Policy and regulation are some of the key issues for the energy transition. Arguably, the most important driver of the present energy transition is government policies and regulations, which will drive this energy transition.³³

Within the energy justice discourse, social justice plays a crucial role. The marginalisation and exclusion of vulnerable groups, such as women, youth, and indigenous communities, along with uncompensated land seizures and the absence of gender-aware transition policies, pose significant justice concerns. Women are underrepresented on corporate boards, prompting a consideration of whether we prioritise equity or equality. It is essential to make a concerted and transparent effort to dismantle barriers to energy justice, recognising that achieving energy justice hinges on gender justice. The absence of gender-aware transition policies results in energy access initiatives inadvertently favouring men in the formal sector, despite women often being primary users of wood for cooking in local communities. Without integrating gender assessments or vulnerability assessments based on gender into efforts to address energy transition, the benefits of the transition are likely to disproportionately accrue to the same demographic.

African nations, still striving to develop basic infrastructure like railway stations and schools in some communities, face the dilemma of whether to retain their natural resources or decarbonise. This poses a fundamental question of justice: how can we

28 See Anjali Sharma and Rangan Banerjee, ‘Framework to Analyze the Spatial Distribution of the Labor Impacts of Clean Energy Transitions’ (2021) 150 *Energy Policy* 112158; see also Ryan Thombs, ‘The Paradoxical Relationship between Renewable Energy and Economic Growth: A Cross-National Panel Study, 1990–2013’ (2017) 23 *Journal of World-Systems Research* 540; Shahriyar Nasirov and others, ‘Expansion of Renewable Energy in Chile: Analysis of the Effects on Employment’ (2021) 226 *Energy* 120410

29 *Ibid*

30 Yaqian Mu and others, ‘Employment Impacts of Renewable Energy Policies in China: A Decomposition Analysis Based on a CGE Modeling Framework’ (2018) 210 *Applied Energy* 256

31 Yang and others (n 6); see also Williams and Doyon (n 2)

32 Vanesa Castán Broto and others, ‘Energy Justice and Sustainability Transitions in Mozambique’ (2018) 228 *Applied Energy* 645; see also McCauley (n 19) 317; Julius McGee and Patrick Greiner, ‘Renewable Energy Injustice: The Socio-Environmental Implications of Renewable Energy Consumption’ (2019) 56 *Energy Research & Social Science* 101214

33 James Henderson and Anupama Sen, ‘The Energy Transition: Key Challenges for Incumbent and New Players in the Global Energy System’ (The Oxford Institute for Energy Studies, 2021) <www.oxfordenergy.org/wpcms/wp-content/uploads/2021/09/Energy-Transition-Key-challenges-for-incumbent-players-in-the-global-energy-system-ET01.pdf> accessed 23 April 2024

ensure these communities escape poverty if they do not utilise their resources? There are also broader concerns regarding the cosmopolitan implications; while aiming to achieve SDGs like eradicating poverty and promoting decent work, countries must find alternative ways to stimulate local economies if they are advised to keep their resources untapped for decarbonisation purposes. Simply advocating for decarbonisation in nations that have not heavily contributed to carbon emissions could be seen as unjust. Conceivably, there is a cosmopolitan injustice when policies fail to consider the specific vulnerabilities and requirements of developing countries. Additionally, these challenges are exacerbated by ongoing debates and geopolitical considerations surrounding transition. The imperative is to achieve a safe and orderly transition that does not exacerbate existing conditions in developing nations. It is evident that issues of climate and energy justice are intertwined with broader social justice concerns within our societies, emphasising the inseparability of energy and climate justice from gender justice.

The implications of energy justice in Africa extend beyond the energy sector. They relate closely to broader issues of sustainable development, such as economic justice, governance, and environmental protection. Achieving energy justice in Africa requires addressing the structural challenges and power imbalances that hinder equitable access to energy resources.³⁴

In sustainable development, energy justice also intertwines with issues of poverty, inequality and human capital development. Poverty and inequality are pervasive in Africa and pose significant constraints to economic and health gains, highlighting the need for energy justice to address these challenges. Addressing energy marginalisation, promoting renewable energy access and ensuring equitable energy transition are essential for achieving sustainable development. Thus, the governance of energy transitions in Africa plays a pivotal role in shaping the outcomes of sustainable development.

Scholars have examined the plural perspectives involved in the governance of energy transitions. They highlight the complexity and diverse stakeholder involvement in shaping the transition process,³⁵ underscoring the need for a comprehensive approach to energy transition that addresses the specific needs of diverse communities and regions within Africa. For example, the Paris Agreement³⁶ and the Glasgow Climate Pact,³⁷ bolstered by the first global stocktake in the 2023 United Nations Climate Change Conference (COP28)³⁸ to reduce carbon emissions below 2°C, continues to be the foundation for energy transition and achieving the net-zero global targets.³⁹

³⁴ Hanri Mostert and Heleen Niekerk, 'Disadvantage, Fairness, and Power Crises in Africa: A Focused Look at Energy Justice' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford, 2018) 45–70

³⁵ Philipp Späth and others, 'The Governance of Energy Transitions in Africa: A Sketch of Plural Perspectives' (2022) 12 *Energy, Sustainability and Society* 51

³⁶ See United Nations Framework Convention on Climate Change (UNFCCC), 'Paris Agreement' (United Nations 2015)

³⁷ See UNFCCC, 'Glasgow Climate Pact' <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26>> accessed 6 December 2023

³⁸ See UNFCCC, 'UN Climate Change Conference – United Arab Emirates' <<https://unfccc.int/cop28>> accessed 28 February 2024

³⁹ A net-zero target means a company or entity is pledging to reduce emissions as close to zero as possible and then using carbon offsets or sequestration technologies to net out the remainder of their emissions – in other words, working to become carbon neutral. See Esther Whieldon and Jennifer Laidlaw, 'Path to Net Zero Riddled with Potential Pitfalls' (*S&P Global*, 2021) <www.spglobal.com/esg/insights/path-to-net-zero-riddled-with-potential-pitfalls> accessed 22 April 2024; see also IEA, 'Net Zero by 2050: A

Accordingly, these plans and goals have all been at the centre of the global debate on energy transition, which is surrounded by uncertainties.⁴⁰ Endeavours towards a better and cleaner Earth through the environment–energy link need to be made, and for Africa, this has to be achieved without jeopardising the continent’s socio-economic development.⁴¹ Certain key deliberations must occur for Africa to take steps towards energy transition, and this therefore brings energy justice considerations into policy discourses on the continent.

Understanding that existential energy transition debates are driven by technology, economics, environmental considerations, convenience and ease, while realistic energy transition has politics, policy and activism as the driving forces, makes it vital for the concept of energy justice to be incorporated into today’s discussion.⁴² Energy transition entails and means different lines of action for Africa and a separate agenda for Europe or North America.⁴³ The planned transition from fossil fuels to renewables is not as undemanding as it has been made out to be.⁴⁴ African countries are still discovering petroleum resources within their territories.⁴⁵ Ordinarily, the goal would be to use these natural resources to achieve socio-economic development and meet the continent’s energy needs. The debate about a ‘just transition’⁴⁶ further raises the challenge of separating energy from economic growth, especially in Africa, where the continent’s population is booming and its energy demands are extensive.⁴⁷ Thus, despite the need and urgency to shift to renewable energies, there are concerns about how the structure and execution of these initiatives, particularly the acquisition of crucial transition minerals, might heighten human rights violations linked to the extractive industry.⁴⁸ Insufficient involvement of stakeholders in the planning, formulation and execution of transition initiatives pertinent to them raises substantial human rights apprehensions and has

Roadmap for the Global Energy Sector’ (IEA, 2021) <www.iea.org/reports/net-zero-by-2050> accessed 4 May 2024

40 Ulf Moslener, ‘The Deep Uncertainties That Are Stalling Energy Transition’ (*E&T*, 2022) <<https://eandt.theiet.org/content/articles/2022/05/the-deep-uncertainties-that-are-stalling-energy-transition>> accessed 3 April 2024

41 Victor Azubike and Marai Gathiesh, ‘The Intricate Goal of Energy Security and Energy Transition: Considerations for Libya’ (2024) 187 *Energy Policy* 114005

42 Daniel Yergin, *The New Map: Energy, Climate, And the Clash of Nations* (Penguin Press 2020) 378

43 See Majid Jafar, ‘How Do You Achieve an Equitable Just Energy Transition That Includes Developing Economies?’ (*World Economic Forum*, 2021) <www.weforum.org/agenda/2021/09/equitable-energy-transition-including-developing-economies> accessed 31 December 2023

44 Roula Khalaf and Tom Wilson, ‘Energy Shock Shows Need to Rethink Green Transition, Aramco Chief Says’ (*Financial Times*, 2022) <www.ft.com/content/f8cc1070-abbe-4489-9c4d-1569eb836195> accessed 29 April 2024

45 South Africa, Namibia and Ghana are some of the countries that have announced discoveries in oil and gas. See Charné Hollands, ‘Five Major Oil Discoveries in Africa in 2021’ (*Energy Capital & Power*, 17 September 2021) <<https://energycapitalpower.com/five-major-oil-discoveries-in-africa-in-2021>> accessed 12 May 2024

46 See Climate Justice Alliance, ‘Just Transition: A Framework for Change’ (*Climate Justice Alliance*, 15 March 2023) <<https://climatejusticealliance.org/just-transition>> accessed 4 April 2023; see OECD, ‘Just Transition – OECD’ (OECD, 2017) <www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf> accessed 4 April 2024

47 David Pilling, ‘Can Africa Grow Without Fossil Fuels?’ (*Financial Times*, 2022) <www.ft.com/content/1e8c12fe-4823-41a1-8069-b6150876427d> accessed 2 April 2024

48 D Olawuyi, ‘The Energy Transition Shouldn’t Shortchange People’ (*International Policy Digest*, 2024) <<https://intpolicydigest.org/author/damilola-olawuyi>> accessed 12 May 2024

already resulted in various cases of social unrest.⁴⁹ As clean energy policies broaden their scope and goals, the global demand for transition minerals, such as copper, lithium, nickel, manganese, cobalt, graphite and rare earth metals, surges.⁵⁰ Such a substantial increase in demand could exacerbate human rights violations worldwide, particularly in Africa, where significant reservoirs of these materials are located.⁵¹

Scholars have emphasised the justice and policy implications of clean energy transition in Africa, accentuating the need for a just and equitable energy transition that enhances inclusion, reduces inequality, and empowers people through modern energy access.⁵² For example, the ecohealth approach to energy justice in Malawi's energy transition from biomass to electrification underscores the necessity of considering energy transition through a justice lens.⁵³ The advancement of an energy justice perspective on 'tomorrow's oil' through green hydrogen investments emphasises the significance of exploring energy justice for understanding change in fast-growing regions such as Sub-Saharan Africa, highlighting the need for equitable and sustainable energy partnerships to address issues of energy access and justice.⁵⁴

To mitigate climate change and prevent the negative impacts of the forecasted climate change on the environment, efforts must be made to advance energy transition plans in Africa.⁵⁵ Consequently, from the intensive use of fossil fuels, which leads to adverse health and environmental issues, achieving a low-carbon energy transition can reduce the impacts on the environment.⁵⁶ The push for renewable energy has its drawbacks, however. Some studies maintain that the installation of renewable energy infrastructure will pose a threat to the environment.⁵⁷ This means that the energy

49 United Nations, 'Report of the Working Group on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises: Extractive Sector, Just Transition and Human Rights', A/78/155 (11 July 2023), <www.ohchr.org/en/documents/thematic-reports/a78155-extractive-sector-just-transition-and-human-rights> accessed 20 April 2024

50 Kirsten Hund and others, 'Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition' <<https://pubdocs.worldbank.org/en/961711588875536384/pdf/Minerals-for-Climates-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>> accessed 12 April 2024

51 Amnesty International, 'Powering Change or Business as Usual', 11 September 2023, Index Number: AFR 62/7009/2023 <www.amnesty.org/en/documents/AFR62/7009/2023/en> accessed 11 April 2024

52 Nsafon (n 11)

53 Grant and others (n 4)

54 Max Lacey-Barnacle, R Robison and C Foulds, 'Energy Justice in the Developing World: A Review of Theoretical Frameworks, Key Research Themes and Policy Implications' (2020) 55 *Energy for Sustainable Development* 122; Anteneh G Dagnachew and others, 'The Opportunities, Challenges and Potentials for Hydrogen in Africa' (December 2023) <www.pbl.nl/sites/default/files/downloads/pbl-2023-the-opportunities-challenges-and-potentials-for-hydrogen-in-africa_5269.pdf> accessed 12 March 2024

55 Festus Adedoyin and others, 'Generation of Energy and Environmental-Economic Growth Consequences: Is There Any Difference Across Transition Economies?' (2020) 6 *Energy Reports* 1418; see also Maria Aperi and others, 'An Energy Justice Index for the Energy Transition in the Global South' (2024) 192 *Renewable and Sustainable Energy Reviews* 114238

56 See Irfan Khan and others, 'The Dynamic Links among Energy Transitions, Energy Consumption, and Sustainable Economic Growth: A Novel Framework for IEA Countries' (2021) 222 *Energy* 119935

57 For instance, the construction of renewable energy will change land use, surface functions, and local ecosystems, also threatening large scavengers and unique and rare soaring birds. See Gavin Pereira and others, 'Energy Transitions, Air Quality and Health' (2021) 16 *Environmental Research Letters* 020202; see also Richard York and Julius McGee, 'Does Renewable Energy Development Decouple Economic Growth from CO₂ Emissions?' (2017) 3 *Socius: Sociological Research for a Dynamic World* 237802311668909; Muhammad Nazir and others, 'Impacts of Renewable Energy Atlas: Reaping the Benefits of Renewables and Biodiversity Threats' (2020) 45 *International Journal of Hydrogen Energy* 22113; Éléonore Lèbre and others, 'The Social and Environmental Complexities of Extracting Energy Transition Metals' (2020) 11 *Nature Communications*

transition requires a careful strategic plan, to ensure that the threats to the environment brought about by the mining of critical minerals for the renewable energy transition are not overlooked by policymakers.⁵⁸ There are possibilities to achieve the energy transition while avoiding negative impacts on the environment, especially if policies are adopted and the installation of renewable energy infrastructures is carefully and properly planned and managed.⁵⁹

3. Energy transition efforts in Africa

The concept of a just transition originated in the labour movement and acquired traction within the environmental and social justice movements.⁶⁰ It recognises that the shift to a low-carbon economy must be accompanied by measures to protect workers' rights, support affected communities, and address socio-economic inequalities.⁶¹ Likewise, in addressing the questions of just transition, the economic impact of the transition must be central to the discourse, knowing that jobs will be lost to the transition.⁶²

Africa faces various energy-related challenges, including low electricity access, reliance on traditional fuels, and the need for clean and affordable energy sources. Energy justice provides a framework for addressing these challenges and ensuring an inclusive and equitable energy transition.⁶³ Studies have investigated how the geographical dispersion of energy resources and supply chains can lead to vulnerabilities in meeting energy demand.⁶⁴ Therefore, justice inquiries ought to encompass the cultural, social and economic underpinnings of disparities. As a result, matters of social injustice, exclusion and discrimination should be considered.⁶⁵

Addressing energy provision and access challenges is a key aspect of achieving energy justice in Africa. Various countries in Sub-Saharan Africa have low levels of electricity access, which hinders socio-economic development and exacerbates inequalities. Yet, in numerous parts of Africa, we see the complex failure of law to ensure a just, equitable distribution and use of energy resources. Some countries lack comprehensive energy policies and regulatory frameworks that prioritise universal access to modern energy services. Inadequate governance and corruption further exacerbate these issues, hindering the effective implementation of energy access initiatives. The cost of extending

⁵⁸ Laura Sonter, Marie Dade, James Watson, and Rick Valenta, 'Renewable Energy Production Will Exacerbate Mining Threats to Biodiversity' (2020) 11 *Nature Communications* 4823 <www.nature.com/articles/s41467-020-17928-5> accessed 8 May 2024; Alexandros Gasparatos and others, 'Renewable Energy and Biodiversity: Implications for Transitioning to a Green Economy' (2017) 70 *Renewable and Sustainable Energy Reviews* 161; David Serrano, 'Renewables in Spain Threaten Biodiversity' (2020) 370 *Science* 1282

⁵⁹ See Sebastian Dunnett and others, 'Predicted Wind and Solar Energy Expansion Has Minimal Overlap with Multiple Conservation Priorities across Global Regions' (2022) 119(6) *Proceedings of the National Academy of Sciences* e2104764119

⁶⁰ See UNDP (n 3) and Williams and Doyon (n 2); see also RJ Heffron, 'What Is the "Just Transition"?' [2021] *Achieving a Just Transition to a Low-Carbon Economy* 9

⁶¹ *Ibid*

⁶² P Newell and A Simms, 'How Did We Do That? Histories and Political Economies of Rapid and Just Transitions' (2020) 26 *New Political Economy* 907

⁶³ Mostert and Niekerk (n 34); Darren McCauley, Rebecca Grant and Evance Mwachungu, 'Achieving Energy Justice in Malawi: From Key Challenges to Policy Recommendations' (2022) 170(28) *Climatic Change* <<https://link.springer.com/article/10.1007/s10584-022-03314-1#citeas>> accessed 10 May 2024

⁶⁴ Stefan Bouzarovski and Neil Simcock, 'Spatializing Energy Justice' (2017) 107 *Energy Policy* 640

⁶⁵ Nancy Fraser, *Justice Interruptus: Critical Reflections on the 'Postsocialist' Condition* (Routledge 1997)

grid infrastructure to these areas is often prohibitive, leading to continued reliance on traditional and inefficient energy sources. The reliance on traditional fuels, such as wood fuel, for cooking, heating and lighting also leads to indoor air pollution and deforestation, with adverse health and environmental consequences.⁶⁶ Promoting clean and affordable energy sources can improve energy access and contribute to energy justice by reducing health risks, protecting the environment, and promoting sustainable development.⁶⁷ For example, Uganda has implemented supportive policies and regulations to encourage investment in renewable energy projects. The Renewable Energy Feed-in Tariff (REFiT) policy, for example, guarantees long-term contracts and fixed tariffs for renewable energy producers, providing them with a stable investment environment.⁶⁸ Furthermore, Kenya has been working to increase access to electricity in rural areas through initiatives like the Last Mile Connectivity Project. This project aims to extend the national electricity grid to remote areas and provide off-grid solutions like solar power to communities without access to the grid.⁶⁹

3.1. *Challenges and barriers to energy transition efforts in Africa*

One of the key challenges is energy poverty and the unmet energy demand for economic growth and transformation in Africa.⁷⁰ This poses a significant barrier to achieving a just energy transition, as it impacts the equitable distribution of clean and sustainable energy resources. Vulnerable communities, such as rural populations and informal workers, lack access to alternative livelihood opportunities or social safety nets during the transition process. Sometimes, the shift towards renewable energy sources such as solar and wind power can lead to initial increases in electricity prices. This can unfairly impact low-income households, who allocate a larger proportion of their income to energy bills. As a result, energy transition policies may unintentionally deepen energy poverty and widen socio-economic disparities.⁷¹

Second, the political economy of enacting and realising a just transition presents immense difficulties, characterised by complex political trade-offs.⁷² The contested terrain of energy politics in African countries sheds light on the difficulty and complexity of organising just transitions in extremely unequal societies.⁷³ Many African economies heavily depend on fossil fuels, such as oil, coal, and gas, for revenue and energy generation.⁷⁴ Transitioning away from these industries presents challenges because of vested

66 Raphael Heffron and others, 'A Treatise for Energy Law' (2018) 11(1) *Journal of World Energy Law & Business*, 34

67 Marcus Power and others, 'The Political Economy of Energy Transitions in Mozambique and South Africa: The Role of the Rising Powers' (2016) 17 *Energy Research and Social Science*, 10

68 IEA 50, 'Feed-in Tariff for Renewable Energy – Policies' (*IEA*, 2001) <www.iea.org/policies/4090-feed-in-tariff-for-renewable-energy> accessed 12 May 2024

69 Global Infrastructure Hub, 'Last Mile Connectivity Program' <<https://inclusiveinfra.github.org/case-studies/last-mile-connectivity-program-kenya>> accessed 12 May 2024

70 Nsafon and others (n 11)

71 Benjamin Sovacool and Michael Dworkin, 'Energy Justice: Conceptual Insights and Practical Applications' (2015) 142 *Applied Energy* 435

72 Peter Newell and Dustin Mulvaney, 'The Political Economy of the 'Just Transition'' (2013) 179(2) *The Geographical Journal*, 132

73 Lucy Baker, Peter Newell and Jon Phillips, 'The Political Economy of Energy Transitions: The Case of South Africa' (2014) 19(6) *New Political Economy* 791

74 South Africa, Nigeria, the DRC and Ghana are a few examples.

interests, economic dependencies, and potential job losses in the extractive sector. For example, the limited options for addressing the decarbonisation challenge in South Africa highlight the complexities and constraints associated with transitioning to low-carbon energy systems.⁷⁵ South Africa's economy heavily relies on the production and consumption of fossil fuels, notably coal, which serves as a primary source of energy, economic prosperity, and employment. The potential transition from a fossil fuel-centric economic model to one grounded in sustainability presents multifaceted challenges, encompassing financial, carbon-related, and implications for international financial flows. The hurdles associated with diminishing reliance on fossil fuels, including financial constraints, implementing low-carbon energy alternatives, and the impact on employment within the extractive sector, represent significant barriers to the adoption of more sustainable energy sources across Africa.⁷⁶ This highlights the need to navigate political challenges, budget allocation, resource mobilisation, and power dynamics to ensure that energy transitions are fair and inclusive.

Third, African countries lack the institutional capacity and regulatory frameworks needed to plan and implement a just transition successfully. Weak governance, corruption and limited enforcement mechanisms hinder efforts to develop and enforce policies that prioritise sustainability and social equity. Addressing these deficits requires significant investment and coordinated planning at national and regional levels.⁷⁷ This highlights the significance of addressing policy gaps and investing in infrastructure to back sustainable practices in the energy sector.

Instances where energy transition exacerbates inequalities highlight the complex interplay between energy policies, social dynamics and economic disparities. For example, scholars have noted that energy transitions may exacerbate inequalities amidst national decarbonisation strategies.⁷⁸ Thus, energy transition initiatives have the potential to inadvertently contribute to environmental injustices and unequal exposure to pollution, worsening existing disparities. The energy–poverty nexus perpetuates and exacerbates energy insecurities, leading to structural injustice and unequal opportunities, creating a cycle of value destruction and inequality.⁷⁹ This emphasises the interconnected nature of energy poverty and broader social and economic inequalities, underscoring the potential for energy transition efforts to unknowingly perpetuate and exacerbate prevailing inequalities.

75 David Walwyn, 'Turning Points for Sustainability Transitions: Institutional Destabilization, Public Finance and the Techno-Economic Dynamics of Decarbonization in South Africa (2020) 70 *Energy Research and Social Science* 101784

76 Siphesihle Nene and Henrietta Nagy, 'Legal Regulations and Policy Barriers to Development of Renewable Energy Sources in South Africa' (2021) 20th International Scientific Conference Engineering for Rural Development Proceedings <www.tf.lbtu.lv/conference/proceedings2021/Papers/TF049.pdf> accessed 12 January 2024

77 William Avis, *Drivers, Barriers, and Opportunities of e-waste Management in Africa* (2021) K4D Helpdesk Report No. 1074. Institute of Development Studies <<https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/17152>> accessed 12 January 2024

78 Teagan Goforth and Destenie Nock, 'Inequality in Energy Transitions: Air Pollution Disparities amidst National Decarbonization Strategies (2022) <www.researchsquare.com/article/rs-1421061/v1> accessed 12 January 2024

79 Saurabh Biswas and others, 'Ending the Energy–Poverty Nexus: An Ethical Imperative for Just Transitions' (2022) 28(4) *Science and Engineering Ethics* <<https://link.springer.com/article/10.1007/s11948-022-00383-4#citeas>> accessed 12 January 2024

An unjust transition is recognised to worsen inequalities, which could cause public resistance and negative human impacts.⁸⁰ Hence, considering the social and distributive impacts of energy transition initiatives is crucial to prevent the worsening of these pre-existing inequalities and injustices. For instance, in South Africa, the transition to renewable energy sources has been noted to generate inequalities related to uneven spatial harms, environmental impacts, and the unequal capacity to mitigate and adapt, highlighting the potential for unintended consequences that exacerbate existing disparities.⁸¹

African countries may face pressure from international markets, investors and development agencies to prioritise economic growth and competitiveness over social and environmental concerns. Balancing these competing interests while pursuing a just transition can be challenging. Addressing these challenges requires a comprehensive approach that integrates social, economic and environmental considerations into policy-making and implementation processes. This includes investing in education and skills development, promoting renewable energy and sustainable agriculture, strengthening social safety nets, and fostering inclusive decision-making processes that engage affected communities and stakeholders. International cooperation and support are also essential to facilitate technology transfer, capacity building and financial help for African countries undergoing the transition to a more sustainable and equitable future.

4. Building blocks guaranteeing energy transition in Africa

Energy justice and a just transition in Africa are crucial because of the continent's diverse energy landscape, marked by disparities in energy access, distribution and affordability. Implications of achieving energy justice extend beyond addressing energy poverty; they intersect with broader sustainable development goals. An inexhaustive consideration of building blocks promoting energy justice in Africa follows.

4.1. Addressing energy poverty

As a question of distributive justice, Africa confronts a pronounced energy poverty crisis, defined as the absence of access to or the financial incapacity to procure contemporary energy services and commodities.⁸² Consequently, the discourse surrounding the SDGs, particularly SDG 7 (access to affordable, reliable, sustainable and modern energy for all), accentuates the collective ambition to realise SDG 7 by the year 2030. Energy systems are intertwined with social, economic and ecological systems, and these systems are not isolated.⁸³ Concerns are growing about the rise of energy poverty during this period of transitioning to clean energy.⁸⁴ There is a general

⁸⁰ Dante Dalabajan and others, *Towards a Just Energy Transition: Implications for Communities in Lower- and Middle-Income Countries* <<https://oxfamilibrary.openrepository.com/handle/10546/621455>> accessed 13 January 2024

⁸¹ Iain Todd and Darren McCauley, 'An Inter-disciplinary Approach to the Energy Transition in South Africa' (2021) 2(1) *Discover Sustainability* <<https://link.springer.com/article/10.1007/s43621-021-00043-w#citeas>> accessed 13 April 2024

⁸² Bouzarovski S, Fuller S and Reames TG, *Handbook on Energy Justice* (Edward Elgar Publishing 2023)

⁸³ Yang and others (n 6); see also IRENA, 'A New World: The Geopolitics of the Energy Transformation' (IRENA, 2019) <www.irena.org/-/media/files/irena/agency/publication/2019/jan/global_commission_-_geopolitics_new_world_2019.pdf> accessed 8 April 2024

⁸⁴ *Ibid*; see also González -Eguino (n 9)

understanding that this transition will precipitate a wide range of social consequences, which will cause key modifications in sectors such as employment, public health and energy accessibility.⁸⁵ Further, as identified by various studies, this energy transition is expected to improve energy independence at the local and national levels and achieve energy supply diversification, which will then lead to the elimination of energy poverty.⁸⁶ Yet local progress towards the attainment of access to affordable, reliable and sustainable modern energy appears significantly distant. In Africa, millions of people lack access to modern energy services and instead depend on traditional biomass for cooking and heating. Energy justice entails providing these marginalised populations with access to electricity and clean cooking solutions, improving their quality of life, health outcomes and economic opportunities. Undeniably, the institutional frameworks that generate and perpetuate enduring inequalities based on factors such as race, class, gender and culture form the basis of disparities, necessitating a discourse or advocacy for energy justice.⁸⁷

The tangible risks posed by climate change include the potential for severe disruptions to global economies, exacerbation of poverty levels and perpetuation of energy injustice. The direct consequences of climate change are already being felt in regions such as Chad⁸⁸ and other low-lying coastal areas in Africa.⁸⁹ Individuals are being displaced from their ancestral homes and lands because of climate-induced phenomena such as floods, droughts, cyclones and an increase in extreme weather events.⁹⁰

High energy costs can exacerbate poverty and limit access to essential services. By deploying decentralised renewable energy solutions like solar panels and mini-grids, more people can access electricity, enhancing their quality of life and socio-economic prospects. For example, M-KOPA Solar is a Kenya-based company that provides solar energy solutions to off-grid households.⁹¹ They offer affordable solar home systems, making clean energy accessible to low-income households. M-KOPA has helped

85 Shinichiro Okushima, 'Energy Poor Need More Energy, But Do They Need More Carbon? Evaluation of People's Basic Carbon Needs' (2021) 187 *Ecological Economics* 107081; see also Uyi Ehigiamusoe and Eyup Dogan, 'The Role of Interaction Effect between Renewable Energy Consumption and Real Income in Carbon Emissions: Evidence from Low-Income Countries' (2022) 154 *Renewable and Sustainable Energy Reviews* 111883

86 See Victor Azubike, 'The Energy Transition and Energy Security Nexus: An Outlook for the United Kingdom' (2023) 41 *Journal of Energy & Natural Resources Law* 503; Annabel Yadoo and Heather Cruickshank, 'The Role for Low Carbon Electrification Technologies in Poverty Reduction and Climate Change Strategies: A Focus on Renewable Energy Mini-Grids with Case Studies in Nepal, Peru and Kenya' (2012) 42 *Energy Policy* 591; Yu Yang, 'Energy Globalization of China: Trade, Investment, and Embedded Energy Flows' (2022) 32 *Journal of Geographical Sciences* 377; Matthew Burke and Jennie Stephens, 'Political Power and Renewable Energy Futures: A Critical Review' (2018) 35 *Energy Research and Social Science* 78; Jeremy Rifkin, 'How the Third Industrial Revolution Will Create a Green Economy' (2016) 33 *New Perspectives Quarterly* 6

87 Bouzarovski S, Fuller S and Reames TG (n 82)

88 Iberdrola, 'Countries Most Affected by Climate Change' (*Iberdrola*, 22 April 2021) <www.iberdrola.com/sustainability/top-countries-most-affected-by-climate-change> accessed 12 May 2024

89 Such as Senegal, The Gambia, Sierra Leone, Nigeria, Cameroon and Gabon – see IPCC, 'The Regional Impacts of Climate Change: An Assessment of Vulnerability' (*IPCC*, 1997) <www.ipcc.ch/report/the-regional-impacts-of-climate-change-an-assessment-of-vulnerability> accessed 12 May 2024

90 J Azour and AA Selassie, 'Africa's Fragile States Are Greatest Climate Change Casualties' (*IMF*, 30 August 2023) <www.imf.org/en/Blogs/Articles/2023/08/30/africas-fragile-states-are-greatest-climate-change-casualties> accessed 12 May 2024

91 M-Kopa, 'Kopa: We Finance Progress' (*M-KOPA*, 24 November 2023) <<https://m-kopa.com>> accessed 12 May 2024

improve energy access for millions of people in East Africa, reducing reliance on polluting and expensive kerosene lamps. Their model promotes energy justice by providing affordable and sustainable energy solutions to underserved communities. Likewise, the Solar Sister project is a social enterprise operating in several African countries, including Nigeria, Uganda and Tanzania. The project empowers women entrepreneurs, known as Solar Sisters, to distribute clean energy products, such as solar lanterns and clean cookstoves, in their communities.⁹² Solar Sister promotes energy justice by providing economic opportunities to women while increasing access to clean energy solutions in rural areas. By leveraging women's networks and entrepreneurship, they contribute to poverty alleviation and sustainable development. These examples show innovative approaches to promoting energy justice in Africa, emphasising affordability, accessibility and sustainability.⁹³ They highlight the importance of empowering local communities, leveraging renewable energy technologies, and fostering partnerships between governments, businesses and civil society organisations.

4.2. *Policy frameworks*

Governments can play a pivotal role in promoting energy justice through supportive policy frameworks, regulatory mechanisms and institutional capacity building. Policies must prioritise energy access, affordability and environmental sustainability, aligning with national development agendas and international commitments such as the SDGs and the Paris Agreement. For example, in South Africa, the energy justice framework has been utilised to highlight the mismatch in policy formulation, resource distribution and spatial distribution in off-grid rural electrification policy, shedding light on injustices in the recognition of population groups' special needs.⁹⁴ In response, the government developed the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP), aimed at procuring renewable energy from independent power producers (IPPs). The programme has facilitated the development of utility-scale renewable energy projects, including wind and solar farms, and has attracted significant investments in renewable energy, creating jobs, reducing greenhouse gas emissions, and diversifying South Africa's energy mix. While the programme promotes energy justice by increasing access to clean and affordable electricity, it has the potential to stimulate economic development also.⁹⁵ Furthermore, a modelling approach has been employed to outline a pathway towards achieving 100% renewable electricity by 2050, providing in-depth insights into meeting the power sector's demand through renewable energy sources.⁹⁶ This approach serves as a successful model for promoting energy justice by emphasising the transition towards clean and sustainable energy sources in South Africa.

⁹² Solar Sister, 'Why Our Work Matters' (*Solar Sister*, 10 July 2023) <<https://solarsister.org/what-we-do/why-our-work-matters>> accessed 12 May 2024

⁹³ Sovacool and Dworkin (n 71)

⁹⁴ C Monyei, A Adewumi and K Jenkins, 'Energy (In)justice in Off-Grid Rural Electrification Policy: South Africa in Focus (2018) 44 *Energy Research & Social Science*, 152

⁹⁵ IPP Renewables, 'Independent Power Producer Procurement Programme' (*IPP Renewables*, 2024) <www.ipp-renewables.co.za> accessed 12 May 2024

⁹⁶ Ayobami Oyewo and others, 'Pathway Towards Achieving 100% Renewable Electricity by 2050 for South Africa (2019) 191 *Solar Energy*, 549

In Malawi, an ecohealth approach has been employed to facilitate the country's energy transition from biomass to electrification, emphasising the integration of environmental and health considerations into energy justice initiatives.⁹⁷ This approach has contributed to a more holistic understanding of energy justice and has guided the transition towards cleaner and sustainable energy sources. The ecohealth project has provided key insights into addressing complex issues related to energy generation and access in low-income settings, offering valuable policy recommendations to achieve energy justice in the country.⁹⁸

These models represent a positive approach to the just transition initiative. However, concerted efforts are needed to accelerate progress and ensure that no one is left behind in the transition to a sustainable energy future. Governments, international organisations, private sector entities and civil society must collaborate to develop sustainable and inclusive energy solutions that prioritise the needs of marginalised populations. According to a global study by the Sabin Centre, only a minority of African countries have enacted legislation specifically addressing climate change.⁹⁹ The absence of cohesive plans for energy justice or strategies to combat energy poverty, coupled with inadequate measurement of energy access, presents formidable challenges hindering progress. This lack of foundational frameworks makes it challenging to effectively translate overarching international principles into actionable local initiatives.

4.3. *Human rights protection*

When considering the intersection of energy justice and just transition, it becomes apparent that it involves an inherent blending of climate law and human rights law. Yet energy institutions frequently lack expertise in human rights matters. When queried about human rights concerns, officials redirect individuals to the Human Rights Commission, absolving themselves of responsibility by stating that human rights issues fall outside their purview. This scenario underscores the need for enhanced collaboration and awareness between energy and human rights sectors, particularly when energy institutions are involved in approving projects that may impact human rights. By considering justice principles, policymakers can mitigate these risks by ensuring that energy projects adhere to environmental standards, respect indigenous rights, and minimise negative impacts on ecosystems and natural resources.

4.4. *Empowering local communities and social inclusion*

Several energy projects in Africa have been developed without sufficient consultation or participation from affected communities, leading to conflicts and injustices.¹⁰⁰ By adopting a justice lens, decision makers can assess how energy policies and projects affect

⁹⁷ Grant and others (n 4)

⁹⁸ Darren McCauley and others, 'Energy Justice in the Transition to Low Carbon Energy Systems: Exploring Key Themes in Interdisciplinary Research' (2019) 233–234 *Applied Energy*, 916

⁹⁹ Climate Change Laws of the World <<https://climate.law.columbia.edu/content/climate-change-laws-world>> accessed 29 April 2024

¹⁰⁰ For example, the Lake Turkana Wind Project in Kenya. See further Thoko Kaime and Godswill Agbaitoro, 'An Energy Justice Approach to Resolving the Conflict between the Development of Energy Access Projects and Human Rights Risks and Violations in Africa: Can a Balance be Struck?' (2022) 3(1) *Global Energy Law and Sustainability* 39

different social groups, ensuring that benefits are distributed equitably and that vulnerable populations are not disproportionately burdened by the transition. Ensuring an inclusive energy transition involves engaging local communities, empowering marginalised groups, and addressing social disparities. By prioritising energy access for all and incorporating principles of energy justice, the transition can contribute to social equity, cohesion and empowerment.

There is an unequal distribution of both energy opportunities and burdens, evident in communities where minerals are located. These communities often experience severe deficits in education and healthcare infrastructure. Accessibility to these areas is hindered by inadequate transportation infrastructure, despite their being the primary sources of energy resources. For instance, a United Nations report highlights that the remediation of environmental impacts resulting from oil and gas operations by multinational corporations in Nigeria could require up to three decades.¹⁰¹ The cleanup efforts are progressing at a slow pace, compounded by endemic corruption and illicit financial activities.¹⁰² Local communities living in resource-rich areas are unable to reap the benefits of their natural resources.

Energy projects should be developed and implemented in consultation with local communities, respecting their rights, cultures and traditional knowledge. Energy justice emphasises community participation, empowerment and ownership. Thus, examining the energy transition through a justice lens involves engaging with local communities; respecting their rights, traditional knowledge and priorities; and empowering them to participate fully in decision-making processes. This participatory approach fosters ownership, transparency and accountability. For instance, the development of renewable energy infrastructure, such as solar farms and wind turbines, may encroach upon indigenous lands or traditional territories. Without proper consultation and respect for land rights, energy transition projects can contribute to the marginalisation of indigenous communities and exacerbate existing social inequalities.¹⁰³ In addressing these challenges, policymakers must adopt a holistic approach that prioritises equity, inclusivity and social justice in energy transition efforts. This entails ensuring accessibility and participation for all stakeholders, particularly those most vulnerable to the impacts of climate change and energy transition. A realistic, holistic approach is the design and implementation of social impact assessments (SIAs) and community engagement.

SIAs are critical tools for evaluating the potential social consequences of energy initiatives, ensuring that the transition process is inclusive, equitable and responsive to the needs of diverse communities. SIAs help to identify, predict and manage the social effects of energy transition projects, policies and programmes, contributing to the development of sustainable and responsible energy strategies. An inclusive policy design with a focus on SIAs and community engagement must integrate principles of justice, equity and participation to ensure that the transition benefits all segments of society.¹⁰⁴ Community engagement is crucial for understanding local needs, preferences and concerns.¹⁰⁵ It is also critical in energy transition, underscoring the need for participatory approaches

¹⁰¹ UNEP (n 26)

¹⁰² *Ibid*

¹⁰³ Jenkins and others, 'Energy Justice: A Conceptual Review' (n 1) 174

¹⁰⁴ Monyei, Adewumi and Jenkins (n 94)

¹⁰⁵ Oyenyi Abe, 'Between Control and Confrontation: The Pitfalls and Potentials of Corporate–Community Participatory Development in Africa's Energy and Extractive Industries' (2022) 11 *The Extractive Industries and Society* 101095

that involve local communities in decision-making processes.¹⁰⁶ This aligns with the importance of community engagement in understanding local perspectives and ensuring that energy transition initiatives respond to community needs and aspirations.¹⁰⁷

SIAAs help in identifying potential risks and benefits associated with energy transition initiatives.¹⁰⁸ They play a crucial role in assessing the potential social impacts of transitioning to renewable energy sources, expanding energy access and implementing energy infrastructure projects. These assessments help in understanding the potential effects of energy transition initiatives on local communities, including aspects such as livelihoods, health,¹⁰⁹ cultural heritage and social cohesion.¹¹⁰ By incorporating SIAAs into energy transition policies, decision makers can ensure that the transition process is inclusive, responsive to community needs and aligned with broader social development goals. Consequently, key components of an inclusive policy design must integrate the following pragmatic and human rights-based approach.

First, states and policymakers must conduct thorough SIAAs to identify and assess the potential social impacts of energy transition projects on local communities, including economic, cultural, health and environmental aspects. In doing this, there must be a realistic engagement with local communities throughout the assessment process to gather their perspectives, concerns and aspirations. The process must also utilise participatory methods, such as community meetings, *imbizo*,¹¹¹ focus groups and surveys to ensure that the SIA process is inclusive and transparent.

Second, policy design must guarantee equitable access to clean and affordable energy services for all members of society, particularly marginalised and underserved communities. The design of any related programme must prioritise the needs of vulnerable populations, including women, youth, indigenous peoples and people with disabilities. Implementation mechanisms must be geared towards distributing the benefits of energy transition projects equitably, such as revenue-sharing agreements, local employment opportunities and community development funds.

Third, community engagement and empowerment are the hallmarks of the energy transition process. Thus, policy design must foster meaningful engagement with local communities throughout the energy transition process, from project planning and implementation to monitoring and evaluation. States must create platforms for dialogue and collaboration between project developers, government agencies, civil society organisations and community representatives, and empower communities to participate in decision-making processes, including the design, implementation and governance of energy projects that affect their lives and livelihoods.

Fourth, states must provide capacity-building initiatives and training programmes to enhance the knowledge, skills and capabilities of local communities in areas such as renewable energy technologies, energy efficiency and sustainable resource

¹⁰⁶ *Ibid*

¹⁰⁷ *Ibid*

¹⁰⁸ James Meadowcroft, 'What about the Politics? Sustainable Development, Transition Management, and Long-Term Energy Transitions' (2009) 42(4) *Policy Sciences*, 323

¹⁰⁹ Nsafon and others (n 11)

¹¹⁰ Silver Sillak and Madis Vasser, 'How Might We Co-design Energy Transition Policy in Old Industrial Regions?' (2022) 33(2) *Environmental Policy and Governance*, 139

¹¹¹ *Imbizo* is a Xhosa word meaning 'a gathering to share knowledge'

management. Local content requirements must be integrated into local laws and policies.¹¹² States, civil societies and human rights advocates must promote awareness and education campaigns to ensure that community members understand the potential benefits and risks of energy transition projects, as well as their rights and responsibilities.

Fifth, transparent and accessible grievance mechanisms must exist to address community concerns, resolve disputes and mitigate conflicts related to energy transition projects. These operational-level grievance mechanisms must align with local culture, be responsive, and provide timely feedback to affected communities.¹¹³

4.5. *Technological innovation and capacity building*

Embracing renewable energy technologies fosters innovation and technological advancement, positioning African countries at the forefront of the global clean energy transition. This facilitates knowledge transfer, skill development, capacity building, and empowering local communities and institutions to drive sustainable development. The absence of local and indigenous content poses a significant challenge to achieving a successful energy transition. Despite efforts to promote transition, the persistence of reliance on imported technologies is observed, with many of these technologies being unable to be efficiently utilised by local communities. It is important to go beyond mere technology transfer to include considerations of technology absorption. This entails ensuring that green technologies introduced to Africa are accessible within local contexts. For instance, technologies imported from Germany to Nigeria often necessitate annual visits by German engineers for machine operation, maintenance and servicing. The deficiency of local content within technology transfer mechanisms represents a substantial gap, arguing for technology absorption as a viable solution.

4.6. *International collaboration and support*

Africa needs development, and a just transition to renewable energy sources should focus on leveraging partnerships, resources and expertise from diverse stakeholders to ensure that the transition is effective, equitable and sustainable. International collaboration and support can contribute to capacity building, knowledge exchange and resource mobilisation, enhancing the effectiveness and inclusivity of energy transition initiatives.¹¹⁴ Thus, African states must foster collaboration with international organisations such as the United Nations, World Bank and African Development Bank to leverage technical expertise, financial resources and best practices. States must engage in multilateral initiatives and platforms focused on energy transition, such as the International Renewable Energy Agency (IRENA), Clean Energy Ministerial, Sustainable Energy for All (SEforALL) and

¹¹² Oyeniyi Abe, 'Local Content Requirements in Nigeria's Extractive Sector and the Implications for Sustainable Development' (2022) 66(1) *Journal of African Law* 73; see also Oyeniyi Abe and Ada Ordor, 'Local Content Requirements and Social Inclusion in Global Energy Markets: Towards Business and Human Rights Content in Africa' in Damilola Olawuyi (ed) *Local Content, Sustainable Development and Treaty Implementation in Global Energy Markets* (Cambridge University Press 2021) 392–412

¹¹³ Oyeniyi Abe, *Implementing Business and Human Rights Norms in Africa: Law and Policy Interventions* (Routledge 2022)

¹¹⁴ Newell and Mulvaney (n 72)

the African Renewable Energy Initiative (AREI) to share knowledge, experiences and lessons learned.

Regional partnerships and bilateral agreements play a central role in project development and just transition. States should enhance partnerships with bilateral donors, development agencies and foreign governments to access funding, technology transfer and capacity-building support for energy transition projects. This collaboration will facilitate regional alliances and cooperation frameworks to promote cross-border energy trade, infrastructure development and policy harmonisation. States should encourage collaboration with multinational corporations, renewable energy developers and technology providers to mobilise capital, expertise and innovation for scaling up renewable energy deployment and infrastructure development.

The private sector's involvement is significant. Concerted efforts must be geared towards encouraging private sector investment and participation in energy transition projects through public-private partnerships (PPPs), investment incentives, and regulatory frameworks that promote transparency, accountability and fair competition.

Innovative policy design must facilitate knowledge exchange programmes, study tours and technical assistance initiatives to build the capacity of African policymakers, regulators and practitioners in areas such as renewable energy planning, project finance and regulatory frameworks. States should establish joint research and development partnerships with academic institutions, research organisations and think tanks to generate evidence-based insights, data and solutions to address energy transition challenges.

States have an obligation to strengthen national and regional financial institutions to mobilise domestic and international capital for renewable energy deployment, energy efficiency initiatives and sustainable infrastructure development. Advocacy for increased climate finance and investment in clean energy projects, utilising mechanisms like the Green Climate Fund, Climate Investment Funds and carbon markets, needs to be intensified.

5. Conclusion

This article explored the nexus between energy justice and the energy transition in Africa, emphasising its significance in achieving sustainable development and addressing climate change challenges. It underscored the concept of a 'just transition', which prioritises human well-being and sustainability during the shift to cleaner energy sources. It accentuates the need for comprehensive policy frameworks that balance developmental concerns and market creation to achieve a clean energy transition in Africa.

Many African countries are undeniably developing policies and regulatory frameworks to support the transition to renewable energy and promote energy justice. This includes initiatives to promote off-grid electrification, incentivise renewable energy investments, and strengthen governance and accountability in the energy sector. However, challenges remain in translating these policies into effective implementation and ensuring equitable distribution of benefits.

We argued that meaningful engagement with local communities is essential for promoting energy justice in Africa's energy transition. Empowering communities to participate in decision-making processes, benefit-sharing mechanisms and renewable energy projects can enhance social inclusion, ownership and sustainability. Infrastructure development can significantly improve energy access, reliability and efficiency, especially in remote and underserved areas.

Ensuring equitable access to clean and affordable energy services for all segments of society is a central tenet of energy justice. Addressing energy poverty, reducing inequalities in energy access and promoting social inclusion are key priorities for Africa's energy transition. Innovative financing mechanisms, subsidy schemes and targeted interventions can help address affordability challenges and improve energy access for marginalised populations. Although Africa's energy transition offers significant opportunities for advancing energy justice, realising these prospects will necessitate collaborative efforts from governments, civil society, the private sector and the international community. By prioritising equity, inclusion and sustainability in energy policies and investments, Africa can achieve a just and equitable energy transition that benefits all its citizens.

This article unpacks, clarifies and addresses the fundamental drivers of energy inequalities while examining the political economy and power dynamics surrounding socio-technical energy transitions in Africa. It systematically explores the social, economic and environmental dimensions of equitable transitions in African contexts. By assessing areas of injustice, identifying the parties disproportionately affected and exploring potential solutions, integrating energy justice into energy frameworks can advance fairness.

The intersections between energy justice and energy transition in Africa must replicate an inclusive and equitable shift towards sustainable energy sources. Mainstreaming the justice dimension in policy frameworks, addressing energy provision and access challenges, and promoting renewable energy policies are key strategies for realising energy justice in the African context. However, energy justice and the transition to renewable energy in Africa present significant challenges and opportunities. By considering the unique socio-economic and environmental contexts of African countries, we can develop comprehensive and context-specific strategies for an inclusive and just energy transition in Africa.

Acknowledgments

The authors wish to thank the anonymous reviewer for the insightful comments on the earlier drafts. The usual disclaimers apply.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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