

Realizing the United Nations Sustainable Development Goals 7 and 13 in sub-Saharan Africa by 2030: synergizing energy and climate justice perspectives

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ABSTRACT

This article discusses how energy policy measures for realizing the United Nations Sustainable Development Goals (SDGs) 7 and 13 in sub-Saharan Africa (SSA) could be framed towards achieving energy justice by 2030. Both goals highlight interdependent and conflicting interactions that policymakers should be aware of whilst working to realize them. This position is quite challenging for developing countries that seek to simultaneously resolve the rising inequality of access to modern and affordable energy systems as stipulated in the SDG 7, whilst at the same time working to meet their international obligations towards the attainment of SDG 13. This article seeks to resolve this conflict by proposing some viable measures for a synergy between SDGs 7 and 13. It further examines the paradoxical situation faced by countries in the SSA region and argues for a contextualization of the two goals within the energy justice framework. The proposed approach entails a systematic transition from fossil fuels to low-carbon through socio-economic policies that take into account social injustices and further incorporate sustainable actions such as developing renewable energy technologies, diversification of energy options, energy efficiency, and regional alignments and/or cooperation. Overall, the measures outlined in this article aim to help the SSA region achieve energy justice towards 2030.

1. INTRODUCTION

Achieving the United Nations Sustainable Development Goals (SDGs) 7 and 13 by 2030 requires an understanding of the trade-offs and synergies between sustainable transitions and challenges to energy access. This approach is important for countries that have the most significant gaps in electricity access rates, particularly in sub-Saharan Africa (SSA)¹ while at the same time tackling the impact of climate change. The use of energy for lighting, cooling, cooking, transportation and industrial activities is crucial for economic development. Therefore, access to affordable energy is strategic to economic growth and development. Conversely, the lack of energy

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1 Vanesa Castan Broto and others, 'Energy Justice and Sustainability Transitions in Mozambique' (2018) 228 *Applied Energy* 645.

access and frequent electricity shortages experienced in SSA countries are impediments to economic growth and development.

According to the International Energy Agency (IEA), the lack of energy access is the most pressing obstacle to economic growth, and has remained a developmental challenge in the SSA region.² This often translates into human, economic and environmental problems which are evident in terms of the rising health and educational challenges that mainly affect women and young girls in the region. Thus, providing access to modern energy services would eliminate poverty, as the time spent fetching firewood and on similar other tasks by women and young girls prevent them from accessing the already scarce opportunities of employment and education. Therefore, ensuring access to affordable, reliable, sustainable and modern energy services as a means to achieve energy justice towards 2030 is imperative to reducing existing socio-economic inequalities in the SSA region.

Interestingly, SSA countries have a responsibility to pursue their energy access goal in line with international obligations towards reducing climate change. Particularly, in the face of the current Covid-19 pandemic, we have witnessed the consequences of sustained fossil fuels development in the form of climate change impacts that are somewhat distributed unevenly between countries in the Global North and Global South. The reality is that vulnerable countries in the SSA region experience long-term effects of climate change such as flooding, droughts and significant variations in agricultural production. This is in addition to the existing injustice of the lack of access to affordable, clean and modern energy services and other socio-economic infrastructures.

While the use of fossil fuels for energy generation would seem to be a viable resource to address the energy access challenge in the SSA region, it undoubtedly contributes to greenhouse gas (GHG) emissions and is seen as incompatible with the Paris Agreement of 2015. Although the SSA region is believed to be responsible for a minimal proportion of the total GHGs, countries in this region are expected to adopt policies that articulate clear national climate change response strategies while also finding ways to address the challenge of poor energy access. It is envisaged that such policies will aim to improve adaptive capability and resilience to climate change by pursuing a low-carbon growth path. However, given the socio-economic constraints in the SSA region, the question of which path to take between prioritizing climate action or continued development of fossil fuels to tackle the injustice of the lack of energy access is of utmost concern for policymakers in the region. This presents a conflict between the need to generate energy for the growing population in SSA that currently do not have adequate access to affordable modern energy and the need to address the impact of climate change. In addition, SSA countries would need to pay attention to social justice and human right aspect across the energy life-cycle to be able to not only meet the growing energy demand but also tackle climate change in a just manner.

The above-mentioned issues remain a challenge for developing countries, especially as individual countries are expected to ensure that the realization of SDG 7 is made compatible with SDG 13. This contradiction brings to the fore the point of interactions of the SDGs particularly as it relates to energy and climate justice. Energy scholars argue that the attainment of both goals should be approached through an understanding of the trade-offs and synergies from a development perspective in the SSA region.³ We argue here that the overall approach to attaining the goals should focus on achieving energy justice towards 2030 in the region as it will be seen to be addressing the conflict arising from both goals.

The energy justice concept provides a framework for different actions to be applied throughout the system in order to deliver just energy systems.⁴ This conception of energy justice includes but not limited to how its

2 International Energy Agency, *Boosting the Power Sector in sub-Saharan Africa: China's Involvement* (International Energy Agency Partner Countries Series, 2016) <<https://doi.org/10.1787/9789264262706-en>> accessed 19 September 2021.

3 Anteneh G Dagnachew and others, 'Trade-offs and Synergies between Universal Electricity Access and Climate Change Mitigation in Sub-Saharan Africa' (2018) 114 *Energy Policy* 355.

4 Rappael J Heffron and Darren McCauley, 'The Concept of Energy Justice Across the Disciplines' (2017) 105 *Energy policy* 658.

application and promotion can enable the growth of an industry—in this case energy and, more importantly, how it contributes to increased energy security and national economic growth.⁵ In practice, the actions taken towards achieving justice in the industry are centred around different dimensions of energy justice that include distributive, procedural, recognition, restorative and cosmopolitan justice. In this article, the authors focus on the distributive and procedural justice dimensions. The goal is to underscore the importance of the concept in energy policies and regulations that take into account areas where injustices emerge, the persons affected and what processes exist for remediation in terms of transiting to cleaner energy sources in the SSA region by 2030.

Undoubtedly, there is a need to consider viable approaches towards the attainment of SDGs 7 and 13 from a comprehensive social justice dimension. The authors argue that to attain the two goals simultaneously in SSA by 2030, there is a need to deploy balanced and pragmatic approaches to the challenges of energy access and climate change through the energy justice framework that is best suited for countries in the region. These would include but are not limited to, the use of renewables and interventions that maximize and foster energy efficiency measures. Additionally, States in the region will have to leverage regional strengths and potentials and have all voices think, plan and implement diversified energy options.

We begin the discussion with a brief examination of energy access and climate change challenges faced by countries in the SSA region. This is followed by a section that explores how the energy justice framework can be situated in the context of countries in SSA. Thereafter, we consider some practical strategies that could be used to simultaneously pursue the realization of the SDGs 7 and 13—ie, achieving energy and climate justice as part of the just transition framework that is best suited for countries in the region. Finally, we draw some conclusions premised on achieving energy justice towards 2030 in SSA.

2. ENERGY ACCESS AND CLIMATE CHANGE CHALLENGES IN SSA

This section briefly examines the energy access and climate change challenges faced by SSA countries. It further highlights the importance of access to sustainable energy services to economic development in the region towards meeting the energy goal of 2030 in a just manner. We note that a modern energy system in developing countries includes reliable and affordable access to electricity and clean cooking facilities.⁶ Thus, with a significant lack of energy access or frequent electricity shortages and modern energy services, there will be some notable impediments to economic growth. The number of people living in SSA without access to electricity is increasing, especially as ongoing electrification initiatives are often surpassed by rapid population growth.⁷ Moreover, it is projected that more than 50 per cent of the inhabitants in the region will still be using traditional biomass energy and be without access to modern energy services by 2030.⁸ In reality, the lack of energy access has massively impacted the region's development, resulting in social injustices.

Furthermore, because of the lack of or unreliable electricity supply, residents and businesses are constrained to use conventional biomass and fossil fuel generators as a source of energy.⁹ This results in significant adverse effects on the environment because of CO₂ emissions and portends far-reaching social and

5 Raphael Heffron and Darren McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 *Applied Energy* 435.

6 Gwénaëlle Legros and others, *The Energy Access Situation in Developing Countries: A Review Focussing on Least Developed Countries and sub-Saharan Africa* (United Nations Development Programme and World Health Organisation 2009).

7 International Energy Agency, *African Energy Outlook: World Energy Outlook Special Report* (International Energy Agency 2019) <<https://www.iea.org/reports/africa-energy-outlook-2019>> accessed 7 September 2021.

8 Gudina Terefe Tucho, 'The Impacts of Policy on Energy Justice in Developing Countries' in Gunter Bombaerts and others (eds), *Energy Justice Across Borders* (Springer 2020) 138 <https://doi.org/10.1007/978-3-030-24021-9_7> accessed 11 September 2021.

9 Jan Corfee-Morlot and others, *Financing Climate Futures Rethinking Infrastructure: Achieving Clean Energy Access in Sub-Saharan Africa* (Organisation for Economic Co-operation and Development 2019) <<https://www.oecd.org/environment/cc/climate-futures/case-study-achieving-clean-energy-access-in-sub-saharan-africa.pdf>> accessed 15 September 2021.

economic ramifications that are becoming increasingly visible. Thus, the lack of access to reliable modern energy not only inhibits socio-economic growth and sustainable development within private households and in public institutions, but also affects the ability of SSA countries to address the impact of climate change. Universal access to modern and clean energy should therefore be construed as a crucial driver of inclusive growth in SSA as it not only creates socio-economic opportunities for women, girls and children, but also helps address existing climate change concerns in the region. By deploying clean energy systems, we can spur long-term economic growth while improving the health and well-being of everyone in the region, in the process enhancing human security and strengthening the resilience of nations and communities to climate change.

Undoubtedly, the SSA region is highly vulnerable to climate change in areas such as agriculture, health, security and energy.¹⁰ In recent years, the region has experienced major climate-related incidences like the Horn of Africa Drought of 2017, tropical cyclones Kenneth and Idai and desertification in the Sahel region of West Africa.¹¹ These extreme events affect millions of people in the region because their communities are at risk and are exposed to socio-economic vulnerabilities arising from food insecurity, loss of livelihoods, flooding and environmental degradation. A sustainable energy supply must therefore, be climate-friendly and supported by adaptation practices that incorporate intersectoral linkage with other sectors such as food security and water.

We note further that like the lack of access to modern energy services, climate change events also have significant long-term ramifications for human welfare and economic growth on account of having redistributive effects on different income groups in the region.¹² Considering that achieving a significant reduction of GHG emissions is a major aspect of tackling the rising global temperatures by 2030, energy policy and regulation development must be focused on the sustainable development of energy resources to meet economic needs. There is an urgent need, therefore, to fully incorporate this aspect of the energy cycle into the development of energy policies and regulations to ensure that the harmful effects from the energy sector are accounted for while providing reliable and modern energy services to the local communities.¹³ As such, a cross-sectoral integration is essential to maximize the benefits of both SDG 7 and SDG 13. This will help close the gap towards the climate change goals and help enable a just and equitable transition to a low-carbon economy as a way to deliver energy justice towards 2030.

SSA countries require a transition towards low-carbon energy development and enhanced adaptive capacity to be more resilient to the impacts of climate change. The region needs to overcome its dependence on fossil fuels in order to achieve its energy access goals and at the same time develop energy systems that provide people with climate-neutral energy in a just and socially inclusive manner. Given the interactions between energy and climate change, there is a need for energy policies and regulations in the SSA region to focus more on the sustainable use of all energy sources and improve justice throughout the energy life-cycle.¹⁴ The energy justice framework remains a viable tool that articulates pertinent social justice issues that need to be addressed for the SSA region to achieve justice by 2030.

10 Samuel Godfrey and Farai A Tunhuma, *The Climate Crisis: Climate Change Impacts, Trends and Vulnerabilities of Children in Sub Saharan Africa* (United Nations Children's Fund Eastern and Southern Africa Regional Office 2020) <https://reliefweb.int/sites/reliefweb.int/files/resources/73800_theclimatecrisisreportesawcarsep20.pdf> accessed 4 September 2021

11 'Cyclones Idai and Kenneth' (United Nations Office for the Coordination of Humanitarian Affairs 2019) <<https://www.unocha.org/southern-and-eastern-africa-rosea/cyclones-idai-and-kenneth>> accessed 12 September 2021. See also Kumari Rigaud and others, *Groundswell: Preparing for Internal Climate Migration* (World Bank 2018) <<http://hdl.handle.net/10986/29461>> accessed on 7 September.

12 Stéphane Hallegatte Valentin Przyluski, *Policy Research Working Paper No. 5507: The Economics of Natural Disasters: Concepts and Methods* (World Bank 2010) <<https://openknowledge.worldbank.org/bitstream/handle/10986/3991/WPS5507.pdf?sequence=1&isAllowed=y>> accessed 10 September 2021.

13 Raphael J Heffron and Kim Talus 'The Evolution of Energy Law and Energy Jurisprudence: Insights for Energy Analysts and Researchers' (2016) 19 *Energy Research & Social Science* 1.

14 *ibid*.

3. ENERGY JUSTICE FRAMEWORK IN SSA

Resolving the challenges of energy access and climate change in SSA necessitates an understanding of the region's complex energy systems as well as the need for relevant laws, regulations and policies from a social justice standpoint. From the current energy landscape, it is observed that several African countries pursuing systemic energy transitions in a bid to address energy access problem or climate change concerns rely on market-based policies such as auctions or risk-mitigation mechanisms that prioritize harmonized market conditions.¹⁵ While market-based mechanisms are crucial for lowering energy prices and incentivizing investments for renewable energy development, their impact on the transition process in terms of democratic participation, accessibility and ownership, including all aspects of energy justice, must also be considered. Furthermore, the articulation of energy policies and regulations by countries in SSA often exist to address a single problem or siloed policy frameworks. This implies that they often do not address the concerns of justice holistically and fail to balance competing issues that characterize the energy trilemma.¹⁶ Against this background, we examine how far these individual policy frameworks manifest injustices and how a framework focused on energy justice can help deliver a just transition to a low-carbon economy.

It is important to note that a just energy transition strategy should necessarily consider different dimensions of justice that support state and non-state actors like development finance institutions, multinational companies (MNCs) and non-governmental organizations, along with different groups of persons in the society in the development and implementation of policies and programmes. In principle, this approach should seek to unite the justice perspectives including: (i) climate justice that concerns sharing the benefits and burdens of climate change from a human rights perspective; (ii) energy justice that refers to the application of human rights across the energy life-cycle and (iii) environmental justice that aims to treat all citizens equally and to involve them in the development, implementation and enforcement of environmental laws, regulations and policies.¹⁷ The fact that energy transition inherently involves compromises in terms of costs and benefits, as well as opportunities to participate and be heard in the process, accentuates a need for the process to be just.¹⁸ Hence, it ought to incorporate dimensions of justice central to energy and climate scholarships given the apparent linkages between the two disciplines.

The energy justice framework is an important instrument for energy systems that justly distribute both the benefits and burdens of energy services, as well as one that contributes to a more representative and inclusive energy decision making process for countries.¹⁹ As noted by Sovacool, refocusing energy discussions and invariably policies on people rather than only resources, technology, or prices highlights diversities that exist in our societies regarding energy production and consumption.²⁰ Accordingly, some energy scholars have advanced an energy justice framework that incorporates the objective of transitioning to low-carbon energy sources in terms of energy production and focusing on consumption-based concerns of achieving long-term energy efficiency in a just manner.²¹

Similar to climate change and environmental law scholarship, energy law scholars have argued for distinct guiding principles of law to shape the discussions in the energy sector. Heffron and others sought to articulate

15 Franziska Müller and others, 'Is Green a Pan-African Colour? Mapping African Renewable Energy Policies and Transitions in 34 Countries' (2020) 68 *Energy Research & Social Science*.

16 In the context of the Energy Trilemma, energy law and policy are at the centre of the triangle, with the three points representing economic (finance), political (energy security) and environmental challenges (climate change mitigation). These three issues are all attempting to sway energy law and policy in their advantage. To achieve the best possible outcome for society, effective and efficient energy legislation and policy must balance these three goals. See Raphael J Heffron and Kim Talus 'The Development of Energy Law in the 21st Century: a Paradigm Shift?' (2016) 9 *Journal of World Energy Law and Business* 1.

17 Raphael Heffron and Darren McCauley, 'What is the 'Just Transition'' (2018) 88 *Geoforum* 74.

18 Benjamin K Sovacool and others 'New Frontiers and Conceptual Frameworks for Energy Justice' (2017) 105 *Energy Policy* 677.

19 *ibid*.

20 Benjamin K Sovacool, 'What Are We Doing Here? Analyzing Fifteen Years of Energy Scholarship and Proposing a Social Science Research Agenda' (2014) 1 *Energy Research & Social Science* 1.

21 Raphael J Heffron, Darren McCauley and Benjamin K Sovacool, 'Resolving Society's Energy Trilemma through the Energy Justice Metric' (2015) 87 *Energy Policy* 168.

guiding principles for energy law which provides a guide to academics, policymakers, legislators and courts when formulating or enforcing laws, policies and judicial decisions on energy law.²² This is particularly important for developing acceptable standards for just outcomes and accountability in the energy sector. However, energy laws, policies and regulations have been framed in terms of ensuring access to affordable energy and addressing energy poverty, as well as the politics of energy infrastructures.²³ Heffron and Talus describe these earlier stages as the first to fourth stages of energy law evolution but noted that we are currently in the fifth stage which is energy justice.²⁴ As such, it is logical to argue that a just transition of energy systems requires a departure from the traditional paradigm to a new framework that advances the development of cleaner energy sources, addresses the inequitable distribution of the benefit and burden of such development and is supported by democratic and proactive decision-making procedures.²⁵

The energy justice concept is a tool for integrating various forms of justice and an analytical framework that is used to understand the social components of energy systems.²⁶ It is therefore pertinent to conceptualise SDG 7 from the viewpoint that the energy life-cycle impacts climate change, environment and the economy amongst other integrated sectors. From this perspective, the energy justice framework can assist SSA countries to simultaneously achieve the SDGs 7 and 13 by 2030 by including social justice considerations. This corresponds to three core dimensions and the eight principles derived from the energy justice concept.²⁷

As mentioned earlier, the arguments canvassed on this paper rest on the distributive and procedural justice dimensions. In terms of distributive justice, the energy transition framework advances an approach to addressing distributive injustices that explore inequalities emerging in different aspects across the energy and climate justice themes. These include considerations of risk and responsibilities regarding climate change and vulnerabilities connected to energy access and affordability.²⁸ Thus, questions of access to and affordability of cleaner energy sources are relevant considerations in this respect. Procedural justice, meanwhile, relates to the legitimate democratic processes adopted in developing policies and the extent of participation by the relevant stakeholders.²⁹ The procedural dimension of justice stresses the need for inclusion and democratic participation in the planning and decision-making process.³⁰ This implies that energy decisions associated with energy access or addressing climate change through energy transition should be inclusive of the people affected by the outcome. With regards to recognitional justice, a policy framework is assessed based on its focus on different groups, particularly vulnerable groups as it relates to their energy needs and ability to access affordable and clean energy in accordance with SDG 7. In addition to the three core dimensions of energy justice, Heffron and McCauley advance the fourth and fifth dimensions – that is the cosmopolitan justice which considers the application of energy justice within the energy system at each activity in the energy life cycle, and the restorative justice dimension that cuts across different aspects of the system and focuses on rectifying situations that cause injustices to communities or individuals in the context of the energy transition.³¹

22 Raphael J Heffron and others, 'A Treatise for Energy Law' (2018) 11(1) *Journal of World Energy Law and Business* 34, 40.

23 Sara Fuller and Darren McCauley 'Framing Energy Justice: Perspectives from Activism and Advocacy' (2016) 11 *Energy Research & Social Science* 1.

24 Heffron and Talus (n 13).

25 Gwen Ottinger, 'The Winds of Change: Environmental Justice in Energy Transitions' (2013) 22(2) *Science as Culture* 222.

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

27 Heffron and McCauley (n 4).

28 Damilola S Olawuyi, 'Climate Justice and Corporate Responsibility: Taking Human Rights Seriously in Climate Actions and Projects' (2016) 34(1) *Journal of Energy & Natural Resources Law* 27.

29 Müller and others (n 15).

30 Mary Menton and others, 'Environmental Justice and the SDGs: From Synergies to Gaps and Contradictions' (2020) 15 *Sustainability Science* 1621.

31 Heffron and McCauley (n 4).

The restorative justice dimension is a valuable concept for assessing how injustices occasioned by transition activities in the energy life-cycle can be rectified. For instance, poor decommissioning results in injustices that impact the environment, public health and wealth distribution.³² This may include compensation schemes for individuals and communities that have been negatively affected by the transition.³³ Applying restorative justice in the decision-making process enables policymakers to consider diverse justice concerns and ensure that any injustice arising from an energy activity must be rectified.

Energy justice can be the balancing mechanism that ensures that the competing aims of the energy sector can be balanced to benefit society by providing for a just and equitable decision-making process and outcomes for all members of the society at each stage of the energy cycle.³⁴ Situating energy access challenges and climate action in SSA within the energy justice framework will result in a greater focus on justice-related transition policies, thereby transforming the energy sector in the SSA region. This could be achieved by identifying trade-offs and focusing on the areas of synergy between SDGs 7 and 13 in the region. In addition, this will facilitate the design and just implementation of policies and programmes to achieve SDG 7, and 13 in SSA simultaneously and ensure that the energy sector is not only managed in a just and equitable way, but also in a manner that can reduce GHG emissions, make energy services more affordable, promote efficiency and encourage new technological development and regional integration.

4. ACHIEVING ENERGY JUSTICE TOWARDS 2030 IN SSA

Despite the trade-offs, achieving universal access to modern energy as contemplated in SDG 7 is not necessarily incompatible with the climate action required in SDG 13. This is because achieving SDG 7 by deploying clean energy resources will contribute significantly to reducing GHG emissions, thereby contributing to the objectives of SDG 13 and the Paris Agreement. However, striving to accomplish both goals raises social justice issues that may prove counterproductive in the long term. For this reason, we propose the contextualization of the SDGs 7 and 13 in SSA within the energy justice framework to fully actualize the benefits of both goals, despite the inherent trade-offs.

In this section, we proffer strategic ways through which SSA countries can achieve energy and climate justice simultaneously. The argument here is premised on utilizing specific approaches to help SSA countries, particularly the ones that presently rely heavily on fossil fuels, to increase energy access whilst meeting their climate change obligations. The idea here is to demonstrate how countries in the SSA region, especially those dependent on fossil fuel energy, can use the energy justice framework and take just and sustainable actions to realize the SDGs 7 and 13 by 2030.

Currently, without a doubt, most resource-rich SSA countries seek to tackle energy access challenges and ensure economic prosperity by exploiting available fossil-based energy resources.³⁵ However, the implementation of strategies to help the transition to a low-carbon economy means that activities in fossil-based industries will generally be reduced and eventually eliminated to usher in green and climate-friendly technologies. By implication, this will lead to the loss of economic opportunities and jobs in those industries and have diverse effects on different groups of persons, with the most vulnerable people likely to be women and girls, particularly in rural areas.³⁶ For instance, in South Africa, the planned closure of coal power plants in the country portends severe implications for the future of workers whose livelihoods depend on the

32 Raphael J Heffron, 'Energy Law for Decommissioning in the Energy Sector in the 21st Century' (2018) 11 *Journal of World Energy Law and Business* 189.

33 Simone Abram and others, *Just Transition: Pathways to Socially Inclusive Decarbonisation* (COP26 Universities Network Briefing 2020) 1–6.

34 Heffron and Talus (n 13).

35 Gilberto Mahumane and Peter Mulder, 'Expanding Versus Greening? Long-term Energy and Emission Transitions in Mozambique' (2019) 126 *Energy Policy* 145.

36 Thuo Njoroge Daniel and Eric Mwangi, 'Understanding the Energy Transition Terrain in Kenya' (2021) 19 *OGEL* <<https://www.ogel.org/journal-advance-publication-article.asp?key=621>> accessed 13 September 2021.

sector.³⁷ In addition, this approach will severely impact the country's economy as it largely depends on coal for boosting other sectors.

Therefore, the transition from hydrocarbon resources to reduce emissions to clean energy sources must be people-centred and inclusive. The authors propose that the transition goals for SSA countries should be underpinned by vulnerability assessments that address the core dimensions of justice embedded in the energy justice framework. This would imply that decarbonization policies and investments in SSA countries must be understood and considered based on their distribution and social inclusion implications. This would require policymakers to identify the social and economic structure of carbon-related industries and provide avenues for local stakeholders to participate in the sector's transformation.

More so, it is noted that the development of clean energy sources would lead to significant changes in existing social, economic and cultural systems and practices. This also portends adverse social and environmental consequences, particularly in developing countries where injustices and inequalities exist.³⁸ For instance, this can occur in ecological losses, water scarcity, forced displacement, social conflicts and infringements of cultural and indigenous rights. As such, developing these projects to achieve access to clean energy may implicitly undermine the rights of vulnerable groups and make climate change mitigation and adaptation efforts more difficult to attain if not developed in a just and fair manner.³⁹ These perspectives of social injustice ultimately affect the transition's sustainability and acceptability.

Another point to note is the impact of green projects or investments on vulnerable people in society. It is, therefore, necessary to ensure that the negative consequences of green projects or investments are justly remedied. For instance, there are situations where the deployment of hydropower projects affects a community's source of water,⁴⁰ or where limiting forestry activities could adversely impact indigenous communities who depend on forests for their livelihoods.⁴¹ Addressing such injustices require that restorative programmes be incorporated into transition initiatives to ensure that communities and individuals are adequately compensated for environmental or social impacts of transition programmes.⁴² For example, this may involve providing new livelihood opportunities and alternative drinking water sources where a renewable hydro energy project impacts a community's water source.

Regarding climate action in SSA countries, communities are at risk of climate change impacts, yet the costs and benefits of climate policies addressing the problem are unequally distributed across social-economic contexts. Identifying climate risks and adaptation measures derived only from the priorities of the States often neglect the values and rights of vulnerable social groups.⁴³ This results in procedural and recognition injustices because States are primarily involved in creating resilience and adaptive approaches without consideration for the interests of groups or individuals affected by these policies.⁴⁴ The truth remains that SSA countries will need to develop mitigation and adaptation policies based on assessing cross-sectoral and geographical vulnerabilities to climate change effects. This would necessitate a pathway that considers local and indigenous

37 Ademola Oluborode Jegede, 'Should They Just Leave? Global Energy Transition, Climate Change and the Protection of Workers' Rights in South Africa' (2021) 1 OGEL <<https://www.ogel.org/article.asp?key=3948>> accessed 23 July 2021

38 Paola Villavicencio Calzadilla and Romain Mauger, 'The UN's New Sustainable Development Agenda and Renewable Energy: The Challenge to Reach SDG7 while Achieving Energy Justice' (2017) 36 *Journal of Energy & Natural Resources Law* 233.

39 *ibid.*

40 Clark A Miller, Jennifer Richter and Jason O'Leary, 'Socio-Energy Systems Design: A Policy Framework for Energy Transitions' (2015) 6 *Energy Research & Social Science* 29.

41 Social Dimensions of Climate Change (World Bank) <<https://www.worldbank.org/en/topic/social-dimensions-of-climate-change#1>> accessed 2 September 2021

42 Noel Healy and John Barry, 'Politicizing Energy Justice and Energy System Transitions: Fossil Fuel Divestment and A "Just Transition"' (2017) 108 *Energy Policy* 451.

43 David Schlosberg and Lisette B Collins, 'From Environmental to Climate Justice: Climate Change and The Discourse of Environmental Justice' (2014) 5 *Wiley's Interdisciplinary Review Climate Change* 359.

44 Menton and others (n 30).

knowledge, gender issues, social, economic and environmental ramifications to establish a just and inclusive transition into a climate-resilient economy and society.

The authors argue that SSA countries could use procedural justice measures to encourage public discussions on their climate and decarbonization policy pathways and actions. Through this approach, community members can build local just energy solutions to secure local energy resilience, particularly in disasters and extreme events.⁴⁵ For example, to channel resources and finances to support climate action, the World Bank is collaborating with Kenya's national and county administrations so that local people can build solutions based on their needs.⁴⁶ Using such an innovative climate finance model, communities and marginalized groups can have access to the policy, technical and financial support they require for local energy development that is relevant and sustainable.

Additionally, the adoption of energy justice principles will require the participation of both public and private sector companies. In this regard, investors play an essential role by ensuring that clean energy and climate change initiatives are developed and implemented within a just transition framework. Furthermore, such projects must be transparent and accountable to the public and provide for remediation where it occasions any form of injustice. Hence, achieving just decarbonization policies through democratic engagement platforms and addressing socio-economic inequities would help minimize the inevitable backlash if the decarbonization process is unjust. The following sub-sections shift to a consideration of strategies that countries in the SSA region could adopt to achieve their energy goals as stipulated in SDG 7—ie energy justice—while also striving to meet their climate change obligations as stipulated in SDG 13—ie climate justice.

Diversification of energy options

In the present energy landscape, the focus of the energy policy framework has been on dimensions aiming at affordability, sustainability, cost-efficiency through viable markets and security of supply.⁴⁷ This is somewhat achieved through policies that seek to pursue practical diversification of energy options.⁴⁸ Regrettably, at the heart of the energy access crisis in Africa's developing countries (particularly in the SSA region) is the failure of the region's national governments to recognize the role of diversification of energy options. This approach is a system that focuses on a holistic approach to sustainable energy policies.⁴⁹ However, a fundamental problem with the regulatory and governance framework of the power sector in most SSA countries is the over-centralization of management responsibilities and administrative structures in the energy sector. This approach has significantly led to policies that obstruct diversification in the energy sector and neglect vulnerable persons in rural communities.

Interestingly, the current organizational architecture of energy systems developed primarily for traditional and centralized power generation, demands structural improvements to accommodate the increasing share of renewable energy sources such as solar and wind and the growth of decentralized power generation. This approach, if properly pursued, offers most of the SSA countries the opportunity to establish off-grid and mini-grid technologies and innovative clean cooking technologies to ensure universal access to renewable, reliable and modern energy. In addition, decentralized renewable energy technologies, such as solar mini-grids and other off-grid solutions, provide the possibility of the integration of a clean energy system that is good for the climate and required to unlock economic growth, particularly in rural areas not connected to the grid.⁵⁰

45 *ibid.*

46 Social Dimensions of Climate Change (World Bank) <<https://www.worldbank.org/en/topic/social-dimensions-of-climate-change#1>> accessed 2 September 2021.

47 Tade Oyewunmi, 'Resilience, Reliability and Gas to Power Systems in the USA: An Energy Policy Outlook in the Era of Decarbonization' (2021) 14 *Journal of World Energy Law and Business* 257.

48 Godswill A Agbaitoro 'Is having a Robust Energy Mix a Panacea for Resolving the Energy Crisis in Nigeria?' (2017) 7(4) *Renewable Energy Law and Policy Review* 7.

49 Yemi Oke, 'Beyond Power Sector Reforms: The Need for Decentralized Energy Options (DEOPs) for Electricity Governance in Nigeria' (2012) 18(1) *Nigerian Journal of Contemporary Law* 68.

50 Asako Okai and Marcel Alers 'Green Pathways out of Crisis' (United Nations Development Programme, 20 April 2021) <<https://www.undp.org/blogs/green-pathways-out-crisis>> accessed 17 September 2021.

SSA countries such as Kenya, Mozambique and Nigeria have progressively adopted rural electrification schemes for decentralized generation and mini-grids as part of their efforts to address access challenges in remote areas. For example, the Rural Electrification and Renewable Energy Corporation in Kenya, established under the Energy Act 2019, is mandated to facilitate rural electrification.⁵¹ Similarly, the Nigeria Electrification Programme, administered by the Rural Electrification Agency, undertakes initiatives to promote access to electricity in rural communities through solar mini-grids and stand-alone off-grid solutions.⁵² These are commendable examples that other SSA states can adopt towards solving their energy access challenge in a climate-friendly manner without neglecting any group of persons. In this sense, a decentralized governance structure in the energy sector is necessary to facilitate efficient technologies to sustain livelihoods in rural areas.

Renewable energy development

Closely related to the diversification of energy options is the deployment of renewable energy sources by SSA countries. Admittedly, there is clear evidence that the continent has abundant renewable energy resources, including solar, biomass, wind and hydropower.⁵³ For example, the Sahel area of the SSA region is reported to have twice the average daily sunlight exposure of Europe, which offers a significant opportunity to provide clean, affordable and modern energy for 140 million people in rural areas who currently lack access.⁵⁴ To address 'energy marginalisation', which violates most ethical systems,⁵⁵ it is pertinent for countries in the SSA region to adopt sustainable energy system transition policies that take into account the just deployment of renewable resources.

As renewable energy becomes more dominant, energy transition policies in SSA countries should enable its integration into broader energy systems while considering the social injustices that arise from neglect of vulnerable groups, distribution inequalities and concerns about democratic participation. It is necessary to ensure that policies to support the integration include measures that promote the connection of communities in rural areas to the grid or implement programmes supporting mini-grid and off-grid solutions to providing clean energy for those vulnerable communities not connected to the grid.

Expectedly, most countries establish regulations and pricing strategies, such as feed-in tariffs and auctions, to support renewable energy investments.⁵⁶ However, due to their priority of commercializing the energy transition, these policies result in programmes that mainly ensure the bankability of projects while ignoring the justice dimension underlying the social development aspects of the energy transition. The predisposition to especially favour commercial mechanisms poses a risk to distributive justice. This is the case, for instance, when auction instruments result in a highly uneven geographical spread.⁵⁷ Thus, to avoid designing renewable energy as a privileged solution for urban dwellers or high or middle-class residents alone, it is essential to factor in the interests of rural or impoverished communities to ensure that they have access to and can afford clean energy when provided.

51 The Energy Act 2019, s 43 (Kenya).

52 'Nigeria Electrification Programme' (Rural Electrification Agency) <<https://nep.rea.gov.ng>> accessed 20 February 2022.

53 Anton Eberhard and others, *Africa's Power Infrastructure: Investment, Integration, Efficiency* (World Bank 2011) 2 <<https://ppiaf.org/documents/3135/download>> accessed 11 September 2021.

54 Okai and Alers (n 50).

55 Marginalization is 'a situation where territories that have the renewable resources at their disposal fail to key into the global drive of renewable energy deployment and therefore remains outside the drive of the renewable energy system.' See Yekeen A Sanusi 'Exploring Marginalisation and Exclusion in Renewable Energy Development in Africa' in *Proceeding of International Conference on Equity and Energy Justice held at Durham University between 11th and 12th September, 2017* Cited in Yekeen A Sanusi and Andreas Spahn, 'Exploring Marginalization and Exclusion in Renewable Energy Development in Africa: A Perspective from Western Individualism and African Ubuntu Philosophy' in Gunter Bombaerts and others (eds), *Energy Justice Across Borders* (Springer 2020) 273–296, 275.

56 Müller and others (n 15).

57 Lucy Baker, 'Renewable Energy in South Africa's Minerals-Energy Complex: A 'Low Carbon' Transition?' (2014) 42 *Review of African Political Economy* 254.

Energy efficiency measures

The introduction of energy efficiency measures can reduce energy emissions and facilitate climate mitigation. Energy efficiency mainly implies getting the most out of every unit of energy, and this has been described as an energy strategy that every country possesses in abundance and, more importantly, can be used to reduce carbon emissions.⁵⁸ This is because the energy not consumed due to energy efficiency is carbon-free by default.⁵⁹ It could also contribute to achieving universal access to energy by making more energy available and reducing air pollution. Furthermore, if properly deployed by any State, energy efficiency is also an essential driver of job creation. With the right policy tools, people from marginalized communities facing the double burdens of energy insecurity and energy-related pollution can access energy efficiency measures.⁶⁰ The truth is that the use of energy efficiency measures can reduce inequities at both ends by making energy costs more affordable while also reducing the demand for more energy production and as a result, lowering associated GHGs into the atmosphere.⁶¹

Energy efficiency as a strategy typically requires changes in consumer behaviour and practices. This approach includes the technical procedure of replacing old appliances and equipment with more efficient ones. These initiatives would include obligatory energy labelling and performance standards, which establish minimum levels of energy performance for buildings, lights, appliances and equipment.⁶² Despite the considerable benefits of energy-saving initiatives, SSA countries face some implementation challenges. These challenges include poor legislative and institutional frameworks, a shortage of skilled labour force for energy efficiency projects and a lack of understanding of the benefits of energy efficiency amongst stakeholders.⁶³ While developing relevant regulatory and governance frameworks is relevant to incentivizing energy efficiency investments and practices, the authors also propose adopting procedural justice mechanisms to ensure that all stakeholders and residents are included in the decision-making process for technological and policy solutions and, more importantly, educated about the long-term benefits of energy efficiency measures.

Regional cooperation in the development and management of energy resources

The role of regional cooperation in energy development by African countries to address energy access and climate change challenges cannot be overemphasized. Notably, the Economic Community of West African States and Southern African Development Community play a significant role within each region in addressing these challenges. There have been notable actions by African states in terms of establishing the West African Power Pool in the western region and the South African Power Pool in the southern region. However, as noted by energy scholars, there is a need for African countries to embrace more regional cooperation to jointly set up strategies that massively adopt the development of RE, drive more investments in research and technology on the continent, and reframe institutional and regulatory frameworks in the energy sector in response to growing energy transition debate.⁶⁴

58 International Energy Agency, *Energy Efficiency 2020* (International Energy Agency 2020) <https://iea.blob.core.windows.net/assets/59268647-0b70-4e7b-9f78-269e5ee93f26/Energy_Efficiency_2020.pdf> accessed 10 September 2021.

59 Sirja-Leena Penttinen, 'Sustainability in the Energy Sector: Policy Directions and Implementing Measures' (2018) 16 OGEI <<https://www.ogel.org/article.asp?key=3770>> accessed 10 September 2021.

60 Basav Sen, Griffin Bird and Celia Bottger 'Energy Efficiency with Justice: How State Energy Efficiency Policy Can Mitigate Climate Change, Create Jobs, and Address Racial and Economic Inequality' (Institute for Policy Studies 2018) <<https://ips-dc.org/wp-content/uploads/2018/08/Basav-report-final-online-1.pdf>> accessed 6 September 2020.

61 Godswill Agbaitoro, 'Delivering Energy and Climate Justice in Africa: Implications for Realizing the United Nations SDGs 7 and 13' (*Essex Law Research Blog*, 20 April 2021) <<https://essexlawresearch.blog/2021/04/20/delivering-energy-and-climate-justice-in-africa-implications-for-realizing-the-united-nations-sdgs-7-and-13/>> accessed 24 September 2021.

62 Marcel Eusterfeldhaus and Barry Barton, 'Energy Efficiency: A Comparative Analysis of the New Zealand Legal Framework' (2011) 29(4) *Journal of Energy & Natural Resources Law* 431.

63 Katrina Pielli and others, *Examining Energy Efficiency Issues in Sub-Saharan Africa* (United States Agency for International Development 2014) <<https://www.usaid.gov/powerafrica/newsletter/dec2014/smarter-power-in-africa>> accessed 25 September 2021.

64 Victoria Nalule, 'How to Respond to Energy Transition in Africa: Introducing the Energy Progression Dialogue' in Victoria Nalule (ed), *Energy Transitions and the Future of the African Energy Sector: Law, Policy and Governance* (Palgrave Macmillan 2021) 10.

The transformative changes required to optimize the utilization of the reserves of natural resources in the region cannot be left alone to domestic markets. On account of the unequal distribution of resources in the region, several countries are inclined to use inefficient fossil fuel-powered generators to meet their energy needs. When a country's energy resources are inadequate or cannot be efficiently harnessed, neighbouring countries' renewable resources can make up the difference. In reality, some SSA countries may need to import power from countries with significant renewable energy resources through regional power trade to boost renewable energy potentials which have a positive environmental impact and contribute to lower carbon emissions.⁶⁵ Therefore, the importance of regional cooperation in accelerating energy transition should be emphasized as it helps to optimally release renewable energy capacity while taking into account local conditions.⁶⁶ Additionally, the adoption of a regional cooperation strategy could help to address marginalization in terms of energy access across the SSA region.

5. CONCLUSION

SSA countries face different strands of energy access and climate change challenges that affect their socio-economic developments. Although the UN SDGs, particularly SDG 7 and 13, incorporate several interlinked economic, social and environmental targets to address diverse issues relating to energy access and climate change, they are also characterized by interdependent and conflicting interactions. Such incompatible interactions in the context of SSA put developing countries in a position where they must choose between contradictory policy options towards attaining universal access to modern energy and decarbonizing their energy systems to become more climate-resilient. In this article, the authors argued that to navigate such a paradox, there is a need to give due consideration to social justice by way of simultaneously achieving both goals. The article further argued that the concept of energy justice could be used as a tool by policymakers in SSA countries to systematically decarbonize their energy systems and build climate-resilient economies in a just manner. We aimed to underscore the need to resolve justice concerns and decrease risks in the energy sector given that most climate changes issues are attributable to the sector.

Overall, the arguments include how the energy justice framework can be applied and implemented in the SSA transition discourse whilst ensuring the realization of SDGs 7 and 13 simultaneously. To achieve this, the energy transition should have justice at its core and deliver just outcomes not just at the international level in terms of the UN SDGs and Paris Agreement but also at the National level and in practical terms across the energy life-cycle.⁶⁷ Notably, incorporating the energy justice dimensions of distributional, procedural and recognition justice, the authors posit that the SSA countries could minimize social injustices associated with decarbonizing energy systems and at the same time develop policies to address energy access challenges. This approach takes into account marginalized groups, including local and indigenous voices, in the energy decision-making process. This is because any action towards the transition to a low-carbon economy must be based on a socially inclusive vulnerability assessment that provides necessary data for developing and implementing energy policies across the different stages of the energy life-cycle.

In the context of the energy sector, one way to address injustices across project life-cycles is to articulate their interactions with basic rights that include right to life, health, human dignity and healthy environment, in which unjust implementation of energy policies and projects by governments and MNCs threaten or infringe. Unarguably, more research on energy justice, particularly in the SSA region, is needed to build on

65 Eghosa Osa Ekhaton and Godswill Agbaitoro 'Energy law and Policy in Nigeria with Reflection on the International Energy Charter and Domestication of the African Charter' in Romola Adeola and Ademola Oluborode Jegede (eds), *Governance in Nigeria Post-1999: Revisiting the Democratic 'New Dawn' of the Fourth Republic* (Pretoria University Law Press 2019) 113.

66 International Renewable Energy Agency, *Scaling up Renewable Energy Deployment in Africa: Detailed Overview of Irena's Engagement and Impact* (International Renewable Energy Agency 2020) <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Feb/IRENA_Africa_Impact_Report_2020.pdf?la=en&hash=B1AD828DFD77D6430B93185EC90A0D1B72D452CC> accessed 24 June 2021.

67 Raphael Heffron, 'Applying Energy Justice into the Energy Transition' (2022) 156 *Renewable and Sustainable Energy Reviews* 111936.

recent insights that emphasize the human rights dimension of energy activities of MNCs and the role of national courts as an important institution in defining what justice is and holding both governments and MNCs accountable to acceptable Environmental, Social and Governance standards.⁶⁸

We note further that with wealthy countries failing to commit to fulfilling the long overdue promise to provide funding to help poorer countries most vulnerable to climate change at the recently concluded COP 26, in Glasgow, SSA countries will need to develop strategies nonetheless to decarbonize their energy systems and build climate-resilient economies in a just manner. Beyond funding, it is apparent that most MNCs that operate in the energy sector in SSA region are headquartered in developed countries. Hence, initiatives such as policy and legislative changes that provide for increased transparency and adherence to just practices in the energy sector in these nations could have a significant impact and embed a new social contract in the countries where MNCs operate. The SSA region can therefore benefit from energy justice practices being implemented in developed countries.

Following the swearing-in of President Biden, the USA is once again taking a leading role in the global action against climate change and the delivery of energy justice. Indeed, President Biden administration's Justice40 Initiative, which aims for 40 per cent of benefits from federal money spent on climate change to reach disadvantaged communities shows a significant commitment to addressing issues relating to energy and climate injustice. The creation of a special energy justice role at the Department of Energy in the United States, and the appointment of Professor Shalanda Baker as Director of the Office of Minority Economic Impact (formerly Deputy Director for Energy Justice) at the Department of Energy has helped to shape the administration's focus on energy justice.⁶⁹ Considering that similar forms of energy injustices exist in the SSA region in addition to climate change challenges, the efforts of the Biden administration provides a practical guide for SSA countries. However, for this approach to be replicated in SSA countries it will depend on the administration of individual countries—that is whether they prioritize the delivery of energy justice to the citizens.

The approaches and policy options proposed in this article can be better actualized with the establishment of government departments or agencies with a core mandate of entrenching and implementing the principles of energy justice. This approach could be pursued through measures that seek to address injustices that arise along the entire energy system spectrum, from production to consumption and waste management. Additionally, national courts can play an essential part in ensuring that public policies and social justice in the energy industry are at par with legal standards. One of such instance, which needs to be replicated in SSA countries, is the decision of the Federal High Court in Nigeria in the case of *Jonah Gbemre v Shell SPDC Nigeria Limited*.⁷⁰ While the measures proposed in this article may not be exhaustive, it is hoped that if applied, they could potentially be useful tools for the delivery of energy and climate justice in the SSA region by 2030.

68 Raphael J Heffron, 'Energy Multinational Challenged by the Growth of Human Rights' (2021) 6 *Nature Energy* 849.

69 US Department of Energy. 'Shalanda Baker' <<https://www.energy.gov/index.php/diversity/person/shalanda-h-baker>> accessed 20 January 2022.

70 See discussion on the case in Bukola Faturoti, Godswill Agbaitoro and Obinna Onya, 'Environmental Protection in the Nigerian Oil and Gas Industry and *Jonah Gbemre v Shell PDC Limited*: Let the Plunder Continue?' (2019) 27 (2) *African Journal of International and Comparative Law* 225.