

Fostering Energy Justice in Africa

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Fostering Energy Justice in Africa

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Abstract

The paper critically explores the concept of energy justice in Africa. It argues that energy is a fundamental need that is required to unlock socio-economic development in Africa. The paper further posits that challenges in the energy sector in Africa including inadequate and unreliable access to clean and modern energy sources raises injustices and inequalities. The paper conceptualizes energy justice and highlights its salient components. It further discusses the idea of energy justice in Africa and the promises and pitfalls facing its realization. The paper also suggests reforms towards fostering energy justice in Africa.

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1.0 Introduction

Energy is an essential input to economic activity, with access to reliable and affordable energy supply fundamental for social and economic development¹. It has correctly been pointed out that energy services are a crucial input to the primary development challenge of providing adequate food, shelter, clothing, water, sanitation, medical care, schooling, and access to information². As a result, it has been argued that energy is one dimension or determinant of poverty and development³. Energy supports the provision of basic needs such as cooked food, a comfortable living temperature, lighting, the use of appliances, piped water or sewerage, essential health care (refrigerated vaccines, emergency and intensive care), education aids, and communication and transport⁴. Energy also fuels productive activities, including agriculture, commerce, manufacture, industry, and mining⁵. Conversely, lack of access to energy contributes to poverty and deprivation and can contribute to economic decline⁶.

It has been pointed out that access to a reliable and quality energy supply is vital to the economic development of any country⁷. It drives industrialization, boosts productivity and economic growth, spurs human development, and is crucial to achieve almost all of the United Nations Sustainable Development Goals (SDGs). Modern energy services are crucial to human well-being and to a country's economic development⁸. According to the International Energy Agency, access to modern energy is essential for the provision of

¹ World Trade Organization., 'Energy Services.' Available at https://www.wto.org/english/tratop_e/serv_e/energy_e/energy_e.htm (Accessed on 21/11/2023)

² Sagar. A., 'Alleviating Energy Poverty for the World's Poor' (2005) *Energy Policy* (2005), 33, 1367.

³ Ibid

⁴ Ibid

⁵ Bradbrook. A., 'Access to Energy Services in a Human Rights Framework.' Available at https://www.un.org/esa/sustdev/sdissues/energy/op/parliamentarian_forum/bradbrook_hr.pdf (Accessed on 21/11/2023)

⁶ Ibid

⁷ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Available at <https://unctad.org/publication/commodities-glance-special-issue-access-energy-sub-saharan-africa#:~:text=Access%20to%20energy%20is%20defined,be%20scaled%20up%20over%20time>. (Accessed on 21/11/2023)

⁸ International Energy Agency., 'Defining Energy Access: 2020 Methodology.' Available at <https://www.iea.org/articles/defining-energy-access-2020-methodology> (Accessed on 21/11/2023)

clean water, sanitation and healthcare and for the provision of reliable and efficient lighting, heating, cooking, mechanical power, transport and telecommunications services⁹. Access to energy is therefore a pre-condition for socio-economic development due to its potential to spur economic development and poverty eradication¹⁰. It has been argued that no country in the recent past has been able to spur economic development and substantially reduce poverty levels without an increase in energy services¹¹.

Due to its importance, it has been argued that energy is a fundamental human right¹². A basic legal right of access to energy services has been pointed out as ideal in ensuring access on the basis of equality and non-discrimination to a sufficient, regular, reliable, efficient, safe, and affordable supply of (ideally clean and sustainable) energy¹³. It has been asserted that recognizing access to energy as a human right places it in the context of justice to include a broader variety of issues, such as production, distribution and consumption of energy of both contemporaries and future generations¹⁴. Energy is therefore a fundamental human need and right and a crucial factor for the attainment of other socioeconomic rights such as the right to education, right to food and the right to health among others¹⁵. As a result, it has been contended that energy should be adopted as the next internationally-recognised human right¹⁶.

⁹ Ibid

¹⁰ United Nations Development Programme., 'Energy Access.' Available at <https://www.undp.org/energy/our-work-areas/energy-access> (Accessed on 21/11/2023)

¹¹ Yoshida, T., & Zusman, E., 'Achieving the Multiple Benefits of a Sustainable Development Goal for Energy' Available at https://iges.or.jp/en/publication_documents/pub/bookchapter/en/4934/08_Ch8_Achieving_the_SDGs.pdf (Accessed on 21/11/2023)

¹² Muigua, K., 'Access to Energy as a Constitutional Right in Kenya.' Available at <https://kmco.co.ke/wp-content/uploads/2018/08/Access-to-Energy-as-a-Constitutional-Right-in-Kenya-NOVEMBER-2013.pdf> (Accessed on 21/11/2023)

¹³ Ibid

¹⁴ Lofquist . L., 'Is there a Universal Human Right to Electricity?.' *The International Journal of Human Rights.*, Volume 24, Issue 6., (2020)

¹⁵ The World Bank, 'Sustainable Development Goal on Energy (SDG7) and the World Bank Group, available at <https://www.worldbank.org/en/topic/energy/brief/sustainable-development-goal-onenergy-sdg7-and-the-world-bank-group> (Accessed on 21/11/2023)

¹⁶ Hughes. M., 'Why Access to Energy Should be a Basic Human Right.' Available at <https://www.forbes.com/sites/mikehughes1/2018/12/10/why-access-to-energy-should-be-a-basic-human-right/?sh=1ac8d18145f2> (Accessed on 21/11/2023)

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It has been observed that while energy is a multi-faceted issue and needs a coordinated international response on many fronts, the issue that has attracted most attention recently has been the need to provide universal access to modern energy services¹⁷. The energy sector in Africa raises critical issues such as access to clean, modern and affordable energy services for the poor and sustainability in its environmental, financial, and fiscal aspects¹⁸. It has been pointed out that a significant number of the global population lack access to modern energy services with this problem being more compounded in Sub-Saharan Africa where majority of the population lack access to clean and affordable energy and depend on traditional fuels¹⁹. This raises energy justice concerns with access to energy representing one of Africa's greatest obstacles to social and economic development²⁰.

The paper critically explores the concept of energy justice in Africa. It argues that energy is a fundamental need that is required to unlock socio-economic development in Africa. The paper further posits that challenges in the energy sector in Africa including inadequate and unreliable access to clean and modern energy sources raises injustices and inequalities. The paper conceptualizes energy justice and highlights its salient components. It further discusses the idea of energy justice in Africa and the promises and pitfalls facing its realization. The paper also suggests reforms towards fostering energy justice in Africa.

¹⁷ Bradbrook. A., 'Access to Energy Services in a Human Rights Framework.' Op Cit

¹⁸ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Glenwood Publishers Limited, 2015

¹⁹ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

²⁰ Hafner. M., 'The Challenge of Energy Access in Africa.' Available at https://link.springer.com/chapter/10.1007/978-3-319-92219-5_1 (Accessed on 21/11/2023)

2.0 Conceptualizing Energy Justice

It has been argued that the conceptual sophistication of environmental justice work over the years has spawned efforts to apply lessons to a widening scope of concerns including those in the energy sector²¹. Environmental Justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies²². Environmental Justice is attained when every person enjoys the same degree of protection from environmental and health hazards and has access to the decision-making process to have a healthy environment²³. Environmental Justice thus seeks to address distributive inequity, lack of recognition, disenfranchisement and exclusion in environmental matters²⁴. It has been asserted that the idea of energy justice comes from the concepts of social justice and environmental justice²⁵.

Energy justice has emerged as a concept that seeks to apply justice principles to energy production, energy consumption, energy systems, energy policy, energy security, and the political economy of energy²⁶. Energy justice evaluates where injustices in the energy sector emerge, which sections of the society are affected and ignored, and which processes exist for their remediation in order to reveal, and reduce injustices in the energy sector²⁷. Energy justice therefore offers an opportunity to explore where injustices occur,

²¹ Lee, J., & Byrne, J., 'Expanding the Conceptual and Analytical Basis of Energy Justice: Beyond the Three-Tenet Framework.' Available at <https://www.frontiersin.org/articles/10.3389/fenrg.2019.00099/full> (Accessed on 22/11/2023)

²² United States Environmental Protection Agency; 'Environmental Justice.' Available at <https://www.epa.gov/environmentaljustice> (Accessed on 22/11/2023)

²³ Ibid

²⁴ Schlosberg, D & Collins, L., 'From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice.' *WIREs Clim Change*, 2014

²⁵ United Nations., 'In Quest of an Energy Justice Framework for Bangladesh.' Available at <https://www.un.org/en/chronicle/article/quest-energy-justice-framework-bangladesh> (Accessed on 22/11/2023)

²⁶ Jenkins, K et al., 'Energy Justice: A conceptual Review.' *Energy Research & Social Science.*, Volume 11, 2016, pp 174-182

²⁷ Ibid

developing new processes of avoidance and remediation, and recognizing new sections of society²⁸.

It has been argued that energy justice requires a clear exposition of how energy transition can be achieved globally to support the democratization of energy access²⁹. It envisions elements of a global energy system that fairly distributes both energy services' benefits and burdens and can be used as a framework to identify and remedy energy injustices³⁰. According to the United Nations, energy justice seeks to ensure universal access to safe, affordable and sustainable energy for all individuals, across all areas and to protect individuals from the disproportionate share of costs or negative impacts relating to building, operating, maintaining, generating, transmission, and distribution of energy and to ensure equitable access to benefits from each system³¹. Energy justice has the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, environmental and health burdens of those disproportionately harmed by the energy system³². Energy justice aims to make energy and energy systems accessible, affordable, clean, and democratically managed for all people and communities³³.

The concept of energy justice thus seeks to apply basic principles of justice and fairness to the inequalities witnessed in the availability, affordability, sustainability and due process in the energy sector³⁴. It envisions the ideal of a global energy system that fairly disseminates both the benefits and costs of energy services, and one that has

²⁸ Ibid

²⁹ Opal. A., & Nathwani. J., 'Chapter 32 - Global Energy Transition Risks: Evaluating the Intergenerational Equity of Energy Transition Costs.' *Energy Democracies for Sustainable Futures.*, 2023, pp 301-310

³⁰ Ibid

³¹ United Nations., 'In Quest of an Energy Justice Framework for Bangladesh.' Op Cit

³² Initiative for Energy Justice., 'What is Energy Justice?' Available at <https://iejusa.org/> (Accessed on 22/11/2023)

³³ Ibid

³⁴ Heffron. J.R., & McCauley. D., 'The Concept of Energy Justice across the Disciplines' *Energy Policy*, 105 (2017) 658-667

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representative and impartial energy decision-making³⁵. It further poses a justice and ethical dilemma of allocating the benefits of scarce energy resources among citizens and between the present and future generations³⁶. Through energy justice, availability, security, affordability, and sustainability in the energy sector can be achieved for human and economic development³⁷.

Energy justice is premised on the tenets of distributional, recognition and procedural justice³⁸. Distributional justice recognises both the physically unequal allocation of environmental benefits and ills, and the uneven distribution of their associated responsibilities and represents a call for the even distribution of benefits and ills on all members of society regardless of their status³⁹. It assesses issues such as uneven distribution, production and consumption of energy⁴⁰. The location of energy production facilities such as wind power stations, dams and gas power stations could create inequalities in access to energy thus raising justice concerns⁴¹. Simultaneously, studies of energy poverty have questioned the distributional burden of rising energy prices⁴². Distributional justice therefore seeks to explore and address injustices in both production and consumption of energy. Recognition justice on the other hand entails the idea that individuals must be fairly represented, that they must be free from physical threats and that they must be offered complete and equal political rights⁴³. It is aimed at determining the section of the population ignored or misrepresented in energy access in order to cure such ills⁴⁴. Procedural justice concerns access to decision-making processes that govern

³⁵ Sovacool. B., & Dworkin. M., 'Global Energy Justice: Problems, Principles and Practices.' Cambridge Univ. Press, 2014.

³⁶ Sovacool. B., 'Energy Decisions Reframed as Justice and Ethical Concerns' Energy Justice.' Available at <https://core.ac.uk/download/pdf/42579074.pdf> (Accessed on 22/11/2023)

³⁷ Muigua. K., 'Towards Energy Justice in Kenya.' Available at <https://kmco.co.ke/wp-content/uploads/2020/02/Towards-Energy-Justice-in-Kenya-00000005.pdf> (Accessed on 22/11/2023)

³⁸ Ibid

³⁹ Jenkins. K et al., 'Energy Justice: A conceptual Review.' Op Cit

⁴⁰ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

⁴¹ Ibid

⁴² Jenkins. K et al., 'Energy Justice: A conceptual Review.' Op Cit

⁴³ Ibid

⁴⁴ Bouzarovski. S., & Simcock. N., 'Spatializing Energy Justice.' *Energy Policy*, (2017) 107. pp. 640-648.

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the distributions in the energy sector and manifests as a call for equitable procedures that engage all stakeholders in a non-discriminatory way⁴⁵. Procedural justice is aimed at streamlining the decision-making processes in the energy sector that engages all stakeholder to ensure inclusivity non-discrimination⁴⁶. It further aims at achieving just outcomes through local knowledge mobilization, greater information disclosure, and better institutional representation⁴⁷. The concept of energy justice therefore envisages that if injustices are to be tackled in the energy sector, it is imperative to identify the concern - distribution; identify who it affects - recognition, and only then identify strategies for remediation - procedure⁴⁸.

Energy justice is thus an important concept towards enhancing availability, security, affordability, sustainability and due process in the energy sector. It is based on certain core principles including the availability principle which urges countries to have sufficient modern energy resources; the affordability principle which argues that all people, including the poor, should get energy at a reasonable cost; the due process principle which requires countries to follow the rule of law and human rights in their production and use of energy; the sustainability principle which places an obligation on states to ensure long-term sustainable energy development with prudent management; the good governance principle which implies that all people should have access to all information regarding energy and environment, and citizens must be able to participate in fair, transparent and accountable forms of the energy decision-making process; the principle of intragenerational equity which emphasizes that every person has the right to fair access to energy services to enable them to enjoy a basic standard of well-being; the principle of intergenerational which stipulates that future generations have a right to enjoy a good life undisturbed by the damage our energy systems inflict on the world today; and the responsibility principle that places a duty on all nations to protect the

⁴⁵ Ibid

⁴⁶ Heffron. J.R., & McCauley. D., 'The Concept of Energy Justice across the Disciplines' Op Cit

⁴⁷ Jenkins. K et al., 'Energy Justice: A conceptual Review.' Op Cit

⁴⁸ Ibid

natural environment and its sustainability as well as diminish energy-related environmental threats⁴⁹. These principles are based on the *Rio Declaration on Environment and Development*⁵⁰ that places an obligation on states to pursue Sustainable Development by striking a balance between exploitation of their natural resources (including energy resources) for development and environmental conservation. It is therefore necessary for all countries to foster energy justice.

3.0 Fostering Energy Justice in Africa: Promises and Pitfalls

Fostering energy justice is a global concern. Sustainable Development Goal (SDG) 7 under the United Nations 2030 Agenda for Sustainable Development seeks to ensure universal access to affordable, reliable, sustainable and modern energy for all⁵¹. SDG 7 sets out several targets towards realizing this goal including substantially increasing the share of renewable energy in the global energy mix; improvement in energy efficiency; enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology; and expanding infrastructure and upgrading technology for supplying modern and sustainable energy services for all in developing countries⁵². According to the United Nations, achieving SDG 7 is key to the development of all sectors including agriculture, business, communications, education, healthcare and transportation⁵³. It urges all countries to pursue SDG 7 through measures such as accelerating electrification,

⁴⁹ United Nations., 'In Quest of an Energy Justice Framework for Bangladesh.' Op Cit

⁵⁰ United Nations General Assembly., 'Report of the United Nations Conference on Environment and Development: Rio Declaration on Environment and Development.' A/CONF. 151/26 (Vol.1)

⁵¹ United Nations., 'Transforming Our World: The 2030 Agenda for Sustainable Development.' Available at

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 22/11/2023)

⁵² Ibid, SDG 7

⁵³ United Nations., 'SDG 7: Affordable and Clean Energy.' Available at

<https://www.un.org/sustainabledevelopment/energy/#:~:text=Goal%207%20is%20about%20ensuring,%20education%20healthcare%20and%20transportation> (Accessed on 22/11/2023)

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increasing investments in renewable energy, improving energy efficiency and developing enabling policies and regulatory frameworks⁵⁴.

In Africa, *Agenda 2063*⁵⁵ seeks to enhance utilization of the Continent's energy sources, especially renewable energy in fostering economic growth and eradicating energy poverty⁵⁶. Agenda 2063 seeks to promote environmentally sustainable and climate resilient economies and communities in Africa wherein renewable energy (including wind, solar, hydro, bioenergy, ocean tidal waves, geothermal and other renewables) will claim more than half of the energy consumption for households, businesses and organizations⁵⁷. It identifies key challenges in Africa's energy profile including low production, low consumption, and high dependence on traditional biomass energy in the midst of a huge wealth of unexploited energy resources⁵⁸. Agenda 2063 identifies energy justice concerns in Africa which include low generation capacity and efficiency, high costs, unstable and unreliable energy supplies, low access to modern energy, insufficient energy infrastructure, and lack of institutional and technical capacity to harness huge resources⁵⁹. It seeks to foster energy justice in Africa through initiatives such as attaining energy security, achieving transition from traditional to modern and clean sources of energy and ensuring access of a majority of their citizens to electricity, and raising the share of renewable energy in total energy production⁶⁰. Agenda 2063 emphasizes that energy is the backbone of Africa's economic transformation⁶¹. Actualizing Agenda 2063 is a vital step towards fostering energy justice in Africa.

⁵⁴ Ibid

⁵⁵ Africa Union., 'Agenda 2063: The Africa we Want.' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 22/11/2023)

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Ibid

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At the regional level, the *Treaty Establishing the East African Community*⁶² recognizes the role of energy in the East African integration agenda. It urges member states to adopt policies and mechanisms to promote the efficient exploitation, development, joint research and utilisation of various energy resources available within the region⁶³. In addition, the Treaty calls upon member states to promote the exploitation and utilisation of new and renewable sources of energy within the East African Community⁶⁴. The Treaty also implores member states to take measures towards supplying affordable energy to their citizens while taking cognisance of the protection of the environment⁶⁵.

There has been some progress towards fostering energy justice in Africa. It has been observed that the continent has made progress towards universal energy access in recent years with electricity coverage increasing from forty four to fifty six per cent of the continent's population between 2010 and 2023⁶⁶. It has been pointed out that while some African countries including Ethiopia, Ghana, Kenya, Rwanda and Uganda have been steadily increasing their electrification rate and could achieve universal access, others such as Algeria, Carbo Verde, Egypt, Mauritius, Morocco, Seychelles, and Tunisia are already at or nearly at the point of universal access demonstrating the continent's efforts towards energy justice⁶⁷. In addition, there has been increased production of renewable energy in Africa with hydro, solar, wind, biofuels and biomass accounting for a significant percentage of the total primary energy produced on the continent⁶⁸. Renewable energy investments are beginning to bear fruit in several African countries with wind and solar power dominating non-hydro renewable energy generation and

⁶² Treaty Establishing the East African Community., Available at <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2487/download> (Accessed on 22/11/2023)

⁶³ Ibid, Article 101 (1)

⁶⁴ Ibid, Article 101 (2) (a)

⁶⁵ Ibid, Article 101 (2) (f)

⁶⁶ United Nations., 'Advancing SDG 7 in Africa.' Available at <https://sdgs.un.org/sites/default/files/2023-06/2023%20Advancing%20SDG7%20in%20the%20Africa-062923.pdf> (Accessed on 23/11/2023)

⁶⁷ Ibid

⁶⁸ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

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installed capacity⁶⁹. Further, it has been highlighted that East African economies are using available geothermal resources to generate an estimated 630 MW of power annually with Kenya being an African leader for operational geothermal power plants, with its geothermal power production totaling more than 40 per cent of the country's total electricity production⁷⁰.

It is therefore evident that there has been progress towards enhancing energy access and security in Africa. The United Nations observed that Africa has made substantial progress in proactive policy development, energy infrastructure resource mobilisation and enhanced independent power production⁷¹. However, despite this progress, there are several energy justice concerns in Africa related to access, security, reliability and affordability of energy.

The International Energy Agency estimates that nearly 600 million people or an equivalent of 43 per cent of the Continent's population lack access to electricity⁷². It further points out that less than a fifth of African countries have targets to reach universal electricity access by 2030⁷³. It has been observed that the Sub-Saharan region of Africa has the lowest rate of access to electricity with just nearly half of the population having access to electricity compared to the global access rate of nearly 90 per cent⁷⁴. Most of these people live in rural areas, and indeed, despite numerous national initiatives, rural electrification remains a significant difficulty for most African nations. Another key challenge in access to electricity in Africa is the significant difference in electrification between urban and rural areas. It has been noted that there is a substantial urban-rural

⁶⁹ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁷⁰ Elbarbary. S., 'Geothermal Renewable Energy Prospects of the African Continent Using GIS.' *Geothermal Energy.*, Volume 10, No. 8 (2022)

⁷¹ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁷² International Energy Agency., 'Access to Electricity.' Available at <https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity> (Accessed on 23/11/2023)

⁷³ Ibid

⁷⁴ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

difference in electricity access, with electrification in urban areas averaging nearly 78 per cent in sub-Saharan Africa and rural areas electrified on average at 28 per cent⁷⁵.

In addition, it has been observed that while Africa has made some progress towards enhancing access to electricity, progress remains slow in promoting clean cooking facilities⁷⁶. The United Nations points out that Africa does poorly compared to other regions regarding access to clean cooking since a majority of its population relies on traditional biomass for preparing food⁷⁷. Bio-energy sources such as charcoal, wood fuel and dung remain the most common source of energy for cooking in Africa especially among the rural population⁷⁸. However use of these sources is associated with environmental challenges such as air and soil pollution and environmental degradation through deforestation⁷⁹. Further, the use of such sources of energy in cooking has been linked to more than 500,000 annual deaths associated with indoor pollution⁸⁰. It has also rightly been observed that in the African set up, production and use of biomass fuels is the responsibility of women and children⁸¹. However, due to diminishing biomass energy supplies, women and children in some parts of Africa are spending increasing amounts of time fetching firewood and other biomass fuels leaving little time for other productive activities for women; and limited study-time particularly for the girl child⁸².

⁷⁵ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁷⁶ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

⁷⁷ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁷⁸ Muchiri. L., 'Gender and Equity in Bioenergy Access and Delivery in Kenya' Practical Action East Africa, 2008, available at

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKewiy2P29z6PnAhUEiFwKHQlyCLOQFjAAegQIBRAB&url=http%3A%2F%2Fwww.cas.ed.ac.uk%2F_d ata%2Fassets%2Fword_doc%2F0007%2F24793%2FGender_and_Equity_in_Bio_energy_Access_and_Deliv ery_in_Kenya_final.doc&usg=AOvVaw2AKp1mvTSC9tafkIKJ-36 (Accessed on 23/11/2023)

⁷⁹ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

⁸⁰ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁸¹ Republic of Kenya., 'Sessional Paper No. 4 on Energy.' Available at

<https://repository.kippra.or.ke/bitstream/handle/123456789/1371/SESSIONAL%20PAPER%204%200 N%20ENERGY%202004.pdf?sequence=3&isAllowed=y> (Accessed on 23/11/2023)

⁸² Ibid

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Further, it has been asserted that Africa's energy potential, especially renewable energy, is enormous, yet only a fraction of it is being currently employed⁸³. The potential for renewable energy production in Africa is very important because of the vast resources of solar, wind, hydro, geothermal and biomass available in the continent⁸⁴. However, several challenges remain in exploiting these resources in terms of developing adequate infrastructure, increasing access to finance, and establishing appropriate regulations and targets to diversify the continent's energy mix. It has been pointed out that despite its vast potential, Africa has the lowest share of modern renewable energy compared to other continents and the world⁸⁵.

Another key concern in the energy sector in Africa relates to efficiency, reliability and affordability. Africa has been classified as the least energy-efficient continent in the world⁸⁶. It has been observed that the energy sector in most African countries is crippled with unreliable electricity supply that often results in frequent power cuts which last for days in some areas⁸⁷. Such a situation forces most people to resort to alternative sources of energy including bioenergy and generators that are powered by oil products resulting in environmental concerns⁸⁸. According to the International Energy Agency, providing access to electricity is essential, but access has to bring with it a reliable supply of electricity if households, businesses and public services are to reap the full benefits⁸⁹. A lack of reliable electricity supply disrupts daily lives and activities, lowers trust and use of the grid, increases costs for consumers and utilities and may result in the use

⁸³ Africa Development Bank Group., 'Light Up and Power Africa - A New Deal on Energy for Africa.' Available at <https://www.afdb.org/en/the-high-5/light-up-and-power-africa-%E2%80%93-a-new-deal-on-energy-for-africa> (Accessed on 23/11/2023)

⁸⁴ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

⁸⁵ Ibid

⁸⁶ United Nations., 'Advancing SDG 7 in Africa.' Op Cit

⁸⁷ Mutiso. R., & Taneja. J., 'The Seven Major Threats to Kenya's Power Sector.' Available at <https://energyforgrowth.org/article/the-seven-major-threats-to-kenyas-power-sector/> (Accessed on 23/11/2023)

⁸⁸ Ibid

⁸⁹ International Energy Agency., 'Africa Energy Outlook 2019.' Available at https://iea.blob.core.windows.net/assets/2f7b6170-d616-4dd7-a7caa65a3a332fc1/Africa_Energy_Outlook_2019.pdf (Accessed on 23/11/2023)

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alternative sources of energy with significant environmental impacts⁹⁰. Energy affordability is also a key challenge in most sub-Saharan African Countries due to the high cost of power relative to income⁹¹.

The foregoing challenges contribute to energy injustices and insufficient energy access in Africa. According to the African Development Bank, insufficient energy access manifests itself in hundreds of thousands of deaths annually due to the use of wood-burning stoves for cooking; handicaps the operations of hospitals and emergency services; compromises educational attainment; and drives up the cost of doing business in the continent⁹². Further, it has been pointed out that low access to energy in Africa has implications on health, education, poverty reduction and Sustainable Development and contributes to energy poverty resulting in energy justice concerns⁹³. Energy poverty in Africa has been linked to inadequate and poor planning, poor regulatory frameworks for electrification, underperforming state-owned enterprises, lack of investment in infrastructure and poor maintenance of existing energy and electricity infrastructure⁹⁴. It is imperative to address these problems in order to foster energy justice in Africa.

⁹⁰ Ibid

⁹¹ International Energy Agency, 'Africa Energy Outlook 2019' Op Cit

⁹² Africa Development Bank Group., 'Light Up and Power Africa - A New Deal on Energy for Africa.' Op Cit

⁹³ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

⁹⁴ Ibid

4.0 Way Forward

In order to foster energy justice in Africa, there is need to enhance universal access to modern energy sources of energy including electricity. Without electricity in Africa, women and girls have to spend hours fetching water, clinics cannot store vaccines for children, many schoolchildren cannot do homework at night, and people cannot run competitive businesses therefore affecting socio-economic development in the continent⁹⁵. It is therefore imperative for African countries to accelerate investments in energy and implement policies geared towards ensuing universal access to electricity⁹⁶. It has been pointed out that energy access for all is one of the key drivers of inclusive growth since it creates opportunities for women, youths, children both in urban and rural areas⁹⁷. African countries should thus prioritize fostering access to energy including promoting rural electrification programs in order to ensure equity and fairness in respect to energy access⁹⁸.

There is also need accelerate progress towards clean cooking solutions in Africa. According to the United Nations, slow progress towards clean cooking solutions is of grave concern both in Africa and across the globe, affecting both human health and the environment, and if the world does not meet its energy goals by 2030, nearly a third of the world's population mostly women and children will continue to be exposed to harmful household air pollution⁹⁹. It has been asserted that burning biomass for cooking increases Africa's greenhouse gas emissions and raises concerns about achieving commitments to reduce carbon emissions to meet the Paris Agreement goals on climate change¹⁰⁰. Measures can be put in place to enhance access to clean energy sources for purposes of cooking such as embracing improved cooking stoves and reducing the cost

⁹⁵ United Nations., 'SDG 7: Affordable and Clean Energy.' Op Cit

⁹⁶ International Energy Agency., 'Access to Electricity.' Op Cit

⁹⁷ Africa Development Bank Group., 'Light Up and Power Africa - A New Deal on Energy for Africa.' Op Cit

⁹⁸ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

⁹⁹ United Nations., 'SDG 7: Affordable and Clean Energy.' Op Cit

¹⁰⁰ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

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of Liquefied Petroleum Gas (LPG) to promote its affordability¹⁰¹. Electricity is another option for cooking that is worth considering, but this will depend on its access, affordability and reliability of supply in Africa¹⁰².

It is also of fundamental importance for African countries to embrace and fast track the uptake of green sources of energy such as renewable energy technologies¹⁰³. It has correctly been observed that Africa has immense potential for renewable energy including wind, solar, hydro, bioenergy, ocean tidal waves, geothermal among other renewables¹⁰⁴. However, despite Africa's renewable energy potential, only a fraction of it is being currently employed¹⁰⁵. Renewable energy technologies have become increasingly important as the world faces the challenge of mitigating the negative impacts of climate change and reducing the dependence on finite and polluting fossil fuels¹⁰⁶. The use of renewable energy sources has been recognized as a key factor in promoting Sustainable Development, which aims to meet the needs of the present generation without compromising the future¹⁰⁷. Green energy sources including renewable energy offers immense opportunities and advantages for Africa. Green energy is important for the environment since it replaces the negative effects of fossil fuels with more environmentally-friendly alternatives¹⁰⁸. Green energy is derived from natural resources and thus renewable and clean, meaning that it emits no or few greenhouse gases and is

¹⁰¹ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

¹⁰² United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

¹⁰³ Muigua. K., 'Adopting Green Energy for a Bright Tomorrow.' Available at <https://kmco.co.ke/wp-content/uploads/2023/06/Adopting-Green-Energy-for-a-Bright-Tomorrow.pdf> (Accessed on 23/11/2023)

¹⁰⁴ Africa Union., 'Agenda 2063: The Africa we Want.' Op Cit

¹⁰⁵ Africa Development Bank Group., 'Light Up and Power Africa – A New Deal on Energy for Africa.' Op Cit

¹⁰⁶ Verma. A., 'The Role of Renewable Energy Technologies in Sustainable Development.' Available at <https://timesofindia.indiatimes.com/blogs/voices/the-role-of-renewable-energy-technologies-in-sustainable-development/> (Accessed on 23/11/2023)

¹⁰⁷ Ibid

¹⁰⁸ TWI Global., 'What is Green Energy? (Definition, Types and Examples).' Available at <https://www.twi-global.com/technical-knowledge/faqs/what-is-green-energy> (Accessed on 23/11/2023)

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often readily available¹⁰⁹. Africa therefore has the capacity to build a cleaner and greener future by increasing access to clean energy through sustainable and environment-friendly solutions such as green and renewable sources of energy in order to ensure that the region is not left behind as the world moves towards zero-emission fuels¹¹⁰. Exploiting the vast reserve of renewable energy sources on the Continent could help increase electricity generation capacity in the region, helping the transition to low-carbon or zero-emission energy sources¹¹¹. It is therefore necessary for African countries to increase investments in renewable energy in order to fast track the Continent's energy transition. It is also imperative to promote sound environmental management and conservation in order to enhance the adoption of green energy in Africa¹¹². Conservation of the environment ensures that certain renewable sources of energy such as water used for the generation of hydroelectricity is not exhausted due to the depletion of forests and other water catchment areas¹¹³.

Another key measure towards fostering energy justice in Africa is ensuring efficiency, reliability and affordability of energy. It has been observed that access to a reliable and quality energy supply is vital to the economic development of any country¹¹⁴. However, most African countries are faced with the problem of limited or unreliable electricity a situation which often affects socio-economic development¹¹⁵. It is therefore vital to promote reliability in the energy sector in Africa. It has been argued that decentralization of the energy sector in Africa through measures such as distributed generation is able to provide enhanced energy and more democratized access, with improved reliability and

¹⁰⁹ Ibid

¹¹⁰ United Nations Conference on Trade and Development., 'Improving Energy Access Key to Meeting Development Goals in Africa.' Available at <https://unctad.org/news/improving-energy-access-key-meeting-development-goals-africa> (Accessed on 23/11/2023)

¹¹¹ Ibid

¹¹² Muigua. K., 'Adopting Green Energy for a Bright Tomorrow.' Op Cit

¹¹³ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

¹¹⁴ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

¹¹⁵ Ibid

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efficiency¹¹⁶. In addition, since security and resilience issues are easier to be addressed due to the local and reduced-order size of these schemes, decentralized schemes can also encourage equity, inclusivity, information, accountability, and adaptability of energy systems, which also work towards the mitigation of climate-related issues¹¹⁷. African countries should therefore consider embracing decentralized energy schemes in order to enhance energy efficiency and reliability. Further, it is imperative to make the costs of energy including electricity and clean cooking facilities affordable to all people in order to foster energy justice in Africa¹¹⁸. According to the United Nations, our everyday life depends on reliable and affordable energy¹¹⁹. African countries can accelerate the transition to an affordable, reliable, and sustainable energy system by investing in renewable energy resources, prioritizing energy efficient practices, and adopting clean energy technologies and infrastructure¹²⁰. The International Energy Agency calls upon decision makers in the energy sector to accelerate access related development plans and programs that address affordability issues, supporting decentralised solutions and productive use of energy, and national electrification plans in order to achieve universal access to reliable, affordable and modern energy¹²¹.

Finally, it is also necessary embrace and foster public participation in the energy sector in order to guarantee energy justice¹²². It has been asserted that sustainability in the energy sector also calls for the identification of the energy needs of consumers in a country and ensuring that the needs are met in a manner that is efficient¹²³. Public participation can ensure that local concerns are considered during the implementation of

¹¹⁶ Lup. A., 'Sustainable Energy Technologies for the Global South: Challenges and Solutions Toward Achieving SDG 7.' *Environmental Science: Advances.*, No. 2 of 2023., 570-585

¹¹⁷ Ibid

¹¹⁸ Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit

¹¹⁹ United Nations., 'SDG 7: Affordable and Clean Energy.' Op Cit

¹²⁰ Ibid

¹²¹ International Energy Agency., 'Access to Electricity.' Op Cit

¹²² Muigua. K., 'Adopting Green Energy for a Bright Tomorrow.' Op Cit

¹²³ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

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energy projects in order to ensure efficiency and reliability¹²⁴. Public participation enhances energy justice by encourage equity, inclusivity, access to information, accountability, and adaptability of energy systems¹²⁵. Therefore, governments and the private sector should embrace public participation in energy decision making such as when undertaking energy projects in order to ensure acceptability and social sustainability of such projects¹²⁶. Community consultation through meaningful public participation is important to ensure that there is public acceptance and cooperation in green energy projects in Africa. Public participation is an essential component of environmental governance including investments in green energy as envisaged under the *Rio Declaration* which acknowledges that environmental issues are best handled with the participation of all concerned citizens, at the relevant level¹²⁷.

Through the foregoing among other measures, energy justice will be fostered in Africa.

5.0 Conclusion

Energy is an essential input to economic activity, with access to reliable and affordable energy supply fundamental for social and economic development¹²⁸. However, the energy sector in Africa raises critical issues such as access to clean, modern and affordable energy services for the poor and sustainability in its environmental, financial, and fiscal aspects¹²⁹. Despite the progress made towards fostering access to energy in Africa, energy justice concerns are still prevalent as evidenced by the lack of access to electricity and clean cooking facilities, and challenges of efficiency, reliability and affordability in the

¹²⁴ Lup. A., 'Sustainable Energy Technologies for the Global South: Challenges and Solutions Toward Achieving SDG 7.' Op Cit

¹²⁵ Ibid

¹²⁶ Muigua. K., Wamukoya. D & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

¹²⁷ United Nations General Assembly., 'Report of the United Nations Conference on Environment and Development: Rio Declaration on Environment and Development.' Op Cit

¹²⁸ World Trade Organization., 'Energy Services.' Op Cit

¹²⁹ Muigua. K., Wamukoya. D., & Kariuki. F., 'Natural Resources and Environmental Justice in Kenya.' Op Cit

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energy sector in the Continent¹³⁰. There is need to foster energy justice in Africa in order to achieve SDG 7 which seeks ensure universal access to affordable, reliable, sustainable and modern energy for all¹³¹. This can be achieved through enhancing universal access to modern energy sources of energy including electricity in Africa, accelerating progress towards clean cooking solutions in Africa, embracing and fast tracking the uptake of green sources of energy including renewable energy technologies, ensuring efficiency, reliability and affordability of energy and embracing and fostering public participation in the energy sector¹³². Fostering energy justice in Africa is an ideal that needs to be achieved for Sustainable Development.

¹³⁰ United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

¹³¹ United Nations., 'Transforming Our World: The 2030 Agenda for Sustainable Development.' Op Cit

¹³² United Nations., 'Advancing SDG 7 in Africa.' Op Cit; See also Muigua. K., 'Towards Energy Justice in Kenya.' Op Cit; and United Nations Conference on Trade and Development., 'Commodities at a Glance: Special Issue on Access to Energy in Sub-Saharan Africa.' Op Cit

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