



# YOUTH INCLUSION IN GREEN TECHNOLOGY IN AFRICA

In partnership with



A policy landscape analysis  
of Nigeria, Kenya and Ghana

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### Acknowledgements and Citation

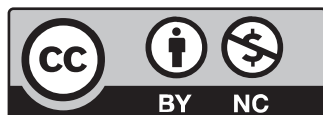
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# Acronyms and abbreviations



<b>APRI</b>	Africa Policy Research Institute
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>CSA</b>	Climate-smart agriculture
<b>CSAT</b>	Climate-smart agricultural technology
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organisation
<b>GHG</b>	Greenhouse gas
<b>IEA</b>	International Energy Agency
<b>ILO</b>	International Labour Organisation
<b>NERC</b>	Nigerian Electricity Regulatory Commission
<b>NITDA</b>	National Information Technology Development Agency
<b>OECP</b>	Organisation for Economic Co-operation and Development
<b>PEP</b>	Partnership for Economic Policy
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNDP</b>	United Nations Development Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

# Executive summary



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As concerns over the global climate grow, a consensus has emerged on the need to achieve net-zero emissions by 2050 in order to avoid irreversible climate impact. African countries, though they emit the least carbon, have set ambitious net-zero targets, and have aligned their decarbonisation plans with national development priorities. These plans are largely based on a significant increase in the deployment and utilisation of clean technology solutions, especially in high carbon-emitting sectors such as energy, agriculture and transport, which together account for over 50% of the continent's emissions. Developing these solutions to meet the proposed targets sustainably will depend on the pace and scale of the development of Africa's nascent green tech sector and on harnessing the potential of its youth.

However, this will not be possible without incentivising investment in the green tech sector and implementing a policy, legal and regulatory framework that encourages opportunities for youth participation in its development. A sustainable climate transition in Africa will be dependent on localising green tech development, fostering local resilience and creating opportunities for youth across the green tech value chain. If successful, this promises immediate benefits in terms of socio-economic development and Africa's participation in the global green tech race. The development of these technologies and the opportunities that accompany them will also curb the increasing level of migration and brain drain of its youth.

This policy brief analyses the enabling environment for green tech development in selected African countries, with emphasis on the opportunities for the continent's teeming youth workforce. It assesses the policy and regulatory landscape using a combination of top-down and bottom-up policy analysis of solar mini-grids (renewable energy) in Nigeria, e-mobility in Kenya and climate-smart agriculture in Ghana. It identifies areas of alignment, gaps, bottlenecks and opportunities between policies and government plans related to climate, youth, technology and development. The renewable energy, technology and agriculture sectors were chosen for this study due to their identification as Africa's primary green tech sectors in a scoping report on green tech policies and youth employment. These sectors demonstrate significant potential for both youth employment and entrepreneurship, and are central to green tech research, policies and funded programmes, all of which are interconnected. Nigeria, Kenya and Ghana were selected due to their strong focus on green tech policy and its implementation. This selection aligns with the findings of a technological needs assessment conducted in African countries, which identified solar energy, transport and agricultural technologies as priority areas. Consequently, a thorough understanding of these sectors in these specific countries can offer valuable insights and lessons that can be applied to other countries aiming to develop their green tech sectors. The cross-national and cross-sectoral approach allowed for gathering diverse data on policy trends that influence youth employment outcomes.

The results show that the promotion of green tech is often compartmentalised in specific ministries and that there is inadequate interministerial cooperation. It also indicates policy incoherence, poor planning and misaligned stakeholder interests as underlying challenges in green tech development. The misalignment between youth, climate and development policy targets and goals, overlapping and, at times, conflicting institutional mandates, and multiple points of interface with government all present challenges to green tech advancement on the continent. These policy gaps are worsened by the exclusion of young people from the policy-making process. Furthermore, policy documents usually give gender mainstreaming greater weight than youth inclusion.

This is not to downplay efforts by governments to promote youth participation in green tech development. Many of them recognise its critical significance. Countries such as Nigeria, Kenya and Ghana have set up Climate Innovation Centres to promote the incubation and growth of green tech and have integrated capacity building and technology transfer as part of national climate projects with development partners. They are also increasingly recognising the role of youth in the climate transition in their policies for youth-focused climate initiatives by African countries. However, there is significant room for improvement in the form of a supportive enabling environment to catalyse growth and investment in green tech sectors.

This policy brief describes these sectors and makes recommendations for how the enabling environment specific to the policy and regulatory landscape for green tech development and opportunities for youth can be refined. This will make the environment more inclusive, provide it with stronger political will and ensure policy coherence, coordination and buy-in across the respective governments, as well as alignment with national development goals and climate commitments.



# 1. Introduction



As the world grapples with the escalating impacts of climate change, the intersection of green technology (green tech) and Africa's budding youth potential presents a transformative opportunity for the continent's climate transition. Africa has a young population, which is projected to exceed 740 million by 2050.<sup>1</sup> The continent has the potential to harness this demographic to drive its nascent green technology sector. The global need to achieve net-zero emissions by 2050 has prompted many African countries to set ambitious climate targets which are largely based on the deployment of clean technology solutions, particularly in high carbon-emitting sectors such as energy, agriculture and transport, which collectively account for over 50% of the region's emissions.

Green tech applies scientific knowledge and innovation to create products, processes and services that are climate friendly and resource efficient.<sup>2</sup> It encompasses a wide range of innovations aimed at promoting environmental sustainability, including renewable energy, sustainable agriculture and waste management. For example, solar mini-grids, e-mobility solutions and climate-smart agricultural technologies (CSAT) are emerging as key green tech solutions for decarbonising the energy, transportation and agricultural sectors across Africa. These solutions not only contribute to reducing emissions but also create substantial employment opportunities for youth and opportunities for innovation. It is estimated that investments in renewable energy alone could generate 4 million jobs by 2030 across Africa, highlighting the significant role that green tech can play in promoting youth employment.<sup>3</sup>

The involvement of youth in the green tech sector is vital. Young people bring fresh perspectives and innovative ideas that are essential for driving technological advancements and fostering entrepreneurship. Their familiarity with digital tools and platforms positions them to leverage technology in creating sustainable solutions tailored to local contexts. These are critical in the development of solutions towards the race to net zero. Additionally, youth employment is a prominent theme in Africa's development discourse, as the continent faces significant challenges in providing productive and decent jobs for its youth. For instance, as of 2023, 53 million youth (one in five, or 29%) in sub-Saharan Africa were NEET (not in employment, education or training). This figure is just above the global youth NEET rate of 20.4%.<sup>4</sup> Relatedly, nearly three in four (71.7%) young adult workers (aged 25 to 29) were in the form of work deemed 'insecure'.<sup>5</sup> If developed with the proper youth considerations, green tech can tackle these youth employment problems. It is estimated that 52% of African youth are likely to consider emigrating in the next few years, citing economic hardship as the top reason.<sup>6</sup>

Green tech in Africa simultaneously addresses the challenges of climate change and employment, while increasing economic productivity. If done right, developing and scaling these technologies will create jobs to address pressing socio-economic challenges while advancing the region's

climate ambitions. This dual focus on climate action and youth employment will position Africa as a global leader in the green economy and address critical development challenges. For instance, Africa's renewable energy potential is massive: it is home to 60% of the world's prime solar resources. Yet, due to limited investment in renewable energy and heavy reliance on the Global North for technology, the continent holds only 1% of installed solar PV capacity.<sup>7</sup> Solar PV, which is already the most affordable power source in many African regions, is expected to surpass all other energy sources continent-wide by 2030.<sup>8</sup> Alongside solar, other renewables such as wind, hydropower and geothermal are expected to constitute over 80% of new power generation capacity by the same year.<sup>9</sup>

This renewable energy boom presents a unique opportunity to integrate green tech with the broader vision of green industrialisation – leveraging renewable energy to drive industrial growth, create jobs and spur economic transformation across the continent. On the other hand, investments in renewable energy are especially impactful in generating employment, creating three times as many jobs per dollar as fossil fuels, according to the Sustainable Energy for All (SE4ALL) Renewable Energy Manufacturing Initiative (REMI).<sup>10</sup> This opens up vast opportunities for youth engagement, particularly in the development of renewable energy infrastructure, the manufacturing and maintenance of green technologies, and the operation of renewable-energy-powered industrial parks. The latter have the potential to serve as hubs of productivity and innovation, driving job creation while reducing poverty. However, realising these opportunities requires a conducive policy, legal and regulatory framework that encourages youth participation in the green tech sector. Governments will need to create an enabling environment that incentivises investment in youth development in the green tech sector while addressing barriers such as access to finance and skills development.

This policy brief analyses the policy and regulatory environment for green tech development in Nigeria (solar mini-grids), Kenya (e-mobility) and Ghana (climate-smart agricultural technology). It focuses on coherence, policy gaps and opportunities for increasing youth participation in these countries through a combination of top-down and bottom-up policy analysis. The renewable energy (solar mini-grids), transport and agriculture sectors were chosen for this study due to their identification as Africa's primary green technology sectors in a scoping report on green technology policies and youth employment.<sup>11</sup> These sectors demonstrate significant potential for both youth employment and entrepreneurship, and are central to green tech research, policies and funded programmes, all of which are interconnected. Nigeria, Kenya and Ghana were selected due to their strong focus on green tech policy and its implementation. This selection aligns with the findings of a technological needs assessment which identified solar energy, transport and agricultural technologies as priority areas across Africa.<sup>12</sup> Consequently, a thorough understanding of these sectors in these specific countries can offer valuable insights and lessons that can be applied to other countries aiming to develop their green tech sectors. The cross-national and cross-sectoral examination approach allowed for gathering diverse data on policy trends that influence youth employment outcomes. The study identifies areas of alignment, gaps, bottlenecks and opportunities within policies related to climate change and youth engagement and recommends actions to foster a vibrant green tech ecosystem that empowers African youth.

## 2. The emerging green tech landscape in Africa



Driven by a unique combination of local innovation, international investment and a growing recognition of the need for sustainable practices, the green tech sector in Africa is rapidly evolving. Africa's abundant natural resources, young population and increasing commitment to sustainable development position the continent to capitalise on green technologies for transformative change.<sup>13</sup> This section explores key segments of the green tech market in the context of three sub-Saharan African nations: solar mini-grids in Nigeria, e-mobility in Kenya and climate-smart agriculture (CSA) in Ghana.

### 2.1 Solar mini-grids in Nigeria

In the African energy sector, clean electrification solutions are becoming increasingly popular as a solution for bridging the huge energy access gap. Across the continent, an estimated 600 million people, approximately 53% of the population, live without access to electricity.<sup>14</sup> Among these solutions, solar mini-grids stand out as decentralised electrical systems that provide electricity to communities through renewable solar energy technologies. While mini-grids can utilise various energy sources, solar mini-grids specifically harness solar energy and are one of the most common decentralised renewable energy solutions for community electrification. These systems are rapidly emerging as a reliable solution for achieving energy access. Between 2019 and 2021, the number of installed mini-grid connections in Africa nearly doubled, rising from approximately 40,700 to over 78,000.<sup>15</sup>

The International Energy Agency (IEA) estimates the number of people with access to electricity through a solar home system in sub-Saharan Africa increased by about 25 million since 2019, topping 45 million in 2022.<sup>16</sup> Countries such as Kenya and Nigeria lead in the deployment of these solutions in East and West Africa respectively. These decentralised clean energy systems not only provide energy access but also create significant employment opportunities, as well as budding, local, clean energy innovation ecosystems, with hubs such as the World Bank-funded Country Climate Innovation Centres serving green tech development. According to the International Renewable Energy Agency (IRENA), the renewable energy sector alone could create 4 million jobs across Africa by 2030 and 8 million jobs by 2050.<sup>17</sup>

Nigeria's energy sector has been constrained by technical and non-technical challenges that have inhibited the delivery of reliable power to its approximately 228 million population. With over 50% of Nigerians without electricity supply access, Nigeria represents Africa's largest potential market for off-grid electrification. With an unreliable national grid, Nigerians spend an estimated NGN 5 trillion (approximately USD 14 billion) annually on small petrol or diesel generators, which are costly and emit harmful pollutants locally and globally.<sup>18</sup>

To address this energy access deficit, numerous policies and public-private initiatives are being implemented to encourage investment in the off-grid clean energy sector and promote the adoption of decentralised clean energy solutions. In 2020, the World Bank valued the global off-grid solar market at USD 1.75 billion annually, serving 420 million users.<sup>19</sup> In Nigeria, an estimated 20 GW of small diesel-powered generators are in daily operation – five times the capacity of the national grid.<sup>20</sup> According to the a USAID report, the annual market potential for off-grid clean energy solutions in Nigeria is USD 8 billion for mini-grids and USD 2 billion for solar home systems.<sup>21</sup>

Over the past decade, significant efforts by the government and private sector have focused on harnessing Nigeria's renewable energy potential, particularly in the off-grid sector. Decentralised renewable energy, especially off-grid solar, has demonstrated potential to bridge the country's energy access gap. A key outcome of this has been a significant increase in the number of opportunities across the value chain for green tech development for electrification, with the deployment of solar mini-grids being one of the most common. Nigeria's off-grid sector is now recognised as the largest commercially viable and fastest-growing energy access market globally, accounting for over 50% of solar appliance system (SAS) sales in West Africa and driving regional growth.<sup>22</sup>

This has led to a boom in locally grown clean tech companies led by young entrepreneurs. There are now over 200 local and international solar companies active in the country, up from fewer than 20 a decade ago.<sup>23</sup> This growth has also created a whole new job market across the value chain for hard skills such as installation, maintenance, sales and R&D, and soft skills such as clean energy finance, energy law, consultancies, and gender and social inclusion. This success is largely driven by the private sector, supported by government initiatives to improve the enabling environment.

## 2.2 E-mobility in Kenya

In Kenya, the transport sector, particularly road transportation, is one of the main sources of CO<sub>2</sub> emissions. This is due to the predominant use of fossil fuels for internal combustion engines (ICEs). To ensure a sustainable future for transportation globally, African nations are increasingly embracing e-mobility, which involves the use of electric vehicles (EVs) as a sustainable alternative to traditional fossil fuels. The adoption of e-mobility is expected to significantly reduce greenhouse gas (GHG) emissions from the transportation sector in sub-Saharan Africa, potentially cutting emissions by up to 24% by 2040.<sup>24</sup> The e-mobility industry in Ethiopia, Kenya, Nigeria, Rwanda and Uganda is expected to grow significantly, with projections suggesting that EV sales could reach 340,000 to 820,000 units by 2025 and expand to 3.8 to 4.9 million units by 2040.<sup>25</sup> Electric two-wheelers are expected to play a pivotal role in this growth, driven by their affordability and manoeuvrability.

In Africa, there is growing interest from both governments and the private sector in leveraging renewable energy to boost the expansion of e-mobility. This interest has also led to significant investments in e-mobility infrastructure. In East Africa, countries such as Kenya, Tanzania and Uganda have introduced new policies with tax incentives to promote the adoption of e-mobility. For instance, Kenya aims to achieve its transport sector goal of reducing emissions by 3.46 MtCO<sub>2</sub>e against the baseline in 2030.<sup>26</sup> To this end, the country has launched government initiatives that promote EV uptake through publicity campaigns and incentives for buyers. Additionally, it has introduced a reduced EV charging electricity tariff and exempts e-motorcycles, e-buses and e-bicycles from VAT.

Kenya's transportation sector is evolving rapidly in accordance with growth in the deployment of electric-powered two-, three- and four-wheelers throughout East Africa. As of 2022, electric buses and taxis have become an integral part of Nairobi's public transport system. With an estimated 350 EVs registered in Kenya, these developments underscore the emergence of a nascent e-mobility market on the continent.<sup>27</sup> The market has seen the recent entry of over 50 startups led by young CEOs, with USD 26 million in new funding in 2021.<sup>28</sup> This budding and vibrant e-mobility startup scene is driving a transition in the transport sector from ICE to e-mobility solutions. This is largely due to the enabling environment and public-private partnerships (PPPs) that have been crucial in providing finance and technical assistance.

Kenya is actively advancing its e-mobility sector through several ongoing programmes and initiatives. The government, in partnership with development partners, is developing knowledge products to build public interest in e-mobility. These include fact sheets and brochures that provide insights into Kenya's progress in e-mobility, highlight key developments and address common questions. The following points summarise the key initiatives of the Kenyan government.

- **Public and private sector engagement:** Continuous engagement between public and private stakeholders is underway to identify barriers to e-mobility adoption and implement corrective measures. This collaborative approach aims to foster a supportive environment for EVs.
- **Policy incentives:** The Kenyan government has introduced policy incentives to encourage the adoption of EVs. For instance, in the Finance Bill of 2019, the excise duty on EVs was reduced from 20% to 10%. Additionally, the Kenya Bureau of Standards, with support from partners like Germany's GIZ and the UN Environment Programme, has developed and adopted 21 standards for EVs, covering safety, performance and power consumption.<sup>29</sup>
- **Pilot projects:** Pilot projects are being conducted in collaboration with organisations like the UN Environment Programme. For example, a pilot involving the deployment of 50 electric motorcycles in Kisumu aims to test and refine e-mobility solutions in urban settings. Kenya Power is also involved in these initiatives, focusing on expanding EV charging infrastructure across the country.<sup>30</sup>
- **Targets and ambitions:** Kenya aims for at least 5% of all registered vehicles to be electric by 2025. To support this goal, the government is working to establish a comprehensive e-mobility framework, including regulations and infrastructure development. With over 90% of Kenya's electricity coming from renewable sources, the country's transportation sector is well positioned to make the clean energy transition.<sup>31</sup>

## **2.3 Climate-smart agriculture in Ghana**

Driven by innovative and sustainable practices, the agriculture and food security sector is undergoing a significant transformation. Climate-smart agriculture (CSA) is a key focus, incorporating techniques such as agroforestry, improved soil management and efficient water use to boost productivity and resilience to climate change impacts.

The Food and Agriculture Organization (FAO) defines CSA as 'agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals'.<sup>32</sup> CSA therefore involves adopting technologies, practices and policies that help farmers optimise their inputs and

outputs while managing climate-related disruptions. This approach spans the entire agricultural value chain – from planting and harvesting to storage, preservation, marketing and agro-processing. For example, solar-powered irrigation systems improve planting efficiency, solar dryers enhance preservation, digital technologies aid in crop monitoring to boost yields and weather-index insurance protects against droughts or floods.

CSA has been actively promoted among Ghanaian farmers as a means of adapting to climate change. The key benefits reported include improved soil fertility, higher yield, improved household income, climate resilience (such as overcoming the effects of drought and extreme temperatures) and food security. Ghana is also pioneering the use of blockchain technology for land digitalisation, which helps farmers access credit and improve land management. These innovations enhance agricultural productivity and contribute to sustainable development by reducing the environmental footprint of farming practices. These developments are not only crucial for reducing GHG emissions but also play a vital role in driving sustainable technological development in the region, creating jobs for youth and catalysing much-needed investment in Africa's green tech sector. However, challenges such as the lack of government support and credit access, as well as high illiteracy rates among smallholder farmers, hinder broader adoption.

The Ghanaian government has initiated several key CSA initiatives as part of its national development agenda. These initiatives are outlined in the Climate-Smart Agriculture Investment Plan (CSAIP), developed under the Adaptation of African Agriculture (AAA) programme. The following points summarise the key initiatives of the Ghanaian government.

- **Development of the CSAIP:** This plan aims to boost crop resilience and enhance yields for nearly 1.7 million beneficiaries and their families, helping them adapt to climate change. The plan was developed through strong government partnership and stakeholder engagement, with funding and technical support from the World Bank.
- **Prioritised investments:** Stakeholders have identified and prioritised a set of nine investments and actions needed to enhance crop resilience and yields. These investments were selected from an initial list of 22 proposed CSA priorities through an iterative, qualitative and quantitative prioritisation process.
- **National and regional investments:** The CSAIP includes two national-scale investments and seven regional climate-smart crop and animal investments. National investments focus on providing information, capacity building, infrastructure and national-level services to enable CSA practices across Ghana. Regional investments are tailored to enhance productivity, adaptation and resilience, and to reduce GHG emissions in specific crops and animals across different regions.
- **Stakeholder engagement and capacity strengthening:** The development process of the CSAIP involves extensive stakeholder engagement, including government ministries, institutions, research organisations, farmer groups and international development organisations. This engagement supports capacity strengthening and provides key elements for programme design and implementation.
- **Climate modelling and impact assessment:** Climate modelling has been used to assess the potential impacts of climate change on key crops. For example, maize is projected to experience

significant yield losses, while crops like rice and tubers show fewer impacts. Investments are focused on promoting practices that support climate-resilient crops.

- Promotion of CSA practices: The government promotes CSA practices that support resilience, particularly for crops like cacao which are crucial for Ghana's economy. Investments are also aimed at enhancing yields and reducing GHG emissions in livestock and other crops.



### 3. Assessment of policy and regulatory landscape



The purpose of legal, regulatory and policy frameworks is to guarantee that businesses operate equitably and openly while also ensuring the protection of consumers against any potential harm. Importantly, these frameworks enable more investments and catalyse opportunities for entrepreneurs, innovators and business ecosystems to develop and thrive. A focus and analysis on policy and regulations related to innovation ecosystems is essential to effectively tackle the obstacles and difficulties that impede the development and dissemination of green technology, such as limited access to finance, skills, markets, information and technology. Principal actors within regulatory frameworks include policymakers, regulators and other entities responsible for implementing regulatory functions.<sup>33</sup> These actors coordinate to promote coherence as a foundation for green growth.<sup>34</sup> This involves incorporating the priorities of youth employment and green jobs into broader national economic development plans at all levels.

To understand the green tech and youth employment policy landscape, this policy brief utilises top-down and bottom-up approaches to policy analysis. These two approaches are commonly used in policy analysis to comprehend and evaluate policies, programmes or initiatives. Specifically, we focus on the goals of the policies in relation to green tech and youth employment. This requires a multi-goal analysis, which assumes that policies are intended to fulfil certain stated goals which may sometimes be vague and/or communicated in terms that are not amenable to precise measurement.<sup>35</sup>

Policy tools are essential for guiding international efforts and facilitating the implementation of climate change mitigation and adaptation strategies. Following the United Nations Framework Convention on Climate Change (UNFCCC) policy tools category, the chosen policy instruments were limited to supportive actions and regulatory instruments. This was because many green tech sectors in Africa are new and often require novel regulations, technologies and standards, thereby eliciting government efforts to institute benchmarks and provide supportive action for research and innovation.

The coherence of policies for this analysis was assessed using the following approach:

- The identification of relevant policies and strategies that relate to the policy tools for green tech (solar mini-grids, e-mobility and climate-smart agriculture,) and youth employment for the three countries (Nigeria, Kenya and Ghana).
- Evaluation of the extent to which selected policies align with each other and with the development and creation of green jobs for youth.

- Examination of how the selected policies interact with each other, especially green tech policies and national youth employment policies, to produce intended or unintended effects.

Here we provide an overview of the policy and regulatory landscape in Nigeria, Kenya and Ghana.

### 3.1 Nigeria

The Rural Electrification Agency (REA) of Nigeria, established in 2005 under the Electric Power Sector Reform Act, serves as an implementing agency of the Federal Government, operating under the Federal Ministry of Power. Its primary mission is to provide reliable electricity to rural and unserved communities across Nigeria, a country with a population of approximately 214 million, of whom only about 60% have access to electricity.<sup>36</sup> The REA's work includes the implementation of programmes like the Nigeria Electrification Project (NEP), which focuses on providing electricity to households; micro, small and medium enterprises (MSMEs); educational institutions; and healthcare facilities using distributed renewable energy solutions.

Additionally, the agency supports initiatives such as the Energizing Education Programme (EEP), which aims to electrify universities and teaching hospitals with solar hybrid power systems, enhancing academic excellence and gender inclusion in STEM (science, technology, engineering and mathematics) fields. Through these efforts, the REA is committed to creating a sustainable future for Nigeria by increasing access to clean energy, reducing energy poverty and promoting economic development in rural communities. The combination of regulatory frameworks, energy policy, national strategies and programmes, international donor commitments, and foreign and indigenous investment together create the enabling environment for increased investments, technical support, improved quality standards and simplified end-user payments in Nigeria's off-grid sector.

#### 3.1.1 Policy tools for renewable energy

Table 1 maps out relevant policies and national plans for renewable energy (solar mini-grids) and youth engagement.

**Table 1**  
Policy mapping on renewable energy and youth engagement

Category	Document	Description	Youth or youth-related policy provision
Renewable energy	Nigeria Electricity Act, 2023	The Act repeals the Electric Power Sector Reform Act No. 6, 2005, and enacts the Electricity Act, 2023, to consolidate the laws relating to the Nigerian electricity supply industry; provide a comprehensive legal and institutional framework for the power sector in Nigeria in the areas of electricity generation, transmission, system operation, distribution, supply, trading and enforcement of consumer rights and obligations; provide for a holistic, integrated resource plan and policy that recognises all sources for generation, transmission and distribution of electricity, including the integration of renewable energy into Nigeria's energy mix; and attract investment.	The Act offers engineering, technical and other training or certification programmes in collaboration with both foreign and local institutions for professionals and practitioners in the power sector. It also serves as a training centre and finishing school for engineering graduates under the National Power Training Institute of Nigeria.

Category	Document	Description	Youth or youth-related policy provision
	Renewable Energy Masterplan (REMP), 2005 (updated 2012)	The overall objective of the REMP is to articulate a national vision, targets and a roadmap for addressing key development challenges facing Nigeria through the accelerated development and exploitation of renewable energy. In particular, it provides a framework for the integration of renewable energy into Nigeria's energy mix, aiming for at least 10% renewable energy by 2025.	Under the National Solar Energy Programme, the plan includes an awareness and public education workshop on solar thermal and solar PV technologies, specifically targeting female youth groups, alongside other stakeholder groups.
	National Renewable Energy and Energy Efficiency Policy (NREEEP), 2015	Sets out the Nigerian government's blueprint to harness the country's renewable energy and energy efficiency resources in driving sustainable development across the country. Developed in line with the country's national energy policy, the NREEEP outlines the government's programmes and measures for deploying renewable energy and energy efficiency technologies and practices towards facilitating Nigeria's green transition.	The policy does not specifically address youth or youth-centred initiatives. However, one of its core objectives is to stimulate growth in green employment generation and training programmes through an expanded renewable energy industry.
	National Renewable Energy Action Plan (NREAP), 2015–2030	Sets out the implementation strategy for the NREEEP (2015) on renewable energy.	The policy does not address any youth-centred initiatives. However, it emphasises technical and entrepreneurial training to build the capacity of national companies, installers and producers.
	National Energy Efficiency Action Plan (NEEAP), 2015–2030	The plan emphasises the effective and efficient use of energy and proposes major areas to be considered for energy efficiency and conservation: residential sector, industry, transportation, services/commercial sector, agriculture and energy-efficient building designs.	The plan only captures the need to organise special education programmes for youth in schools on the advantages and benefits of efficient on-grid and off-grid lighting.
	Rural Electrification Strategy and Implementation Plan (RESIP), 2016	Provides the implementation framework and measures for driving rural electrification across the country by means of on-grid and off-grid energy solutions, including productive uses of energy.	The plan highlights the need for significant capacity building across the Nigerian energy sector, which is essential to enable local industry to play a larger role in the supply chain, including materials, manufacturing, construction and operation of assets. This effort may involve collaboration with universities, industry, research institutes and training organisations.
	Mini-Grid Regulation, 2023	Overarching document governing the development of mini-grids (isolated or interconnected) generating between 0kW and 1MW of generation capacity per site.	There is no mention of youth-focused initiatives.
	Sustainable Energy for All – Action Agenda, 2016	Provides a simplified summary of Nigeria's action agenda for the Sustainable Energy for All Initiative. It provides context to the action agenda, the legal foundation, the targets and measures in the policy document, the gaps, the incentives, the key provisions, the key stakeholders, as well as related regulatory and policy documents and the status of implementation.	There is no mention of youth-focused initiatives.

Category	Document	Description	Youth or youth-related policy provision
	National Action Plan on Gender and Climate Change, 2020	Provides the implementation framework and measures for gender mainstreaming in national climate change strategies and actions.	The plan, including the energy transition framework, is youth-inclusive.
	Nigeria's Nationally Determined Contribution (NDC), 2021	Nigeria's NDC shows its national commitment towards embracing sustainable development measures that limit the rate of global warming and negative impacts of climate change. It details the country's climate targets and measures to be adopted in actualising them.	The NDC recognises the pivotal role of youth in the NDC process, reaffirming its commitment to Article 6 of the Framework Convention and Article 12 of the Paris Agreement. A key provision of the NDC process is the creation of green jobs, particularly in the installation and servicing of improved cookstoves.
	Action Plans for Nigeria's NDC	Sectoral action plans for priority sectors: agriculture, power generation, industrial energy efficiency, oil and gas, and transport.	The plan is youth-inclusive. One of its key priorities is creating significant opportunities and jobs for youth by leveraging the rapid emergence of numerous off-grid solar initiatives, many of which are led by young entrepreneurs who think differently and embrace innovation.
	National Climate Change Policy, 2021–2030	Sectoral and cross-sectoral strategic policy statements and actions for the management of climate change within Nigeria's pursuit for climate-resilient sustainable development.	The policy mainstreams youth into all climate change interventions.
	National Energy Policy (NEP), 2003 (updated 2022)	Framework for sustainable energy development in Nigeria with the overall objective of providing clean, affordable, adequate and reliable energy with the active participation of the private sector.	The policy does not specifically address youth or youth-centred initiatives. However, it emphasises training programmes through an expanded renewable energy industry.
	National Energy Master Plan, 2022	The National Energy Master Plan (NEMP) provides a strategic framework for the coordinated development of Nigeria's energy sector. It outlines integrated approaches to energy demand and supply planning; resource production and processing; research and development; and capacity building. The Plan covers all energy sources - including fossil fuels, nuclear, and renewable energy - while promoting environmental sustainability, energy efficiency, and conservation. It also details the establishment of an energy databank and mechanisms for international cooperation. Critically, the NEMP sets out clear procedures for implementing, monitoring, and evaluating compliance with the objectives of the National Energy Policy.	The plan strategically aims to integrate energy studies into the curricula of secondary and tertiary institutions, as well as the National Youth Service Corps (NYSC) programmes.
	Nigeria Energy Transition Plan (ETP), 2022	The ETP is a home-grown, data-backed, multipronged strategy developed for the achievement of net-zero emissions in terms of the nation's energy consumption. It sets out a timeline and framework for the attainment of emissions reduction across five key sectors: power, cooking, oil and gas, transport and industry. Within the scope of the ETP, about 65% of Nigeria's emissions are affected.	The plan is youth-inclusive, focusing on job creation, skill development and active participation in policy-making.

Category	Document	Description	Youth or youth-related policy provision
	Nigeria Renewable Energy Roadmap, 2023	The primary objective of the roadmap is to guide Nigeria's transition towards a sustainable energy system by increasing the deployment of renewable energy technologies. It aims to support the country's ambitious climate targets, including a commitment to net zero by 2060, while meeting growing energy demands and promoting sustainable economic growth. The roadmap outlines policy, regulatory and financial actions necessary to achieve these goals, ensuring that nearly 60% of Nigeria's energy demand can be met with renewable sources by 2050.	The policy does not specifically address youth or youth-centred initiatives.
National development and youth policy	National Development Plan (NDP), 2021–2025	This medium-term national economic plan succeeds the Vision 20:2020 introduced in 2009 and the Economic Recovery and Growth Plan (ERGP) introduced in 2017, both of which expired in 2020. The NDP is a bridge for the country's Nigeria Agenda 2050, currently being developed. Its vision is to unlock the potential in all sectors of the economy (including renewable energy and productive use) for a sustainable, holistic and inclusive national development.	The plan is youth-inclusive, aiming specifically to reduce youth unemployment from a baseline of 42% to a target of 25% by 2025.
	The National Youth Policy, 2019–2023	This policy aims to establish a suitable framework aimed at safeguarding the fundamental human rights of all young individuals, fostering their optimal development and well-being, and encouraging their active participation across various domains of national development processes.	The policy briefly mentions that one of the strategies for expanding youth employment would be to build the entrepreneurial capacity and skills of youth in indigenous technologies to produce solar panels and renewable energies.

Source: Authors' construct, 2024

### 3.1.2 Regulatory frameworks for solar mini-grids and youth employment

The primary regulatory authority overseeing renewable energy in Nigeria is the Electricity Act of 2023. Serving as the foundational framework, this Act supersedes the Power Sector Reform Act of 2005, which previously governed electricity generation, transmission and distribution and job creation in the country.<sup>37</sup> It further establishes the Nigerian Electricity Regulatory Commission (NERC), tasked with overseeing and regulating the electricity sector in Nigeria.

Nevertheless, although the Act does not explicitly focus on the renewable energy sector, it encourages electricity generation from renewable sources like solar and wind. The NREEEP also offers a broader regulatory structure for renewable energy in the country, incorporating clauses that define renewable energy as that which derives from sources that do not deplete the Earth's resources. The regulatory frameworks for renewable energy in Nigeria are primarily governed by the following laws and regulations.

- State-level regulations: State governments now possess the autonomy to harness electricity resources within their jurisdiction for power generation, while remaining subject to the oversight of the NERC. A notable instance is Lagos State, which has formulated its regulations to foster the

development of renewable energy and stimulate job creation initiatives.<sup>38</sup> They plan to implement off-grid solar solutions to extend energy access to both unserved and underserved areas. In a strategic move for revenue generation, they are adopting a carbon pricing mechanism as a means of generating income for the state.

- Rural Electrification Agency (REA) Act: The REA Act was instituted to oversee the expansion of mini-grids and the development of isolated mini-grid systems to enhance energy access and foster job growth in rural communities.
- Environmental Impact Assessment (EIA) Act: This act regulates renewable energy projects by subjecting them to environmental and impact assessment. It ensures that any project adheres to global environmental and societal standards.
- NERC Mini-Grid Regulation (NERC, 2023): The Mini-Grid Regulation of 2016 provides a framework governing the establishment and functioning of mini-grids in Nigeria. This regulatory framework categorises mini-grids into two types: isolated mini-grids and interconnected mini-grids.
- The Nigeria Electricity Act, 2023: This Act offers guidance on balancing the utilisation of natural resources, reducing carbon emissions and outlining strategies for generating, transmitting and distributing sufficient power to fulfil Nigeria's energy requirements.

### 3.1.3 Assessment of policy and regulatory landscape

Nigeria's policy and regulatory landscape regarding green tech, particularly in the renewable energy sector, demonstrates a growing recognition of the role of youth in the transition to a sustainable, low-carbon economy. However, significant gaps remain in integrating youth-focused initiatives within the broader energy and employment policy frameworks. This assessment utilises a more analytical approach to evaluate the coherence, gaps and opportunities for youth engagement in green tech sectors, particularly solar mini-grids. Table 2 provides an assessment of the policy landscape.

**Table 2**  
Policy coherence and gaps in Nigeria

Policy	Green content	Solar mini-grid content	Youth-related initiatives	Youth employment content
Nigeria Electricity Act, 2023	✓	✓	✓	✗
Renewable Energy Masterplan (REMP), 2005 (updated 2012)	✓	✓	✓	✗
National Renewable Energy and Energy Efficiency Policy (NREEEP), 2015	✓	✓	✗	✗
National Renewable Energy Action Plan (NREAP), 2015–2030	✓	✓	✓	✗
National Energy Efficiency Action Plan (NEEAP), 2015–2030	✓	✓	✓	✗
Rural Electrification Strategy and Implementation Plan (RESIP), 2016	✓	✓	✓	✗

Policy	Green content	Solar mini-grid content	Youth-related initiatives	Youth employment content
Mini-Grid Regulation, 2023	✓	✓	✗	✗
Sustainable Energy for All – Action Agenda, 2016	✓	✓	✗	✗
National Action Plan on Gender and Climate Change, 2020	✓	✓	✓	✗
Nigeria's Nationally Determined Contribution (NDC), 2021	✓	✓	✓	✓
Action Plans for Nigeria's NDC	✓	✓	✓	✓
National Climate Change Policy, 2021–2030	✓	✓	✓	✗
National Energy Policy (NEP), 2003 (updated 2022)	✓	✓	✗	✗
National Energy Master Plan, 2022	✓	✓	✓	✗
Nigeria Energy Transition Plan, 2022	✓	✓	✓	✗
Nigeria Renewable Energy Roadmap, 2023	✓	✓	✗	✗
National Development Plan (NDP), 2021–2025	✓	✓	✓	✓
National Youth Policy, 2019–2023	✗	✗	✓	✓

Source: Authors' construct, 2024

### 3.1.3.1 Coherence of green tech policies with youth employment initiatives

Nigeria's approach to green tech, such as solar mini-grids, and youth employment is moderately coherent but lacks an integrated strategy to synergise these two critical areas.

- The National Renewable Energy and Energy Efficiency Policy (NREEEP, 2015) and National Renewable Energy Action Plan (NREAP, 2015–2030): While the NREEEP sets the foundation for the development of renewable energy resources in Nigeria, it does not explicitly focus on youth involvement. The plan includes general provisions for technical and entrepreneurial training, which could benefit youth, but it does not directly address youth employment or create clear mechanisms for youth engagement in renewable energy projects. This is indicative of the need for more specific policy actions that can directly link renewable energy development to job creation for Nigerian youth.
- The Renewable Energy Masterplan (REMP, 2005): The REMP, though outdated and updated only in part in 2012, mentions public education and awareness workshops targeting female youth groups for solar energy technologies. However, the plan does not expand on how these efforts could be scaled up or integrated into broader employment strategies.
- The National Youth Policy (2019–2023): This policy aims to improve youth employment opportunities, but its provisions regarding green tech and renewable energy are minimal. While there is an emphasis on developing entrepreneurial capacity and skills related to indigenous

technologies like solar panel production, there is no comprehensive strategy for fostering youth involvement in the burgeoning renewable energy sector.

- The National Development Plan (NDP, 2021–2025): This plan explicitly aims to reduce youth unemployment by 17 percentage points by 2025. However, while it outlines various initiatives to drive national development, including infrastructure and industrialisation, it lacks a cohesive strategy that connects the renewable energy transition to youth employment.

### **3.1.3.2 Key policy gaps and challenges**

Despite the existence of some policy frameworks that touch on youth employment and renewable energy, critical gaps hinder the development of a robust green tech workforce for youth.

- Limited youth-centred policy initiatives: Many key documents, such as the Mini-Grid Regulation (2023), Nigeria's Energy Transition Plan (2022) and the National Energy Policy (2022), do not include direct provisions for youth-focused initiatives. While these frameworks recognise the need for training and capacity building, youth engagement is often treated as an afterthought rather than an integral part of the strategy. The National Renewable Energy and Energy Efficiency Policy (NREEEP, 2015) and the National Energy Efficiency Action Plan (NEEAP, 2015–2030) primarily focus on the technical aspects of renewable energy deployment, with little emphasis on how these initiatives can generate youth employment or entrepreneurial opportunities.
- Implementation gaps: While Nigeria has set ambitious goals for renewable energy integration (e.g. the Nigeria Renewable Energy Roadmap [2023] and the National Energy Master Plan [2022]), the implementation of these policies has been slow, hindered by financial constraints, regulatory barriers and inadequate infrastructure. Furthermore, the lack of targeted incentives or clear pathways for youth employment in these sectors limits the realisation of these ambitious targets.
- Inadequate coordination and synergy between stakeholders: Coordination between the various ministries and agencies involved in youth employment, energy and renewable energy development is often weak. For example, the Ministry of Power is responsible for the development of renewable energy projects, while the Ministry of Labour and Employment handles youth employment. This division results in siloed efforts and missed opportunities to integrate youth employment with green tech development.

### **3.1.3.3 Opportunities for youth engagement and job creation**

While Nigeria's renewable energy policy framework, particularly for solar mini-grids, is progressively addressing energy access challenges, its potential to harness youth initiatives remains underutilised. Recent policies such as the Electricity Act (2023) and youth-inclusive provisions in the National Development Plan (2021–2025) provide a foundation for aligning renewable energy objectives with youth employment. However, there is a pressing need for improved policy coherence, targeted youth initiatives and stronger inter-agency collaboration. The following are recommended to create youth employment in the renewable energy sector, particularly in solar mini-grids.

- Training programmes and capacity building: Policies such as the Nigeria Electricity Act (2023) and initiatives from the United Nations Development Programme (UNDP) under the NREEEP offer opportunities for youth to gain technical skills in solar energy system installation and

maintenance. The National Power Training Institute of Nigeria (NAPTIN) is also positioned to play a key role in providing training and certification programmes for youth in the power sector, although the reach and accessibility of these programmes need to be expanded.

- Entrepreneurial opportunities in solar mini-grids: As the deployment of solar mini-grids expands under policies like the Rural Electrification Strategy and Implementation Plan (RESIP, 2016) and the National Energy Transition Plan (2022), youth can be engaged in various aspects of the value chain, including installation, maintenance and operations. Moreover, the promotion of local production of renewable energy technologies, as suggested in the National Youth Policy, could empower young entrepreneurs to start businesses that contribute to the renewable energy sector.
- Green job creation: The NDC Action Plan (2021) and Nigeria Energy Transition Plan (2022) explicitly aim to create green jobs, particularly in off-grid solar initiatives. Many of these projects are youth-led, providing fertile ground for innovation and entrepreneurship.
- Private sector engagement: Leveraging fiscal incentives for private sector participation, as seen in policies like the National Energy Policy (2022), could encourage private companies to invest in training and employment initiatives targeting youth. By creating partnerships with private companies, the government can foster a more sustainable approach to youth employment in the green energy sector.

## 3.2 Kenya

Kenya's transport sector accounted for 11% of the country's GHG emissions in 2015. Kenya's most recent national climate action plan forecasts this to increase to 14.7% by 2030 in a business-as-usual scenario. For the government to achieve its 2030 target of reducing total GHG emissions by 32%, the transport sector will have to significantly decarbonise. Recognising this, the government plans target-driven interventions for electrifying the transport sector, including mitigating transport emissions. For example, the government aims for 5% of the total annual vehicle imports to be electric and hybrid vehicles by 2025.<sup>39</sup> President William Ruto also stated that e-mobility is one of the key pathways towards Africa realising net zero by 2050.

Youth unemployment in Kenya poses a significant challenge, with nearly 75% of the population under the age of 35 facing limited job opportunities.<sup>40</sup> This is particularly evident among those aged 15 to 24, where the World Bank estimated a labor force participation rate of just 38% in 2023 – underscoring the disproportionate impact of poor employment prospects and weak productivity on the country's young population.<sup>41</sup> The e-mobility sector is still young, but jobs can be created across the value chain in areas such as electric car production and assembly, servicing, battery recycling, and building charging infrastructure. Kenya can leverage its sustainability goals and demographic dividend by tapping into the potential of young people in this dynamic sector.

### 3.2.1 Policy tools for e-mobility

Kenya's transport sector currently relies heavily on fossil fuels. Following the Paris Climate Agreement of 2015, the country has committed to reducing emissions by 32% by 2030. This goal can be accomplished if Kenya transitions to zero-emission vehicles, such as electric vehicles, motorcycles and vessels. Kenya can also reduce reliance on fossil fuels.<sup>42</sup> The country is striving to establish its first national e-mobility policy, which will encompass an e-mobility strategy and implementation plan,

legislation and regulations, guidelines, and the Regulatory Impact Assessment (RIA).<sup>43</sup> In 2023, the Kenyan Ministry of Transportation published a draft National E-Mobility Policy which recognises that there is a challenge of inadequate inclusion of women, youth and persons living with disabilities in the e-mobility ecosystem.<sup>44</sup> The draft policy therefore proposes providing fiscal and non-fiscal incentives to players in the e-mobility value chain to employ youth and encourage the development of financing products that support youth in the sector.

While the National E-Mobility Policy is yet to be adopted by the Kenyan government, the country has established a range of policies and legislative Acts to tackle energy efficiency, with more under development. These efforts are taking place at both the national and county levels. Additionally, ongoing reforms are being implemented to enhance the sustainability of the country's economy and reduce GHG emissions. These measures aim to support the implementation of the Paris Agreement and the attainment of Kenya's climate targets. Current policies in the e-mobility sector are mapped in Table 3.

**Table 3**  
Policy mapping on e-mobility and youth engagement

Category	Document	Description	Youth or youth-related policy provision
Transport and e-mobility	Integrated National Transport Policy, 2009–2024	This policy seeks to accomplish national and international development goals in a way that is socially, economically and environmentally sustainable by creating, running and maintaining an effective, affordable, safe, secure and integrated transportation system that connects the transport policy with other sectoral policies.	This policy does not explicitly target youth employment, and its e-mobility component is limited to electric-powered trains. Nonetheless, it mentions in passing that two- and three-wheeler motorcycle taxi services, commonly known as boda-boda and tuk-tuk, have reduced the number of unemployed youths in both rural and urban areas of Kenya.
	Finance Act, 2019	This Act governs Kenya's taxation and financial regulation in the country. The provision of the Act has reduced the 20% levy on EVs to 10%. The Act also emphasises income tax exemption to encourage young people who work for themselves in Kenya.	The Act, however, makes no mention of how e-mobility would directly lead to the creation of jobs. Supportive actions include tax reforms and the backing of social programmes.
	The Kenya National Energy Efficiency and Conservation Strategy (NEECS), 2020	This strategy recognises the role of youth in driving innovation and adopting energy-efficient practices. <sup>45</sup> It also aims to increase the share of EVs to 5% of annual imports by 2025 through a mix of regulatory, fiscal and supportive measures such as the revision of building codes to include charging systems, the reduction of import duties and raising awareness around the benefits of energy efficiency and EVs.	The strategy does not clearly state how youth employment would be created through e-mobility in Kenya. It does, however, highlight supportive actions such as training and capacity building, tax incentives – including lower import charges to encourage the use of e-mobility – energy efficiency initiatives and infrastructure development.

Category	Document	Description	Youth or youth-related policy provision
	EV Standards by the Kenya Bureau of Standards (KEBS)	The organisation has created EV guidelines founded on current ISO standards to oversee the development of EVs in Kenya. <sup>46</sup> These guidelines delineate the safety prerequisites for all EVs within the nation and define the manufacturing processes and testing protocols that need to be followed to ensure conformity. It bans the importation of used EVs with a battery life below 80%.	There is no mention of youth employment in the standards.
National Youth Policy	Bottom-Up Economic Transformation Agenda (BETA), 2023	Kenya's current administration is implementing the Fourth Medium Term Plan (MTP IV) for 2023–2027, focusing on the BETA strategy to achieve economic turnaround and inclusive growth through a value chain approach. BETA targets high-impact sectors to drive economic recovery with objectives including reducing the cost of living, eradicating hunger, creating jobs, expanding the tax base, improving foreign exchange balances and fostering inclusive growth. This will be achieved through targeted investments in five core pillars: agriculture; micro, small and medium enterprise (MSME) economy; housing and settlement; healthcare; digital superhighway and creative economy.	The plan encourages manufacturing products such as EVs and motorbikes to achieve its goal of accelerating and scaling up MSMEs to create 1 million jobs for women and youth annually through financing and access to markets, business incubation and mentorship in the private sector.
	Kenya National Development Youth Policy, 2019	The overall objective of this policy is to empower youth and harness their potential for the realisation of sustainable development. The document also outlines the government's strategy to promote the creation of decent, sustainable jobs and income-generating opportunities for all youth in Kenya. <sup>47</sup> The policy aims to build a skilled, competent and disciplined youth workforce; create opportunities for youth to earn decent and sustainable livelihoods; develop youth talent, creativity and innovation for wealth creation; and nurture a value-driven, morally upright generation of patriotic youth.	While the policy repeatedly mentions green jobs, green tech, green processes, eco-entrepreneurship and waste management, it does not mention e-mobility directly. The policy tools mentioned under these terms include fiscal measures and supportive actions such as subsidised loans, training, capacity building and youth sensitisation.
	Big Four Agenda	The aim of the Big Four Agenda is to make Kenya a globally competitive and prosperous country with a high quality of life for all Kenyans by 2030. The agenda establishes four priority areas: ensuring food and nutrition security; affordable housing; enhanced manufacturing; and universal health coverage. The Ministry of Energy has identified strategic initiatives for the Big Four Agenda. These focus on the realisation of improved energy access, energy efficiency and conservation. <sup>48</sup>	The agenda does not explicitly link e-mobility and youth employment.

Source: Authors' construct, 2024

### 3.2.2 Regulatory frameworks in e-mobility and youth employment

The regulatory frameworks concerning e-mobility and youth employment in Kenya encompass a collection of policies, laws, standards and institutions that oversee the progression and execution of EVs and associated services. These frameworks also prioritise the development and enhancement of decent employment prospects for the younger generation in the e-mobility sector.

Some of the key elements of the regulatory frameworks for e-mobility and youth employment in Kenya are:

- The National Climate Change Action Plan (NCCAP) 2018–2022: NCCAP outlines the country's vision, goals and actions to mitigate and adapt to climate change and identifies e-mobility as one of the priority areas for low-carbon development.<sup>49</sup>
- The Energy Act 2019: This Act provides for the regulation, development and promotion of renewable energy sources, including solar, wind and geothermal, which can be used to power EVs.<sup>50</sup>
- The Kenya Bureau of Standards (KEBS): KEBS is responsible for developing and enforcing standards for products and services, including EVs and their components, such as batteries, chargers and converters.<sup>51</sup>
- The Kenya Revenue Authority (KRA): The KRA administers the taxation and customs regime for EVs and their parts and offers incentives such as reduced import duty and excise tax for EVs and hybrid vehicles.
- The National Transport and Safety Authority (NTSA): The NTSA regulates the registration, licensing and inspection of vehicles, including EVs, and ensures compliance with safety and environmental standards.
- The Kenya Power and Lighting Company (KPLC): The KPLC is the main electricity distributor and retailer in the country and provides charging infrastructure and services for EVs.
- The Kenya Renewable Energy Association (KEREAA). The KEREAA is a non-profit organisation that represents the interests of renewable energy stakeholders, including e-mobility actors, and advocates for favourable policies and regulations for the sector.

### 3.2.3 Assessment of policy and regulatory landscape

To date, the Government of Kenya has implemented several policies and initiatives to promote e-mobility. However, policy gaps still exist, hindering the effectiveness of these measures (Table 4). For example, the Kenya National Energy Efficiency and Conservation Strategy (NEECS, 2020) does not categorically state options for green jobs, especially for e-mobility. The EV standards set by KEBS only created EV guidelines founded on the current ISO standards to oversee the development of EVs in Kenya and does not include youth. For the national youth employment policies, the Kenya National Development Youth Policy (2019) only outlines the government's strategy to promote the creation of decent jobs and income-generating opportunities for all youth in Kenya. It does not link to a particular green technology such as e-mobility. Details of the assessment are discussed below.

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**Table 4**  
Policy coherence and gaps in Kenya

Policy	Green content	E-mobility content	Youth-related initiatives	Youth employment content
Integrated National Transport Policy, 2009–2024	X	X	✓	X
Finance Act, 2019	X	✓	X	X
Kenya National Energy Efficiency and Conservation Strategy (NNECS), 2020	X	✓	✓	X
EV standards by Kenya Bureau of Standards (KEBS)	✓	X	X	X
Bottom-Up Economic Transformation Agenda (BETA)	✓	✓	✓	✓
Kenya National Development Youth Policy, 2019	✓	X	✓	✓
Kenya Vision 2030	X	X	✓	✓
Big Four Agenda	X	X	✓	✓

Source: Authors' construct, 2024

### 3.2.3.1 Coherence of e-mobility policies with youth employment initiatives

Kenya's policy and regulatory landscape appears to be moderately coherent regarding e-mobility and national youth. This coherence holds the potential to establish synergies and complementarities in terms of skills development, job creation and income generation for youth in the e-mobility sector. Nevertheless, gaps and challenges need to be addressed. These include the availability and accessibility of training and employment opportunities, the quality and sustainability of jobs, and the inclusiveness and participation of youth in policy-making and implementation processes.

Policies such as the Integrated National Transport Policy (2009–2024), the Bottom-Up Economic Transformation Agenda (BETA, 2023) and the Kenya National Energy Efficiency and Conservation Strategy (NNECS, 2020) provide a foundation for advancing e-mobility. However, coherence between e-mobility policies and youth employment strategies remains moderate. For instance, the Integrated National Transport Policy mentions boda-boda and tuk-tuk operation as a means of reducing youth unemployment but does not explicitly integrate these informal sectors into the e-mobility transition. Similarly, while the BETA agenda emphasises job creation through EV manufacturing, it lacks detailed linkages to youth employment strategies. Efforts such as tax incentives under the Finance Act (2019) and training initiatives outlined in NNECS show potential, but these measures are not adequately aligned to create comprehensive synergies between e-mobility and youth employment.

### 3.2.3.2 Key policy gaps and challenges

- Limited direct youth employment linkages: Although e-mobility policies highlight the potential for youth employment, few explicitly link the transition to tangible employment creation strategies for young people. For instance, while the BETA agenda and draft e-mobility policy

reference job creation, they do not quantify the potential or provide detailed roadmaps for achieving these outcomes.

- **Insufficient focus on the informal sector:** Kenya's youth workforce is heavily concentrated in the informal economy. Policies like the Integrated National Transport Policy (2009–2024) mention boda-boda and tuk-tuk operation, yet do not integrate these informal transport systems into the e-mobility transition in a way that ensures inclusivity and accessibility for youth.
- **Gender and disability gaps:** While inclusivity is mentioned in the draft National E-Mobility Policy, there is no detailed plan for addressing barriers faced by women and persons living with disabilities in entering and benefiting from the e-mobility sector.
- **Early-stage implementation challenges:** The Kenyan e-mobility sector is still nascent, with only 350 registered EVs as of 2023. Infrastructure, such as charging stations and affordable financing, remains underdeveloped, which could be hindering large-scale adoption and subsequent employment generation for youth.
- **Overlap and fragmentation:** The presence of multiple policies and institutions, such as KEBS, NTSA and KPLC, creates overlaps that may be delaying coherent action. A unified policy framework that consolidates roles and responsibilities would streamline efforts.

### **3.2.3.3 Opportunities for youth engagement and job creation**

Kenya's policy landscape presents a foundational framework for promoting e-mobility to reduce GHG emissions while addressing youth unemployment. However, there is a critical need for targeted strategies that explicitly link these policies to youth employment opportunities within the e-mobility sector. By aligning policy objectives with actionable youth engagement initiatives, Kenya can leverage its demographic dividend while fostering a sustainable transport future. The policies outlined below provide several avenues for leveraging youth initiatives within the e-mobility sector:

- **Job creation across value chains:** E-mobility presents significant opportunities for youth employment in EV production, assembly, maintenance, battery recycling and charging infrastructure development. Policies like BETA can capitalise on this potential by providing detailed implementation roadmaps.
- **Training and capacity building:** NEECS and the Kenya National Development Youth Policy provide a framework for equipping young people with skills relevant to the e-mobility sector. Expanding these initiatives to include targeted technical and entrepreneurial training can enhance youth employability.
- **Entrepreneurship development:** The promotion of MSMEs, as outlined in the BETA agenda, can empower youth to start businesses related to EV services and components.
- **Inclusivity initiatives:** The draft National E-Mobility Policy's focus on inclusivity can be leveraged to actively engage marginalised groups, including women and persons with disabilities, ensuring they benefit from the transition.

- Integration of informal transport: Policies must strategically integrate boda-boda and tuk-tuk operators into the e-mobility transition, creating pathways for these informal workers to access training, financing and infrastructure.

### 3.3 Ghana

Ghana is among the countries in sub-Saharan Africa where agriculture remains a key driver of its economy, accounting for about 21% of its GDP and nearly 40% of the workforce.<sup>52</sup> Nonetheless, the sector faces major climate change risks such as land degradation, low productivity and significant post-harvest losses. To address these challenges, climate-smart agriculture (CSA) has been identified as a solution that will boost the productivity, adaptability and sustainability of agricultural systems while ensuring climate change mitigation.<sup>53</sup> CSA is supported through the adoption and expansion of different technological, practical and policy-changing revolutions. These include the use of solar-powered irrigation pumps and solar-powered dryers, which can help to reduce post-harvest losses, increase crop yield and reduce carbon emissions.

Beyond increasing agricultural production levels, Ghana's National Climate-Smart Agriculture and Food Security Action Plan (2016–2020) aims to tackle youth unemployment by promoting youth participation in agriculture, particularly in rural districts. The plan encourages the adoption of climate-smart technologies and practices, making agriculture more attractive and viable for young people. This initiative aligns with the broader mandate of the National Youth Authority, which seeks to improve youth access to education, address unemployment and mitigate the negative effects of urbanisation, social instability and political conflict. By integrating CSA into youth development strategies, the policy provides a structured pathway for young people to engage in sustainable and productive agricultural livelihoods.

As reliance on CSA technologies increases, so does the demand for trained technicians who operate and maintain them. This creates job opportunities, from training and equipment sales to other supporting services, that can address the 12% youth unemployment rate in the country.<sup>54</sup> Other CSA technologies, such as the use of biotechnology, drones, sensors, blockchains and artificial intelligence (AI), improve the efficiency, quality and climate resilience of agricultural production, while generating green jobs in subsectors such as renewable energy and waste management.<sup>55</sup>

These technological advancements can help address the high level of youth unemployment in Ghana, particularly in the technologically intensive subsectors of CSA. In summary, CSA can play a crucial role not just in building climate resilience within Ghana's agricultural sector, but also in providing opportunities for productive employment for the young population.

### 3.3.1 Policy tools for CSA

**Table 5**  
Policy mapping on CSA and youth engagement

Category	Document	Description	Youth or youth-related policy provision
National climate policies, agricultural technologies and developmental priorities	The National Climate Change Policy (NCCP)	The NCCP, launched in 2013, outlines the vision and goals for establishing a climate-resilient and climate-compatible economy for sustainable development and equitable low-carbon economic growth. <sup>56</sup> Recognising that economic modernisation will lead to increased emissions, the policy notes that the new development path will result in lower emissions when considering the reduction of energy waste and improvement in infrastructure and public transport. <sup>57</sup> The NCCP identifies five priority areas: food security; infrastructure; community resilience; improved environmental management and ecosystems for greater biodiversity; and improved economic growth.	While the NCCP does not explicitly mention youth employment, it includes key policy actions that imply youth-centred initiatives, such as promoting vocational training – particularly for young people – in areas like sustainable agriculture. Additionally, the policy recognises youth as key stakeholders in the climate change process. However, it does not specifically mention any CSA technologies.
	Climate Smart Agriculture Investment Plan (CSAIP), 2022	The CSAIP was launched by the Ministry of Food and Agriculture (MoFA) and the World Bank. The core objective of the plan is to generate evidence of CSA technology that has the greatest potential to enhance productivity and increase household incomes in Ghana's agriculture sector amid a changing climate. Furthermore, it presents opportunities to strengthen the resilience of the agricultural system, ensuring that future agricultural practices do not pose a threat to environmental integrity through GHG emissions, water system pollution or ecological system destruction.	The CSAIP reveals an investment requirement of USD 389.5 million for nine CSA projects in Ghana, with the potential to benefit at least 1.7 million farmers, including youth and their families. While the plan outlines supportive actions such as capacity building for farmers, infrastructure development, and improvements in crop and livestock production to create income opportunities for women and youth, it does not provide a detailed strategy for the employment process or how youth will be specifically integrated into these initiatives.
	National Climate Smart Agriculture Food and Security Action Plan (CSA-FSAP), 2016–2020	This policy document facilitates and operationalises the NCCP for effective integration of climate change resiliency into the development of policies and programmes in the food and agriculture sector. The action plan aims to develop climate-resilient agriculture and food systems for all agroecological zones, develop human resource capacity for climate-resilient agriculture and elaborate on the implementation framework and the specific CSA activities to be carried out at the respective levels of governance.	The adoption of climate-smart technologies to promote youth occupation in agriculture is encouraged in this policy, but there is no clear roadmap on how to achieve it. Also, the policy mentions limited financial resources as a major challenge to achieving the action plan.

Category	Document	Description	Youth or youth-related policy provision
	Ghana Shared Growth and Development Agenda (GSGDA II) Policy Framework, 2014–2017	This policy is the fifth in a series of medium-term national development policy frameworks that have been prepared over the past 20 years. It serves as the operational framework for the President's Coordinated Program of Economic and Social Policies, 2014–2020. <sup>58</sup> The goal of the GSGDA II is to enhance incomes, particularly for those in impoverished households; improve the delivery of services in water, sanitation, education, health and housing throughout the country; increase agricultural productivity to ensure both food and nutrition security; implement an ambitious revival of manufacturing as part of a comprehensive strategy for production and export diversification; generate decent employment opportunities, especially for the youth; and develop modern infrastructure systems.	Overall, the GSGDA II is a non-regulatory policy document that prioritises youth employment. However, it does not address job creation in CSA or the adoption of agricultural technologies. Instead, the policy focuses on education reform, providing training opportunities for unemployed young men and women and ensuring youth inclusion in national development planning.
	National Green Jobs Strategy (NGJS), 2021–2025	The NGJS promotes green job creation by aligning and coordinating policies; developing and enhancing skills, especially for youth, women and persons with disabilities; supporting sustainable and competitive green enterprises and markets; and facilitating finance for green enterprises. <sup>59</sup>	Youth employment is mainstreamed across all the strategic objectives. Two of these are youth-specific: One is to assess and monitor skills needed for green jobs, align qualification frameworks and curricula, and ensure inclusive and equitable access to training. The other is to promote green entrepreneurship with business development services and finance, especially for youth, women and persons with disabilities. The NGJS, institutionalised under the Ministry of Employment and Labour Relations, does not specifically or comprehensively target CSA tech beyond a brief mention.
	National Medium-Term Development Policy Framework (NMTDPF), 2022–2025	The NMTDPF prioritises youth employment by positioning agriculture as a viable business for youth; supporting entrepreneurship and MSME development; harnessing the demographic dividend; and promoting effective participation of young people in development. <sup>60</sup> The NMTDPF also aims to strengthen youth technological skills, design climate interventions with green jobs and strengthen career guidance. The NMTDPF does not propose youth-specific strategies to leverage the benefits of digitalisation, nor gender-responsive approaches for young women entering the labour market.	The plan emphasises the need to support youth in building and sustaining modern and climate-smart agribusiness to spur economic growth, with the expectation that this support will generate jobs for young people. The plan also claims to support actions improving public–private investments in the agricultural sector and promoting agriculture as a viable business among the youth through long-term agricultural financing instruments such as tax relief and incentives for agricultural investment. The NMTDPF does not spell out an explicit agenda for creating jobs from CSA or CSA tech technologies. It outlines only supportive actions and measures for promoting agriculture and increasing youth participation to spur economic growth.

Source: Authors' construct, 2024

### 3.3.2 Regulatory frameworks in CSA tech and youth employment

Regulatory frameworks are the rules and standards that govern the activities and behaviours of actors in a specific sector or domain, such as CSA tech and youth employment. These frameworks can influence the incentives, opportunities and risks for the actors involved, and affect the outcomes and impacts of their actions.<sup>61</sup> Regulatory frameworks can be established and enforced by different levels of governance, such as national, regional or local authorities, as well as by non-state actors, such as civil society, the private sector or customary institutions.

In Ghana, the regulatory frameworks for CSA tech are as follows:

- The Environmental Protection Agency Act 1994 (Act 490): This Act establishes the Environmental Protection Agency (EPA) as the main regulatory body for environmental management and protection in Ghana and mandates it to issue environmental permits and certificates for projects and activities that may have significant environmental impacts, such as agriculture and land use.
- The Plant and Fertiliser Act 2010 (Act 803): This Act regulates the production, distribution and use of plant and fertiliser products in Ghana and establishes the Plant Protection and Regulatory Services Directorate (PPRSD) as the competent authority for plant health and quarantine issues.<sup>62</sup>
- The Labour Act 2003 (Act 651): This Act regulates the employment and labour relations in Ghana and sets the minimum standards and conditions for employment, such as wages, hours of work, leave, social security, health and safety, and dispute resolution.<sup>63</sup>
- The National Apprenticeship Policy 2016: This policy provides the framework for the development and implementation of apprenticeship programmes in Ghana and defines the roles and responsibilities of the stakeholders involved, including the government, employers, training providers and apprentices.

### 3.3.3. Assessment of policy and regulatory landscape

Ghana's policy and regulatory landscape regarding green tech, particularly CSA, reflects a growing acknowledgement of the role of youth in driving sustainable, climate-resilient development. However, significant gaps persist in aligning youth-focused initiatives with broader CSA and employment policy frameworks (Table 6). This assessment employs a more analytical approach to evaluate the coherence, gaps and opportunities for youth engagement in green tech sectors, with a particular emphasis on CSA. The assessment of Ghana's policy landscape is discussed below.

**Table 6**  
Policy coherence and gaps in Ghana

Policy	Green content	Climate-smart agriculture content	Youth employment content
National Climate Change Policy (NCCP)	✓	✗	✗
National Climate Smart Agriculture Food and Security Action Plan (CSA-FSAP), 2016–2020	✓	✓	✗
Climate Smart Agriculture Investment Plan (CSAIP), 2022	✓	✓	✗
Ghana Shared Growth and Development Agenda (GSGDA II) Policy Framework, 2014–2017	✓	✗	✓
National Employment Policy (NEP), 2012–2016	✗	✗	✓
National Medium-Term Development Policy Framework (NMTDPF), 2022–2025	✗	✓	✓
National Green Jobs Strategy (NGJS), 2021–2025	✓	✓	✓

Source: Authors' construct, 2024

### 3.3.3.1 Coherence of CSA policies with youth employment initiatives

The alignment between Ghana's national youth employment policies and CSA frameworks reveals weak coherence. While both policy-sets highlight the importance of youth involvement and climate resilience, they lack integrated strategies to explicitly link youth employment with CSA. For example, the National Climate Change Policy (NCCP, 2013) focuses on broader priority areas like food security and environmental management but fails to address green job creation through CSA technologies. Similarly, the Climate Smart Agriculture Food and Security Action Plan (CSA-FSAP, 2016–2020), which operationalises the NCCP, emphasises climate change resilience in agriculture without providing actionable mechanisms for youth engagement in CSA. Despite these shortcomings, recent improvements, such as the National Green Jobs Strategy (2021–2025), show promise by combining green agriculture with a focus on youth employment. However, regulatory frameworks remain primarily focused on institutional actors, with limited attention to CSA initiatives directly relevant to youth employment.

### 3.3.3.2 Key policy gaps and challenges

- Lack of comprehensive CSA focus: Many policies, such as the NCCP and GSGDA II, lack specific provisions for CSA technologies or clear strategies for integrating them into youth employment initiatives. Likewise, regulatory frameworks like the Plant and Fertiliser Act and Labour Act do not explicitly address CSA or CSA tech as a pathway for employment creation.
- Absence of targeted youth strategies in CSA: While youth are recognised as key stakeholders, most policies do not provide specific roadmaps or implementation frameworks to leverage CSA tech for youth employment. The CSA-FSAP encourages youth participation but lacks detailed mechanisms to achieve this goal.

- Inadequate financial and regulatory instruments: Policies like the CSA-FSAP and CSAIP lack robust domestic financing mechanisms, instead relying heavily on external donor support and climate funds. There are no targeted fiscal or financial incentives for youth-focused CSA entrepreneurship.
- Limited integration of advanced technologies: While technologies like drones, sensors and artificial intelligence are mentioned, policies lack clear pathways for integrating these tools into CSA practices accessible to youth.
- Gender and inclusivity gaps: Policies do not sufficiently address the barriers young women face in accessing CSA opportunities, such as land, finance and training.

### **3.3.3.3 Opportunities for youth engagement and job creation**

Ghana's policy landscape demonstrates a growing recognition of the role of CSA in addressing climate change risks and promoting youth employment. However, significant gaps remain in integrating CSA technologies with youth-specific employment strategies, financing mechanisms and regulatory support. By strengthening policy coherence, addressing inclusivity gaps and fostering innovation, Ghana can harness CSA to transform its agricultural sector while creating sustainable opportunities for its young population.

The existing policies create a conducive environment for harnessing youth initiatives through several avenues:

- Policy reforms for CSA and youth: Recent initiatives, such as the National Green Jobs Strategy, present opportunities to develop comprehensive frameworks that explicitly integrate CSA tech and youth employment strategies. Aligning these policies with global goals, such as the Sustainable Development Goals (SDGs) and NDCs, can further enhance coherence.
  - Training and capacity building: Expanding training programmes under the National Youth Policy can equip young people with skills in CSA practices, enhancing their employability and entrepreneurial capacity in agriculture and CSA tech.
  - Entrepreneurship in green agriculture: Promoting youth-led businesses in CSA technologies, such as precision farming, agroforestry and sustainable irrigation systems, can generate employment and innovation in the agricultural sector.
  - Integration of advanced technologies: Policies can encourage the use of advanced tools like drones and sensors by subsidising costs and facilitating access for young farmers and entrepreneurs.
  - Incentives for private sector involvement: Leveraging fiscal incentives to attract private sector investments in CSA can create opportunities for youth in training, technology deployment and agribusiness value chains.
  - Gender-inclusive policies: Addressing gender-specific barriers can ensure equitable access to CSA opportunities for young women through targeted financial support, mentorship and land access initiatives.
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## 4. Summary of findings



This study assessed the policy landscape in sub-Saharan Africa (Nigeria, Kenya and Ghana) with a focus on the coherence between green technology (green tech) initiatives and youth employment strategies. The findings highlight the alignment of policies, gaps and opportunities in fostering youth engagement in green tech such as solar mini-grids, CSA and e-mobility.

### 4.1 Policy coherence and integration

- Nigeria: Nigeria's policies on green tech and youth employment show moderate coherence but lack a cohesive strategy to integrate the two areas. While the National Renewable Energy and Energy Efficiency Policy (NREEEP, 2015) and National Renewable Energy Action Plan (NREAP, 2015–2030) lay the groundwork for renewable energy development, they do not focus on youth engagement or job creation in the sector. The Renewable Energy Masterplan (REMP, 2005) mentions initiatives for female youth but lacks strategies for scaling these efforts. The National Youth Policy (2019–2023) emphasises youth employment and skills development but offers little focus on green tech, and the National Development Plan (2021–2025) aims to reduce youth unemployment without connecting the renewable energy sector to youth employment. Overall, there is no integrated approach to link renewable energy with youth employment, limiting opportunities for youth in the green economy.
- Kenya: Kenya's policy landscape shows moderate coherence between e-mobility and youth employment policies, with potential for synergies in skills development, job creation and income generation for young people in the e-mobility sector. However, gaps remain in areas such as training accessibility, job quality and youth participation in policy-making and implementation. Policies like the Integrated National Transport Policy (2009–2024), the Bottom-Up Economic Transformation Agenda (BETA, 2023), and the Kenya National Energy Efficiency and Conservation Strategy (NEECS, 2020) lay the groundwork for e-mobility, but they do not fully integrate youth employment strategies. For example, while the Integrated National Transport Policy mentions boda-boda and tuk-tuk operation as a means to reduce youth unemployment, it does not connect these informal sectors to the e-mobility transition. Similarly, the BETA agenda emphasises job creation through EV manufacturing but lacks specific ties to youth employment strategies. While tax incentives and training initiatives in the NEECS show promise, they are not well aligned to create comprehensive synergies between e-mobility and youth employment.
- Ghana: Ghana's national youth employment policies and CSA frameworks demonstrate weak alignment, with limited integration of youth employment strategies into CSA initiatives. While policies like the National Climate Change Policy (NCCP, 2013) and the Climate Smart Agriculture Food and Security Action Plan (CSA-FSAP, 2016–2020) emphasise climate resilience and food

security, they lack actionable mechanisms to engage youth in green job creation through CSA technologies. However, recent efforts such as the National Green Jobs Strategy (2021–2025) show progress by linking green agriculture with youth employment. Despite these advancements, regulatory frameworks largely focus on institutional actors, neglecting the specific needs and opportunities for youth in CSA initiatives.

## 4.2 Policy gaps

### *Nigeria*

- Limited youth-centric focus: Many renewable energy policies, such as the NREEEP and the NEP, do not explicitly prioritise youth employment or entrepreneurship in the renewable energy sector, particularly solar mini-grids.
- Weak interministerial coordination: Policies related to energy, youth employment and green tech are often developed in silos by different ministries (e.g. Ministry of Power, Ministry of Youth and Sports), resulting in a lack of synergies and missed opportunities for integrated action.
- Insufficient youth engagement strategies: While some policies, like the Renewable Energy Masterplan and National Energy Policy, acknowledge youth involvement, they lack detailed frameworks or strategies to actively engage young people in renewable energy sectors.
- Inadequate training and capacity-building programmes: Although certain initiatives exist, such as the National Youth Policy and the Electricity Act (2023), there are gaps in scaling up technical and entrepreneurial training for youth, particularly in areas like solar mini-grid installation, maintenance and operation.
- Lack of youth-specific policy provisions in regulations: Documents such as the Mini-Grid Regulation (2023) and the Nigeria Renewable Energy Roadmap (2023) do not include explicit provisions for youth involvement or targeted initiatives.

### *Kenya*

- Lack of direct youth employment linkages: Policies like the BETA agenda and draft e-mobility policy reference job creation but fail to provide detailed strategies or roadmaps for engaging youth in e-mobility.
  - Limited focus on informal sector integration: Policies such as the Integrated National Transport Policy (2009–2024) acknowledge informal transport systems like boda-bodas and tuk-tuks but do not outline how to transition them into e-mobility while benefiting youth operators.
  - Gender and disability inclusion gaps: The draft National E-Mobility Policy mentions inclusivity but lacks actionable plans to address barriers faced by women and persons with disabilities in the e-mobility workforce.
  - Underdeveloped infrastructure: With only 350 EVs registered as of 2023, inadequate charging stations, high upfront costs and limited financing options impede e-mobility growth and associated youth employment opportunities.
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- Fragmentation and overlaps: The involvement of multiple agencies like KEBS, NTSA and KPLC leads to policy overlaps, delaying coherent implementation and action.
- Missed integration of youth policies: Youth-focused policies, such as the Kenya National Development Youth Policy (2019), do not specifically link to e-mobility despite promoting green jobs and eco-entrepreneurship.

## Ghana

- Lack of comprehensive CSA focus: Policies like NCCP and GSGDA II lack provisions for CSA tech and their integration into youth employment strategies. Regulatory frameworks such as the Plant and Fertiliser Act and Labour Act do not address CSA or CSA tech as a pathway for job creation.
- Absence of targeted youth strategies: While youth are recognised as key stakeholders, there is no clear roadmap in policies for leveraging CSA technologies for youth employment. The CSA-FSAP encourages youth involvement but lacks detailed implementation mechanisms.
- Inadequate financial and regulatory instruments: Policies rely heavily on external donor support and climate funds, with no robust domestic financing mechanisms or fiscal incentives for youth-focused CSA entrepreneurship.
- Limited integration of advanced technologies: Policies mention advanced technologies like drones and AI but lack clear pathways for youth to access these tools within CSA practices.
- Gender and inclusivity gaps: Policies do not adequately address the barriers young women face in accessing CSA opportunities, including land, finance and training.

## 4.3 Opportunities for youth engagement

### Nigeria

- Skill development and training: Policies like the Nigeria Electricity Act (2023) and UNDP initiatives under NREEEP provide platforms for youth to gain technical skills in solar energy, with support from institutions like NAPTIN offering training and certification programmes.
- Entrepreneurship in solar mini-grids: Expanding solar mini-grid projects under RESIP (2016) and the Energy Transition Plan (2022) presents opportunities for youth in installation, maintenance, operations and renewable technology production.
- Green job creation: Policies such as the NDC Action Plan (2021) and the Energy Transition Plan (2022) focus on creating green jobs, particularly in off-grid solar projects, offering youth opportunities to innovate and lead initiatives.
- Private sector collaboration: Fiscal incentives in the National Energy Policy (2022) encourage private sector involvement, enabling partnerships to support youth employment and training programmes in the renewable energy sector.

## Kenya

- Value chain job creation: The transition to e-mobility presents opportunities for youth employment in areas such as EV assembly, battery recycling, maintenance and charging infrastructure development.
- Training and capacity building: Policies like the NEECS (2020) highlight training and capacity-building initiatives, which can equip youth with critical skills to participate in the e-mobility sector.
- Entrepreneurship development: Programmes under the BETA agenda can support youth-owned micro and small enterprises, such as EV repair shops, battery services and charging station operations.
- Inclusivity initiatives: Draft e-mobility policies' focus on inclusivity can be leveraged to ensure equitable participation of women, youth and marginalised groups in the sector.
- Fiscal and tax incentives: Provisions such as reduced import duties under the Finance Act (2019) can lower barriers to entry for youth entrepreneurs in e-mobility.
- Green innovation and energy efficiency: Encouraging innovation in energy-efficient practices and EV technologies could position Kenya as a leader in Africa's green mobility transition while creating opportunities for youth-driven solutions.

## Ghana

- Policy reforms for CSA and youth: Initiatives like the National Green Jobs Strategy offer opportunities to create frameworks that integrate CSA technologies and youth employment strategies, aligning with SDGs and NDCs.
  - Training and capacity building: Expanding training programmes under the National Youth Policy can equip youth with skills in CSA practices, enhancing employability and entrepreneurship in agriculture and CSA tech.
  - Entrepreneurship in green agriculture: Promoting youth-led businesses in CSA technologies such as precision farming, agroforestry and sustainable irrigation can generate jobs and innovation.
  - Integration of advanced technologies: Policies can subsidise the costs of advanced tools like drones and sensors to improve youth access to CSA technologies.
  - Incentives for private sector involvement: Fiscal incentives can attract private sector investments, creating opportunities for youth in training, technology deployment and agribusiness value chains.
  - Gender-inclusive policies: Addressing gender-specific barriers can ensure equitable access to CSA opportunities for young women through targeted financial support, mentorship and land access initiatives.
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In conclusion, the policy landscapes in Nigeria, Ghana and Kenya exhibit varying degrees of coherence and effectiveness in aligning green technologies with youth employment strategies. Significant gaps remain in targeted youth strategies, inter-agency coordination, financial and regulatory frameworks, and inclusivity measures. However, opportunities for training, entrepreneurship and job creation underscore the potential to harness green technologies for youth engagement. Strengthening policy coherence and addressing these gaps will be critical for achieving sustainable development and maximising youth employment potential in the green economy.



## 5. Recommendations



### 5.1 Nigeria

- Enhance interministerial coordination: Foster collaboration between ministries, particularly the Ministry of Power and the Ministry of Youth and Sports, to create synergies between green tech and youth employment policies.
- Integrate youth employment in green tech policies: Develop a cohesive strategy to link green tech, particularly solar mini-grids, with youth employment. This should include clear pathways for youth to engage in installation, maintenance and operations, as well as entrepreneurial opportunities in renewable energy sectors.
- Strengthen training and capacity building: Scale up technical and entrepreneurial training programmes, particularly for youth, in areas such as solar mini-grid systems and renewable technology production. Expand collaborations with institutions like NAPTIN for certification and skills development.
- Support private sector engagement: Implement fiscal incentives and create an enabling environment for private sector partnerships to drive job creation and training opportunities for youth in renewable energy sectors.
- Develop youth-specific provisions in regulations: Ensure that regulatory frameworks like the Mini-Grid Regulation (2023) and the Nigeria Renewable Energy Roadmap (2023) include targeted initiatives for youth involvement in renewable energy projects.

### 5.2 Kenya

- Enhance coordination among agencies: Streamline policy implementation by addressing overlaps among agencies like KEBS, NTSA and KPLC, ensuring coordinated action in advancing e-mobility and youth employment.
- Link e-mobility to youth employment: Strengthen policies like the BETA agenda by incorporating specific strategies for youth employment in the e-mobility sector, such as creating opportunities in EV assembly, battery recycling and charging infrastructure development.
- Focus on informal sector transition: Establish clear pathways for integrating informal transport systems like boda-bodas and tuk-tuks into the e-mobility transition, ensuring that youth operators benefit from the shift.

- Promote inclusivity in e-mobility: Develop actionable plans under the draft National E-Mobility Policy to address barriers faced by women, youth and persons with disabilities in accessing jobs in the e-mobility sector.
- Improve infrastructure and financing options: Prioritise the development of charging stations, reduce upfront costs of e-mobility vehicles, and create financing mechanisms to encourage youth entrepreneurship in the sector.

### 5.3 Ghana

- Create clear CSA–youth employment pathways: Develop actionable frameworks within policies like the CSA-FSAP to specifically target youth engagement with CSA technologies, with a focus on creating green jobs through training and entrepreneurship in sectors like precision farming and sustainable irrigation.
- Strengthen financial and regulatory support: Increase domestic financing mechanisms and provide fiscal incentives to support youth-focused CSA entrepreneurship, while addressing gaps in financial and regulatory instruments.
- Promote gender-inclusive policies: Ensure targeted interventions to address gender-specific barriers for young women in accessing CSA opportunities, such as land, finance and training.
- Expand training and capacity building: Scale up training programmes under the National Youth Policy to equip youth with skills in CSA technologies, ensuring alignment with broader green job-creation objectives.
- Encourage private sector participation: Provide incentives to attract private sector investments in CSA technologies, creating more opportunities for youth involvement in training, technology deployment and agribusiness value chains.

To maximise youth employment in green technologies, Nigeria, Kenya and Ghana must strengthen policy coherence by aligning green tech initiatives with specific youth employment strategies. This requires improving interministerial coordination, enhancing training programmes, developing inclusive policies and fostering private sector participation. Addressing gaps in regulatory frameworks and financing will be essential for sustainable youth engagement in the green economy.

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The Mastercard Foundation is a registered Canadian charity and one of the largest foundations in the world. It works with visionary organisations to advance education and financial inclusion to enable young people in Africa and Indigenous youth in Canada to access dignified and fulfilling work. Established in 2006 through the generosity of Mastercard when it became a public company, the Foundation is an independent organisation separate from the company, with offices in Toronto, Kigali, Accra, Nairobi, Kampala, Lagos, Dakar, and Addis Ababa. Its policies, operations, and program decisions are determined by the Foundation's Board of Directors and leadership.

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