POLICY BRIEF

MAY 2025

OPERATIONALISING A JUST TRANSITION IN AFRICA

INCORPORATING JUST TRANSITION PRINCIPLES INTO UPDATED NDCS TO OVERCOME RENEWABLE ENERGY BARRIERS

Africa's transition to renewable energy is critical for climate resilience and sustainable development, yet implementation faces financial, technical, regulatory, and socio-economic barriers. This policy brief argues that integrating just transition principles into updated Nationally Determined Contributions (NDCs) can address these challenges by aligning climate action with equity, inclusion, and local development needs. With the 2025 NDC update deadline approaching, African nations have a strategic opportunity to embed just transition frameworks that promote job creation, energy access, and long-term resilience, leaving no one behind

Authors: Akinyi J. Eurallyah (ARIN), Dr Joanes Atela (ARIN), Dr Humphrey Agevi, Florence Onyango, Carrine Adjassa (ARIN), Jerry Ariel (ARIN) and Phatsimo Raman (SSN)

KEY MESSAGES

1 THE UPCOMING NDC UPDATE IS A STRATEGIC OPPORTUNITY

The upcoming NDC update is a strategic opportunity for African countries to embed just transition principles that align climate goals with socio-economic development, ensuring that the shift to renewable energy is fair, inclusive, and context-specific.

2 DIRECTLY ADDRESS CORE BARRIERS TO RENEWABLE ENERGY IMPLEMENTATION

Integrating just transition into NDCs can directly help address core barriers to renewable energy implementation, including limited access to finance, technology gaps, weak institutional capacity, and socio- economic exclusion, by aligning national commitments with equity-focused, people-centred policies.

3 POLICY & REGULATORY COHERENCE ARE FOR A SUCCESSFUL JET

Updating NDCs to include governance reforms, regulatory clarity, and support for emerging technologies can attract investment, reduce risk, and accelerate project implementation.

4 STRENGTHENING INSTITUTIONAL CAPACITY IS FOUNDATIONAL TO DELIVERING A JET

Updated NDCs should consider measures to enhance the technical skills, staffing, and resources of energy and climate institutions to improve coordination, oversight, and implementation of renewable energy projects.

5 LOCAL OWNERSHIP & COMMUNITY PARTICIPATION MUST BE CENTRAL TO NDC IMPLEMENTATION

Public awareness, education, and meaningful engagement are key to ensuring that renewable energy projects are socially accepted, tailored to local needs, and sustainable in the long term.

6 JUST TRANSITION FRAMEWORKS SHOULD BE INTEGRATED INTO NDCS & REFLECT AFRICA'S UNIQUE DEVELOPMENT REALITIES

This includes addressing high poverty levels, informal labour markets, and infrastructure deficits, while ensuring that climate action contributes directly to job creation, energy security, and long-term economic resilience.

INTRODUCTION

Africa is increasingly vulnerable to climate change, making the urgent adoption of sustainable energy solutions crucial for achieving its sustainable development goals. Nationally Determined Contributions (NDCs), under the Paris Agreement, are vital climate commitments made by countries, including those in Africa, to reduce greenhouse gas emissions and strengthen their climate resilience, in line with their national capacities and priorities.[1] A central focus of these commitments is the expansion of access to renewable energy, a necessity in a region where energy poverty remains a significant challenge. African countries cannot only mitigate the effects of climate change by integrating clean energy sources but also improve the quality of life for their populations and stimulate economic growth.[2]

However, the shift to renewable energy in Africa is not just a technical or environmental challenge, it is a social and economic challenge that must be navigated with a focus on justice. This is where the concept of a just transition becomes critical. A just transition ensures that the move towards a low-carbon economy is fair and inclusive, addressing the needs of workers, communities, and vulnerable populations who may be disproportionately affected by the transition. It emphasises the creation of decent jobs, social protection, and equitable access to clean energy while leaving no one behind.[3]

The NDCs provide a strategic framework for operationalising a just transition in Africa by aligning renewable energy targets with social and economic development goals. For example, Kenya's NDC includes commitments to improve energy access in rural areas and promote clean cooking solutions, which directly address the needs of vulnerable populations.[4] Similarly, South Africa's NDC emphasises the importance of creating jobs in the renewable energy sector and supporting communities affected by the transition away from coal.[5] NDCs can serve as a roadmap for ensuring that the energy transition is both environmentally sustainable and socially equitable.[6] Despite the progress made in achieving NDC targets related to renewable energy in Africa, the implementation of these commitments faces several challenges

that can hinder the realisation of a just transition.[7]

The upcoming deadline for submitting updated NDCs in September 2025 presents a critical opportunity for African countries to embed just transition principles into their climate strategies. As nations revise their climate commitments under the Paris Agreement, they can use this moment to align renewable energy goals with broader socio-economic development priorities. This policy brief analyses how renewable energy priorities are currently reflected in African countries' NDCs and explores how just transition principles can be more effectively integrated. It identifies key barriers, financial, technical, regulatory, and socio-economic, that hinder renewable energy implementation and demonstrates how embedding just transition frameworks in updated NDCs can help address these challenges while promoting equitable, inclusive climate action.

Luigi Guarino via Flickr (CC BY)

RENEWABLE ENERGY TARGETS IN THE NDCS OF AFRICAN COUNTRIES

Africa is at a pivotal moment in its energy transition. With the continent facing increasing vulnerability to climate change, the adoption of renewable energy is not just an environmental imperative but also a socio-economic necessity. African countries have demonstrated strong political will by embedding ambitious renewable energy targets into their NDCs under the Paris Agreement, aiming to reduce greenhouse gas emissions by integrating renewable energy into their energy mix, enhancing energy access, and driving sustainable development. Many of these commitments aim for a 20-40% reduction in emissions by 2030 compared to baseline levels.[8] Additionally, countries have pledged substantial investments in clean energy infrastructure and technologies, reflecting a growing trend towards embedding

renewable energy into their climate strategies.[9] In 2022 alone,

Africa saw renewable energy investments of about $10 billion, with a significant focus on solar and wind projects.[10] Kenya and South Africa have been major recipients of this investment, driven by supportive policies and strong public-private partnerships.

Key renewable energy targets in African NDCs focus on increasing renewable energy capacity, reducing emissions, and boosting investments in clean energy. For instance, Ethiopia's Grand Ethiopian Renaissance Dam (GERD) is set to produce 6,450 MW of electricity, significantly boosting the country's hydropower capacity and integrating renewable energy into its grid.[11] Similarly, Kenya and South Africa have set goals to achieve 30-50% of their energy from renewable sources by 2030.[12]

These nations, alongside others like Egypt, have committed billions of dollars to develop solar, wind, and hydroelectric projects over the coming decades.[13]

In addition to quantitative targets, African NDCs include broader goals to transform their energy sectors by enhancing energy access, adopting innovative clean energy technologies, and strengthening policy frameworks. Many countries are prioritising universal access to energy, particularly in rural and underserved areas. Strategies such as expanding renewable electricity grids and implementing off- grid solutions like solar home systems are key to these efforts.[14] Countries are also supporting research and development to improve the efficiency and reduce the costs of renewable energy systems.[15]

KENYA

Kenya has set ambitious long-term goals for its energy sector, with plans to develop nuclear power by 2035. However, its current focus remains on renewable energy sources such as geothermal, solar, and wind. The country aims to modernise its aging electricity transmission network, which is already powered by 93.5% renewable energy.[16] The Kenya Power and Lighting Company (KPLC) is the sole distributor of electricity in Kenya, managing both the national grid and off-grid stations in the northern regions. Notably, KPLC has more than doubled electricity access in Kenya, increasing household connectivity from 26% in 2013 to 77% in 2018.[17]

Kenya's commitment to renewable energy is underscored by its efforts to increase the share of renewables in its energy mix to 100% by 2030. Key strategies include promoting renewable energy through Rural Electrification and Renewable Energy Cooperation (REREC), which focuses on technologies like biodigesters and hydropower plant expansion. Other goals include improving electricity access, with plans to connect 2.3 million more customers, install 90,000 transformers, and develop off-grid solutions like mini-grids. In addition, clean cooking fuels such as liquified petroleum gas (LPG) and biogas, geothermal energy expansion, and the protection of energy infrastructure using eco-friendly materials are also prioritized.[18]

Kenya has already launched key projects such as the Lake Turkana Wind Farm, Africa's largest wind power project, and rural electrification initiatives to improve access in remote areas.[19] The country has made remarkable progress in boosting its renewable energy capacity. Currently, around 10% of the country's electricity is generated from renewable sources, including geothermal, wind, and solar power. The 310 MW Lake Turkana Wind Farm, one of the largest in Africa, has significantly contributed to this success. Furthermore, the Kenya Solar Electrification Program has brought solar home systems to rural areas, improving energy access for previously underserved communities. In addition to its renewable energy efforts, Kenya is emerging as a key player in East Africa's growing oil and gas sector.Since 2012, multiple onshore oil discoveries by Tullow Oil have generated excitement about the country's potential. Currently, there are 63 oil exploration blocks, 37 of which have been licensed to international oil companies, while one is held by the National Oil Corporation of Kenya (NOCK).[20]

SOUTH AFRICA

South Africa is an energy-intensive country and a significant emitter of greenhouse gases, primarily due to the dominant role of coal in its energy mix and the industrial sector's substantial contribution to the nation's GDP. Currently, 71% of the country's primary energy consumption and 93% of its electricity production come from coal. South Africa is similarly working on significant projects as Kenya to diversify its energy sources, focusing on solar and wind energy to improve access to remote areas.[21] In its NDC, South Africa has committed to reducing its greenhouse gas emissions by 34% by 2025 compared to 2009 levels.[22] Additionally, low energy efficiency has been perpetuated by historically low energy prices.[23] In response to these challenges, South Africa has set a renewable energy strategy with a goal of producing 42% of its energy from renewable sources by 2030.

In recent years, the country has made notable progress in diversifying its energy mix, installing approximately 3,500 MW of solar photovoltaic (PV) capacity and 2,000 MW of wind power.[24] As part of its Integrated Energy Resources Plan, South Africa has initiated several large-scale renewable energy projects, including solar parks and wind farms.[25] The Independent Power Producer (IPP) program has been instrumental in these developments, leading to the establishment of multiple solar and wind farms that have increased the share of renewables in the national energy mix. Successful projects such as the 100 MW Kathu Solar Park highlight the strides South Africa has made toward diversifying its power generation capacity and reducing its reliance on coal.

Yogesh Dangi via Unsplash

GAPS AND CHALLENGES TO ADVANCING RENEWABLE ENERGY FOR A JUST TRANSITION

Despite progress made in expanding clean energy infrastructure and policy frameworks, Africa's ambitious renewable energy commitments outlined in its NDCs, implementation remains hindered by significant barriers. Financial constraints, technological limitations, weak regulatory mechanisms, and socio-economic disparities collectively create barriers to scaling up renewable energy solutions. In particular, access to financing, policy coherence, and public participation play crucial roles in determining the success of these initiatives.

Addressing these challenges requires a multi-faceted approach that integrates innovative financial instruments, robust regulatory frameworks, and inclusive development strategies. As highlighted by reports from the International Renewable Energy Agency (IRENA) and the African Development Bank (AfDB), bridging these gaps is essential for ensuring a just energy transition in Africa while enhancing economic resilience and energy security. More critically, if these targets are pursued without centring just transition principles, the challenge is not just about scaling renewables, it is about missing the broader goal of a fair and inclusive transition. Meeting investment targets alone won't deliver meaningful change unless the path to achieving them actively addresses equity, livelihoods, and social justice. A just transition requires more than hitting investment or generation targets; it demands that the shift to renewables actively supports decent work, community empowerment, and access to affordable, clean energy for all. Addressing the barriers to renewable energy, therefore, is not just a technical or financial imperative, it is a social and developmental one.

1. FINANCIAL & TECHNICAL BARRIERS

Financial and technical barriers play a significant role in the challenges faced by renewable energy projects in Africa. Financial and technical barriers not only slow the pace of renewable energy deployment in Africa, they also undermine the equity and inclusivity at the heart of a just energy transition. unaddressed, the transition risks becoming unjust, delivering clean energy to a few while leaving behind those who need it most. Overcoming these challenges requires integrating just transition principles into energy and climate planning, including NDCs, to ensure that solutions are not only green but also fair, inclusive, and rooted in local development needs.

Limited Finance Access

A major barrier to renewable energy projects is limited access to finance, driven by weak local financial markets, lack of specialised lenders, and the high upfront costs of green infrastructure, which make long-term credit difficult to secure, and making it hard for local actors to participate in the transition.[26] This challenge is particularly acute in the off-grid sector, which holds enormous potential to expand energy access in remote and underserved areas. A report by the AfDB highlights how companies in countries like Ghana, Kenya, Nigeria, and Tunisia often face prohibitive interest rates or are denied credit altogether due to perceived risk. Local currency financing – critical for protecting projects from exchange rate volatility – is scarce, despite its potential to enhance financial viability, particularly for solar-as-a-service providers that offer affordable, decentralised energy solutions.

Some progress has been made in developing innovative financial solutions, such as risk-sharing programs and local currency guarantees for energy projects. The African Development Bank, through its Sustainable Energy Fund for Africa (SEFA), is actively working to catalyse investments in decentralised energy access. Stakeholders emphasise that structured insurance and guarantee schemes are crucial for enabling local currency financing in the off-grid renewable energy sector. To scale these solutions, African countries must embed just transition principles into their NDCs, explicitly linking renewable energy targets with strategies to expand inclusive financing. This includes support for community ownership models, tailored financial instruments for small-scale developers, and mechanisms that promote social co- benefits such as job creation and energy affordability.

Perceived Risk

Investors often perceive renewable energy projects in Africa as high risk due to factors such as political instability, currency fluctuations, and regulatory uncertainties, which lead to higher financing costs and risk aversion, ultimately limiting the volume of investments.[27] For example, the energy sector in Kenya, particularly in geothermal development, faces risks related to political stability, regulatory changes, and infrastructural issues. These uncertainties can deter foreign investments, despite the country's high potential for renewable energy expansion.[28] In South Africa, perceived risk is influenced by factors such as government policy changes and economic instability. Such an environment has particularly impacted sectors like mining, which are heavily dependent on global commodity prices and local regulatory changes.

These risks disproportionately affect projects that could deliver social benefits such as energy access, job creation, and local ownership, core elements of a just transition. As a result, investment flows tend to favour large-scale, low-risk projects that often bypass vulnerable communities. Integrating just transition principles into NDCs can help reduce perceived risks by promoting policy stability, inclusive planning, and social co- benefits, creating a more attractive and equitable investment environment.

Lack of Innovative Financing Mechanisms

A persistent barrier lies in the limited capacity to operationalise innovative financing instruments—such as green funds, climate bonds, and public-private partnerships—in a manner that aligns with Africa's specific development contexts and the practical realities of local projects. In Kenya, despite growth in geothermal, solar, and wind, access to tailored financing remains limited, particularly for long-term, high-impact initiatives. Programs like the Global Ecosystem-based Adaptation (EbA) Fund help bridge gaps by supporting local projects, but financing remains fragmented and inconsistent, particularly for initiatives requiring long-term investment decisions.

Technology Gaps

Technology gaps present a major obstacle to renewable energy deployment across Africa, increasing costs and limiting the ability to build and maintain renewable energy infrastructure locally.[29] In Kenya, although there have been significant strides in mobile banking (e.g., M-Pesa) and tech startups, major challenges remain. A significant digital divide persists, with rural areas experiencing lower internet access, reduced levels of digital literacy, and inadequate infrastructure. For example, only about 40% of Africa's population, including Kenya, has reliable internet access. In South Africa, despite a strong tech ecosystem, stark digital divides persist, with limited access to digital training and connectivity, especially among disadvantaged groups. These gaps constrain inclusive participation in the energy transition, excluding

Lack of Expertise and Training

A shortage of skilled professionals in renewable energy is a key barrier to both infrastructure development and the realisation of a just energy transition. Many African countries, including Kenya and South Africa, face gaps in technical expertise needed to design, install, and manage clean energy systems.[30] In South Africa, there are significant skills shortages, particularly in engineering, planning, and finance within local governments.[31] These shortages are exacerbated by high turnover rates and inadequate training frameworks. Similarly, in Kenya, the energy sector struggles with a limited pool of skilled professionals, especially in emerging technologies like renewable energy, which leads to inefficiencies and slow progress in infrastructure projects. These skills deficits limit local participation in the energy transition, restrict job creation, and increase dependency on external contractors. By integrating just transition principles into NDCs, countries can prioritise investments in workforce development, vocational training, and educational reform, ensuring that the transition builds local capacity, creates decent work, and empowers communities.

Inadequate Infrastructure

Outdated and insufficient infrastructure poses a critical barrier to renewable energy integration and the broader goal of a just energy transition. Unreliable electricity grids, poor transport networks, and limited energy storage capacity undermine efforts to scale clean energy systems.[32]

In Kenya, inadequate road infrastructure, marked by poor maintenance, traffic bottlenecks, and inefficiencies at key transit points like the Mombasa port, hampers the timely and cost-effective transport of renewable energy components, posing a significant barrier to their implementation.[33] Moreover, despite progress in renewable energy, gaps in transmission infrastructure and limited access in remote areas restrict energy distribution and economic inclusion.[34] In South Africa, aging coal infrastructure and frequent load shedding hinder energy reliability, while delays in upgrading transport and logistics systems increase costs and inefficiencies.while delays in upgrading transport and logistics systems increase costs and inefficiencies.

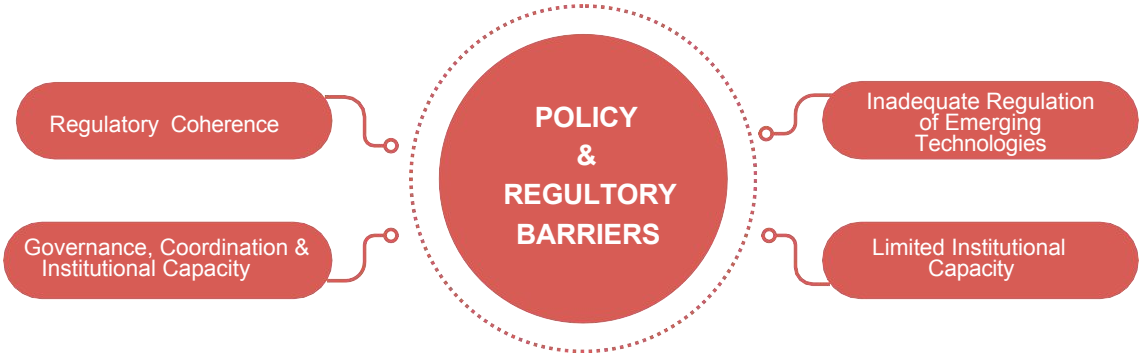
Despite investments in renewable energy, the transition has been slow, affecting the reliability of the power supply.[35] Rising transportation costs, outdated systems, and inefficiencies in planning and communication continue to hamper the logistics sector.[36] These infrastructural issues significantly hinder the

communities from the jobs, entrepreneurship, and education opportunities it could offer. Without investments in digital infrastructure and skills, the transition risks deepening existing inequalities.

ability to effectively integrate renewable energy sources into existing electricity grids. By embedding just transition principles into NDCs, governments can guide infrastructure investments toward underserved areas, prioritising upgrades to electricity grids, transport, and storage systems that connect marginalised communities to clean energy. This ensures that the energy transition delivers social benefits like job creation, improved energy access, and reduced regional inequality, making it not only environmentally sustainable but also socially just and economically inclusive.

2. POLICY & REGULATORY BARRIERS

Robust and coherent policy frameworks are essential for driving an inclusive and equitable energy transition. Strengthening policy and regulatory frameworks is essential for advancing the energy transition by enabling favourable policies, offering renewable energy subsidies, and creating conditions that attract private investment.[37] Gaps such as misaligned regulations, outdated frameworks, and limited responsiveness to new technologies can slow renewable energy deployment and exclude vulnerable groups.



Regulatory Coherence

Numerous African nations encounter challenges related to the alignment of their energy policies, where renewable energy development objectives are not always aligned with economic and industrial policies. This inconsistency can create barriers for investors and slow down renewable energy projects.[38] For example, Kenya has made significant strides in the fintech space, particularly through mobile banking services such as M-Pesa. Regulatory bodies, like the Central Bank of Kenya (CBK), have established frameworks to manage mobile money services, ensuring consumer protection and financial stability. However, challenges persist in harmonising regulations across different sectors, especially where telecommunications and financial services overlap. The introduction of cryptocurrencies and the expansion of digital finance have presented regulatory gaps that Kenyan regulators are currently addressing by updating existing frameworks.[39]

In South Africa, regulatory coherence is evident in the management of digital financial services. The South African Reserve Bank and its Financial Sector Conduct Authority have actively regulated fintech and cryptocurrencies, aiming to integrate financial services with new technologies while maintaining financial integrity. The country's regulations on digital services, such as e-commerce and financial technology, aim to balance innovation with consumer protection. Additionally, a strong regulatory framework around data privacy and financial services helps mitigate risks.[40]

Lack of coordination between climate, energy, and industrial policies can result in conflicting incentives, bottlenecks, and missed opportunities for inclusive growth. Embedding just transition principles into NDCs can promote cross-sector policy alignment, ensuring that renewable energy efforts support broader goals like job creation, digital inclusion, and social equity, while providing clearer pathways for public and private sector collaboration.

Inadequate Regulation of Emerging Technologies

Emerging renewable technologies such as energy storage, smart grids, and marine energy often outpace existing regulatory frameworks, limiting their adoption and integration into national energy systems.[41] Without updated policies, innovation is stifled, and investments are delayed.

Kenya's experience with mobile money M-Pesa, while transformative, shows how rapid technological growth can outstrip regulation, leading to challenges in fraud prevention, data protection, and consumer rights. South Africa faces similar issues, with evolving technologies like AI and blockchain advancing faster than current regulatory safeguards can manage, and introducing potential risks related to data misuse and security.[42] Regulations can be designed to protect vulnerable communities from data misuse or exploitation in digital energy systems, while also ensuring that new technologies create decent jobs and expand energy access. By embedding these principles into NDCs, governments signal their commitment to inclusive innovation, encouraging cross-sector collaboration, capacity building, and safeguards that enable new technologies to serve broader development and climate justice goals, rather than deepen existing inequalities.

Governance, Coordination

Effective governance and inter-agency coordination are critical to implementing renewable energy strategies and achieving just transition goals. Fragmentation of responsibilities across different levels of government and agencies can result in a lack of coordination in implementing energy policies. Ineffective governance can delay project approval, create conflicts of interest, and limit the effectiveness of renewable energy initiatives.[43] Kenya's National Climate Change Action Plan (NCCAP)[44] illustrates a structured approach to addressing climate change impacts by coordinating efforts across sectors like agriculture, water, energy, and transport to promote sustainable development.

However, other sectors, such as health, have experienced coordination challenges that mirror broader difficulties in aligning national and subnational efforts.

For a just transition, coherent governance is essential to ensure that climate actions are well-integrated across sectors and institutions, with clear roles, inclusive decision-making, and efficient resource use. Embedding these principles in NDCs can strengthen institutional frameworks, promote local participation, and improve transparency, ensuring that the energy transition benefits all communities equitably. This can be done by including clear commitments in the NDC to build the capacity of government agencies and local authorities through training, technical support, increased staffing, and resource allocation.

Limited Institutional Capacity

Weak institutional capacity remains a major barrier to renewable energy implementation in many African countries. Energy management institutions often lack the resources, technical skills, or qualified personnel needed to effectively oversee and implement renewable energy policies and projects, resulting in delays in project planning, implementation, and monitoring.[45]

In Kenya, similar capacity gaps in the health sector have hindered service delivery under the Kenya Health Sector Strategic Plan (KHSSP).[46] In South Africa, fragmented structures and staffing shortages have slowed the enforcement of water legislation, particularly the National Water Act, 1998.[47] These governance issues are mirrored in the energy sector.

3. SOCIO-ECONOMIC BARRIERS

Socio-economic factors play a critical role in the implementation of renewable energy initiatives across Africa. Addressing these challenges through a just transition lens is essential to ensure that the shift to renewable energy is fair, inclusive, and equitable, leaving no one behind. The principles of a just transition emphasise the creation of decent jobs, social protection, equitable access to clean energy, and the inclusion of vulnerable populations in decision-making processes.[48 & 49]

Poverty and Access to Renewable Energy

Poverty represents a major barrier to renewable energy adoption in Africa, particularly for low-income communities unable to afford the high upfront or maintenance costs of renewable technologies, despite the long-term benefits of these investments. In Kenya, many rural communities lack the financial resources to adopt solar or wind energy solutions, despite subsidies and support programs. Similarly, economically marginalised communities face high-cost barriers to integrating renewables into their daily lives.[50] Without targeted interventions, these financial barriers risk excluding vulnerable populations from the benefits of the energy transition.

Embedding just transition principles into NDCs can help address this by mandating inclusive financing mechanisms, such as targeted subsidies, grants for mini-grids, or affordable solar home systems. These efforts ensure that clean energy reaches the poorest communities, making the transition both equitable and sustainable.

For example, governments can provide financial support for solar home systems or mini-grids in rural areas, ensuring that the benefits of renewable energy reach the most vulnerable populations.[51] This aligns with the just transition principle of equitable access to clean energy, ensuring that no one is left behind.

Political Instability and Economic Conditions

Political instability and economic fluctuations can disrupt renewable energy projects and discourage foreign investment. In regions where political stability is fragile, the construction and maintenance of energy projects may be delayed or suspended, limiting the progress of sustainable energy initiatives. In Kenya, political conflicts and land disputes have occasionally hindered the timely development of renewable energy projects, creating uncertain investment environments.In contrast, in South Africa, while political instability has not been as pronounced, issues like policy inconsistency have led to delays in renewable energy project approvals.[52]

Mitigating these risks, renewable energy policies must be designed to ensure policy coherence and stability, providing a predictable environment for investors and developers. This includes creating long-term energy strategies that are resilient to political changes and economic fluctuations, ensuring that renewable energy projects can proceed without disruption.[53] Embedding just transition principles into NDCs means committing to stable, coherent, and long-term energy policies that are resilient to political shifts and economic downturns. This aligns with the just transition principle of long-term planning and stability, which is essential for a sustainable energy transition.

Public Awareness and Community Participation

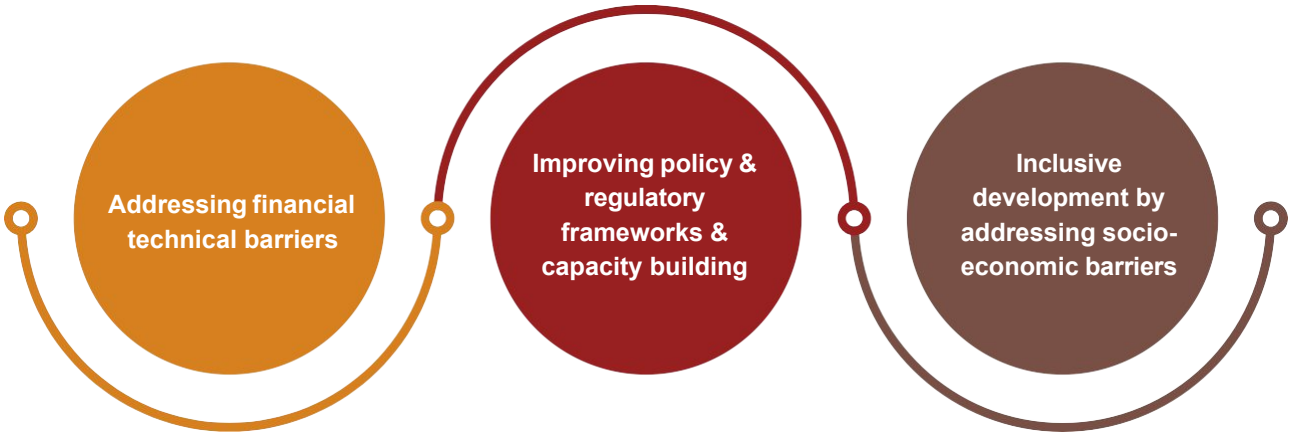
Public awareness and community engagement are critical to the sustainability of renewable energy initiatives and the achievement of just transitions. A just transition demands that communities—especially those most affected—are informed, empowered, and involved throughout the energy planning process. Embedding this into NDCs means including commitments to public education, local capacity-building, and structured community consultation processes.

In Kenya, solar energy initiatives have gained traction, but uptake remains slow in some regions due to a lack of knowledge and trust in the technology. Education and training programs are essential to familiarise populations with renewable technologies and demonstrate their reliability and boost adoption rates, ensuring long-term support. South Africa has also made strides in involving communities in renewable energy projects, particularly through its Renewable Energy Independent Power Producer Procurement Program (REIPPPP). However, gaps remain in ensuring that communities have a say in decision- making processes, which can affect the long-term sustainability of these projects.[54] This aligns with the just transition principle of inclusive decision-making, which ensures that communities, particularly vulnerable and marginalised groups, are actively involved in the planning and implementation of renewable energy projects. By fostering local partnerships and creating platforms for community engagement, renewable energy projects can be tailored to meet the specific needs of local populations, ensuring that the benefits of the energy transition are shared equitably.[55]

pixelperfektion via Unsplash

POLICY RECOMMENDATIONS FOR THE INTEGRATION OF JUST TRANSITION PRINCIPLES IN NDCS

To effectively incorporate just transition principles into the NDCs of African countries, it is essential to confront existing financial and technical barriers. Furthermore, concerted efforts should be focused on enhancing policy and regulatory frameworks, alongside strengthening capacity-building initiatives. Ultimately, inclusive development must be integrated with strategies to address socio-economic and economic obstacles.



ADDRESS FINANCIAL & TECHNICAL BARRIERS

Integrate financing strategies into NDCs

Integrate financing strategies into NDCs that promote inclusive access to capital, such as blended finance, concessional loans, and guarantee mechanisms that de-risk small-scale and community-based renewable energy projects. Strengthen national green finance frameworks to support local financial institutions in lending to energy access initiatives.

Address low-risk perceptions

Establish clear regulatory frameworks and long-term renewable energy plans, while incentivising investment through risk-sharing instruments (e.g., partial credit guarantees, political risk insurance) tied to just transition outcomes such as local job creation and energy access.

Support enhanced training and skills development

Integrate workforce development into NDC implementation plans, with a focus on vocational training, apprenticeships, and formal education in clean energy and climate-resilient sectors. Establish national just transition skills strategies to ensure marginalised populations, including youth, women, and informal workers, can participate in and benefit from the energy transition.

Promote innovative financing mechanisms

Mandate the development and scaling of innovative financing tools within NDCs, such as climate bonds, local green banks, and public-private partnerships, tailored to African contexts. Encourage collaboration with philanthropic and impact investors to create catalytic capital pipelines for community-led and decentralised energy solutions.

Address technology gaps

Include targeted technology transfer, local innovation support, and digital infrastructure development in NDCs. Prioritise investments in connectivity and localised clean tech solutions, and promote partnerships that enhance access to affordable, context-appropriate technologies across rural and urban areas.

Support the potential for enhanced infrastructure

Align NDC goals with national infrastructure development plans to prioritise investment in renewable energy transmission, rural electrification, and smart grid systems. Embed equity-focused criteria to ensure that infrastructure upgrades benefit underserved regions and support inclusive economic development.

IMPROVING POLICY & REGULATORY FRAMEWORKS & CAPACITY BUILDING

Improve regulatory coherence and establish clear regulatory frameworks

Develop transparent regulatory frameworks for renewable energy projects, simplify permitting procedures, set technical standards, and create risk management mechanisms to attract investors.[56] Include mandates in NDCs for cross-sectoral policy alignment between climate, energy, industrial, and labour policies. Establish inter-ministerial teams to align renewable energy goals with economic and industrial plans. For example, linking projects to rural development programs that include training initiatives and economic opportunities for local communities can enhance the overall coherence and impact.[57]

Enhance Governance and Coordination

Incorporate governance reform goals into NDCs, including mechanisms to improve coordination between national, regional, and local governments. Establish clear roles and responsibilities across institutions, with accountability systems tied to just transition metrics (e.g., job creation, community participation, regional equity). Support decentralised governance models to empower local governments in climate action planning and implementation.

Enhance regulation of emerging technologies and innovation-support policies

Promote research, development, and the adoption of innovative renewable technologies by providing grants, funding pilot projects, and fostering technological advancements.[58] Embed just transition considerations into NDCs by calling for the development of forward-looking, inclusive regulatory frameworks for emerging technologies such as energy storage, smart grids, and marine energy. Ensure these frameworks include provisions for data privacy, consumer protection, and equitable access.

Strengthen institutional capacity

Include institutional capacity-building as a core component of NDC implementation plans. Prioritise technical training, staff recruitment, and resource allocation for key agencies responsible for energy and climate policy. Promote partnerships with universities, vocational institutions, and international agencies to build local expertise in clean energy management, monitoring, and oversight. Improve the ability of government institutions and regulatory agencies to support renewable energy projects through capacity-building programs for policymakers and civil servants involved in implementing NDCs.[59] Create platforms and networks for renewable energy stakeholders, such as working groups, forums, and centres of expertise, to facilitate the exchange of knowledge, experiences, and best practices.[60] Partnering with local organisations, cooperatives, and NGOs ensures alignment with community needs and mobilising resources to address socio-economic challenges.

INCLUSIVE DEVELOPMENT BY ADDRESSING SOCIO-ECONOMIC BARRIERS

Enhance access to renewable energy in low-income areas

Embed targeted financing mechanisms into NDCs such as subsidies, tax incentives, concessional loans, or pay-as-you-go models to make renewable energy affordable for low-income households. Prioritise the deployment of mini-grids and solar home systems in underserved rural and informal areas, ensuring equitable access to clean energy. Financial support programs can lower upfront costs, making these technologies more attractive and attainable for vulnerable communities.[61]

Mitigate impacts of political and economic instability

IEnsure NDCs include commitments to long-term, cross-party-supported energy strategies and regulatory consistency. Build institutional safeguards and bipartisan frameworks that insulate climate and energy goals from political shifts, and promote economic resilience through local green job creation and diversified energy supply chains.

Improve Local community participation and awareness

Engaging local communities early in renewable energy planning, through consultations, training, and forums, is crucial for gathering feedback, aligning projects with local needs, and building strong community support. Involving communities in project management enhances sustainability, while awareness campaigns foster local acceptance and build capacity for clean energy solutions.[62] Incorporate structured community engagement requirements into NDC implementation plans such as participatory energy planning, local energy committees, and benefit-sharing frameworks. Fund national awareness campaigns and renewable energy literacy programs to build trust and social ownership of the energy transition.

CONCLUSION

As Africa advances its renewable energy ambitions through updated NDCs, integrating just transition principles presents a vital opportunity to overcome persistent barriers to implementation. The transition to renewable energy in Africa, as outlined in the NDCs of various African countries, represents a critical pathway toward achieving sustainable development and climate resilience. The NDCs provide a strategic framework for integrating renewable energy targets with social and economic development goals, ensuring that the energy transition is both environmentally sustainable and socially equitable. As this policy brief has highlighted, the operationalisation of a just transition in Africa faces significant challenges, including financial barriers, policy and regulatory gaps, and socio-economic disparities.

To accelerate the transition to renewable energy, African countries must strengthen financial mechanisms through innovative financing, improve policy and regulatory frameworks, and address socio-economic barriers through inclusive development strategies. mproving regulatory alignment, developing innovative financing mechanisms, and ensuring active community engagement across all levels are crucial.

Moreover, implementing targeted subsidies, promoting community involvement, and offering technical training are vital to achieving an inclusive and equitable energy transition.

In conclusion, while Africa's renewable energy ambitions are commendable, the path to a just transition requires a multi- faceted approach that addresses financial, technical, policy, and socio-economic challenges. Africa can leverage its abundant renewable resources to achieve sustainable development, reduce energy poverty, and build resilience to climate change by fostering collaboration among governments, the private sector, and international organisations. The upcoming deadline (September 2025) for updated NDCs presents a key opportunity for African countries to embed a just transition, which is crucial not only for climate resilience but also for fostering inclusive and sustainable development. The future of renewable energy in Africa is promising, but it hinges on the ability to overcome the above-mentioned barriers and ensure that the benefits of the energy transition are shared equitably across all segments of society.

REFERENCES

1. NDC Partnership. 2021. NDC Partnership: Facilitating Clean Energy Transitions in Sub-Saharan Africa
2. Climate finance: nearly US$3 trillion needed to implement Africa's NDCs
3. ILO. 2015. Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All.
4. Kenya's First Nationally Determined Contribution (NDC)
5. South Africa NDC. 2021. South Africa's Nationally Determined Contribution (NDC)
6. Climate Action Network (CAN). 2021. Just Transition in Nationally Determined Contributions(NDCs).
7. African Development Bank (AfDB). 2022. Financing a Just Transition in Africa: Challenges and Opportunities.
8. Op. cit Kenya NDC. 2020.
9. IRENA & CPI. 2020. Global Landscape of Renewable Energy Finance.
10. IRENA. 2021. Renewable Energy Statistics 2021.
11. IHA. Ethiopia - Grand Ethiopian Renaissance Dam (GERD).
12. Webuild Worldwide. 2022. Ethiopian Prime Minister starts first turbine of Grand Ethiopian Renaissance Dam, Webuild's mega hydropower project for production of renewable energy.
13. IRENA. 2024. Renewable Energy Statistics 2024.
14. AVEVA. Industrial ingenuity begins with a moment of insight.
15. World Bank. 2021. Tracking SDG 7: The Energy Progress Report 2021.
16. Suman, A. 2021. Role of renewable energy technologies in climate change adaptation and mitigation: a brief review from Nepal.
17. International Trade Organzation of America. 2024. Kenya Country Commercial Guide: Energy -Electrical Power Systems.
18. Ibid.
19. Rapid Transition Alliance. 2022. Doing development differently: How Kenya is rapidly emerging as Africa's renewable energy superpower.
20. Ibid.
21. Akinbami, O.M., Oke, S.R. & Bodunrin, M.O. 2021. The state of renewable energy development in South Africa: An overview.
22. Op. cit South Africa NDC. 2021.
23. Department of Mineral Resources & Energy (DMRE). 2019. Integrated Resource Plan (IRP).
24. Agence Française de Développement (AFD). 2008. Promote Energy Efficiency in South Africa.
25. Op. cit. DMRE. 2019.
26. Op. cit. IRP. 2019.
27. Op. cit. AfDB. 2022.
28. OECD/The World Bank. 2019. Fiscal Resilience to Natural Disasters: Lessons from Country Experiences.
29. Africa Energy Portal. 2024. Kenya IRA Unveils Underwriting Facility to Boost Geothermal Investments.
30. IRENA. 2023. Renewable Energy Statistics 2023.
31. World Bank. Renewable Energy Public-Private Partnership.
32. Dullah Omar Institute. 2020. Skills mismatch in South African local government.
33. Ibid.
34. Kuteyi, D. & Winkler, H. 2022. Logistics Challenges in Sub-Saharan Africa and Opportunities for Digitalization.
35. Ndii, D. 2022. Africa's Infrastructure-Led Growth Experiment Is Faltering. It Is Time to Focus on Agriculture.
36. Op. cit. Kuteyi & Winkler. 2022.
37. Op. cit. Ndii. 2022.
38. Op. cit. Straton. 2024.
39. OECD & World Energy Outlook. 2004. Worls Energy Outlook 2004.
40. Global Governance Africa. 2022. Legal and regulatory issues in Africa's digital sphere.
41. Ibid.
42. Solarin, S. A., Bello, M. O., & Tiwari, A. K. 2022. The impact of technological innovation on renewable energy production: Accounting for the roles of economic and environmental factors using a method of moments quantile regression.
43. Bowmans. 2024. South Africa: Data protection considerations in the National Policy on Data and Cloud.
44. Karlsson-Vinkhuyzen, S. I. 2010. The United Nations and global energy governance: past challenges, future choices.
45. KCCAP. 2013. Kenya National Climate Action Plan (NCCAP).
46. United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP). 2001. High-level regional meeting on energy for sustainable development.
47. Ministry of Health, republic of Kenya. 2018. Kenya Health Sector Strategic Plan: July 2018–June 2023.

48. Kenya Law. Kenya National Water Act, 1998.
49. ILO. 2015. Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All.
50. Op. cit. Climate Action Network. 2021.
51. UNDP. 2021. UNDP's Energy Strategy: Delivering Sustainable Energy in a Changing Climate.
52. Op. cit. World Bank. 2021.
53. Op. cit. AfDB. 2022.
54. Op. cit. OECD. 2019.
55. IEA. 2024. Clean Energy Innovation Policies in Emerging and Developing Economies.
56. Op. cit. Climate Action Network. 2021.
57. Rystad Energy. Renewables & Power Solution.
58. Spalding-Fecher, R., Winkler, H., & Mwakasonda, S. 2005. Energy and the World Summit on Sustainable Development: What next?
59. Moreno, J.B. 2012. Back to the Future of Green Powered Economies.
60. United Nations Development Programme (UNDP). 2009. Capacity development: A UNDP primer.
61. Global Energt Monitor. Energy Networks and Support Platforms
62. Richard, M. O. 2025. Transforming solar energy accessibility in Kenya: The role of government in regulating pricing and promoting equity in the solar market.
63. Kilonzo, D. M. 2013. Identifying and managing the market barriers to renewable energy in Kenya (Bachelor's thesis).

OJTA
Operationalising a Just Transition in Africa

This Policy Brief, Operationalising a Just Transition in Africa "Integrating just transition principles into updated NDCs to help address barriers to renewable energy implementation in Africa" is an output of the Operationalising a Just Transition in Africa (OJTA) research project. This work was carried out with the aid of a grant from the International Development Research Centre (IDRC), Ottawa, Canada.

The views expressed herein do not necessarily represent those of the IDRC or its Board of Governors, or of the entities delivering OJTA. OJTA's research consortium comprises SouthSouthNorth, the Africa Research & Impact Network and the University of Pretoria. For more information and further guidance on using this material, please contact: info@southsouthnorth.org

IDRC · CRDI
International Development Research Centre
Centre de recherches pour le développement international
Canada

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ARIN
AFRICA RESEARCH & IMPACT NETWORK

SOUTH
SOUTH
NORTH