

Policy Brief



**KENYA CLIMATE
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Uniting Voices and Action
on Climate Change

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LINKING SMALL SCALE ENERGY COMMUNITY ACTIONS TO SDGs AND NDC IMPLEMENTATION

December 2020 By Wycliffe Amakobe and Tom Randa

Summary

This policy brief highlights how small-scale community energy systems are facilitating access to clean energy for achieving Sustainable Development Goals (SDGs) and Kenya's Nationally Determined Contribution (NDCs). It also outlines select investments and innovations in community scale energy projects. The final section presents an analysis of gaps and recommendations. Efficient modern energy is an enabler for environmental sustainability and essential in spurring socio-economic and physical changes necessary for growth and development. In the health sector for instance, provision of reliable energy is critical for the functioning of intensive care unit facilities. Agriculture sector on the other hand heavily relies on energy for powering farm machineries including water pumping, land preparation, harvesting and post-harvest management processes. In education sector, efficient modern energy is known to allow learners to study extra hours after nightfall and carryout research on the internet as well as conveniently charge phones for communication. COVID- 19 pandemic for instance exposed how limited access to modern energy left many students in higher education struggling to keep a breast with on-line studies through web platforms in areas not connected to the grid when majority of Universities resumed virtual learning in October-November 2020. It is impossible to unpack modern energy without considering climate change, a phenomenon that has caused world leaders to conceitedly find solutions to limiting global temperature rise this century well below 20°C above pre-industrial levels. Countries demonstrate commitment to cutdown greenhouse gas (GHG) emissions through preparation of NDCs that must be submitted to United Nations Framework Convention for Climate Change (UNFCCC) by all binding parties.

Key findings:

- SDG 7 report indicates that Kenya's access rate to clean cooking fuels was 10 percent in 2018
- The Cabinet Secretary for Environment and Forestry should submit an agenda to the cabinet for urgent convention of Climate Change Council for the Climate Change Fund to be operationalized
- Part VIII of the Energy Act, 2019 requires Counties to establish Energy Efficiency Fund, this calls for urgent legislations at County level necessary for operationalization of the Act
- Stakeholders should prioritize capacity building of community leadership (grassroot) to develop bankable proposals and benefit from available climate financing among other windows
- NDC advocacy should take a bottom-up approach to ensure that communities understand what they entail and effectively participate in their implementation
- Integration of NDCs targets in County Integrated Development Plans and Annual Plans need to be prioritized while engaging all stakeholders from grassroot level.



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Figure 1: Fish frying along one of the beaches in L. Victoria

Overview convergence of community energy projects with SDGs and NDCs

- Kenya, recognizing the urgency underlying access to sustainable energy for all and associated achievement of Nationally Determined Contributions, has put in place a raft of measures. Various energy access projects are under implementation through both grid and off-grid options.
- In a study conducted by Boniface et al (2018), 67 percent of households interviewed in Bomet and Homabay Counties attributed lack of connectivity to the national grid as the main barrier to accessing electricity while 50 percent cited high connection costs. Consequently, 71 percent of the respondents cited high acquisition costs as the main barrier to owning solar energy products.
- Both adaptation and mitigation targets in the NDCs will not be achieved if business as usual trajectory continues to dominate. However, in some cases, community-scale energy projects have yielded fruits to the level of connecting several households through mini-grids, standalone solar home systems and energy centre solar kits which are operated through specific models. SDG7 report highlights that Kenya's access to clean cooking was 10 percent in 2018, a signal that clean cooking has not been prioritized (IEA et al, 2020).
- Cooking using unsustainable fuels is not only a threat to natural resources but also emits harmful Carbon monoxide and Carbon dioxide alongside various short lived climate pollutants such as particulate matter 2.5 and 10. Realizing the slow pace towards achievement of universal access to modern cooking by 2028, the Ministry of Energy launched a project to support households especially in underserved Counties to access improved cook stoves and solar for lighting and water pumping, hopefully the project will shift the paradigm. This initiative is implemented under the Kenya Off-grid Solar Access Project financed by World Bank.

Investments in community-scale energy projects

Micro-finance, local banks and multilateral banks are putting up strategies towards effective provision of finance in the energy sector in Kenya with calls to raft up policy and legislative frameworks

African Development Bank (AfDB)

AfDB approved a \$100 million financing package to the Facility for Energy Inclusion (FEI) (AfDB, 2018). FEI is a debt platform worth \$500 established to support small-scale projects implemented by energy companies in Africa. This was a step undertaken based on lessons from Sustainable Energy Fund for Africa (SEFA) launched in 2012. SEFA a multi-donor initiative providing risk capital and technical assistance for small-scale renewables of which AfDB noted appropriate national and sub-national legislation to be key enablers.

Kenya Climate Innovation Centre (KCIC) and Kenya Bankers Association (KBA) initiative

In November 2020, KCIC Group together with Kenya Bankers Association officiated a bilateral engagement aimed at strengthening green financing leveraging

on local climate change innovations and research while incorporating large commercials, financial institutions, and small and medium enterprises (SMEs). The partnership is expected to streamline financing challenges for climate sensitive innovations through Sustainable Finance Initiative and Inuka SME program (Kwame, 2020)

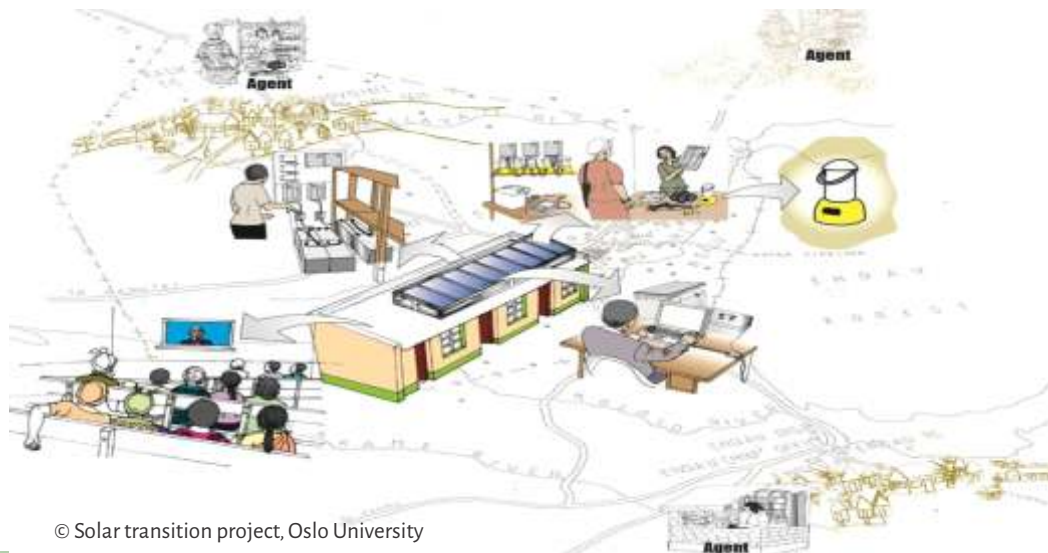
Ikisaya Village Energy Centre Project

The energy centre is based on a 6kW solar photovoltaic system which provides energy for lantern charging and renting, charging of mobile phones and information and technology services. Given the centre's location in the remote village of Endau, the project serves as a central joint for micro-business applications, entertainment shows and watching news. The initiative was pioneered by several non-governmental organizations and development partners who jointly sought to strengthen a

community-based organization under a project dubbed 'Solar transition' supported by Oslo University. Figure 2 below illustrates the energy centre model..

Marco Borero Company Solar PV in Nyeri County

The Marco Borero Company in Nyeri received funding from Sunref- French Development Agency (AFD) which aims to work with local banks for green growth. Through Cooperative Bank of Kenya, Sunref facility has invested \$1.8 million in the project with additional support from Renewable Energy Performance Platform to the tune of \$355,000 (Takouleu, 2020). A power purchase agreement has already been signed with Kenya Power and Lighting Company (KPLC). The plant is expected to contribute to greenhouse gas reduction targets in Kenya's NDC target of 32 percent by 2030.



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Figure 2: Ikisaya Energy Centre Model in Kitui County

SunCulture energy-agriculture nexus community project

SunCulture is a Kenyan start-up based in Nairobi revolutionizing agriculture through distribution of solar water pumps for irrigation. The water pumps are equipped with 300 W solar panels and a 440 Wh battery storage system. These batteries can hold four light bulbs, charge two telephones and a plug-in submersible water pump. To own the solar-powered water pump, each farmer pays between \$500 and \$1,000, compared to \$5,000 when the first systems were launched in the seedling (Magoum, 2020). Payment has been enabled through pay-as-you-go system. SunCulture raised \$14 million from

Energy Access Ventures (EAV), Electricité de France, Acumen Capital Partners and Dream Project Incubators. The project is expected to immensely contribute to emissions reduction as well as support coping mechanisms especially for rich agricultural lands in semi-arid areas.

World Wide Fund for Nature (WWF)-PPP Project in Kwale County

WWF is implementing a multi-SDG 'Public-private-people project' jointly with Kwale County government and local communities. The project aims at protecting over 30,000 hectares of terrestrial forest and mangrove

ecosystems in the county (WWF, n.d). The trio is influencing industries in the county to shift to modern technologies that are more efficient in terms of wood-energy combustion efficiency to reduce associated carbon footprint and ensure ecological conservation. Significant ingredient in the whole processes is the target to integrate ecosystem values into policies and plans at the county government level. Additionally, mangroves are known to sequester carbon besides serving as alternative sources of fuel and building materials. Alongi (2014) affirms that mangroves account for 14 percent of carbon sequestration by the global ocean and 1 percent of carbon sequestration by the world's forests.

Kenya's updated NDCs and linkage with community energy initiatives

- Kenya updated her Nationally Determined Contributions which were validated on 18th November 2020 by stakeholders. This led to the revised targets of 32 percent up from 30 percent in the previous targets from prior NDC document. GoK (2020) indicates an increase in Kenya's emissions by 65.2 percent between 1995-2015. Energy and deforestation contributed 38 percent of the emissions.
- The updated NDC document pledges to increase renewables in the energy generation mix and enhance efficiency across the different sectors. Mitigation priorities target to make progress towards achieving a 10 percent tree cover. This is critical given that majority of household cooking tasks are met by biomass, often exploited unsustainably. Adaptation options play a central role in community energy access given the vast innovations and technologies that are
- kept on low carbon emissions, Kenya's core consideration in the development agenda.
- The updated NDCs under environment and infrastructure (energy) adaptation priorities takes cognizance of need to promote efficient and sustainable energy exploitation and management. However, the community-level approach has not been explicitly emphasized.
- Several legislative frameworks are available especially at the national government level and county governments are expected to play a critical role in ensuring implementation through community consultations. Communities are likely to have a hand in the NDC prioritization and implementation at grassroot level if the action plan will be successfully integrated into County Integrated Development plans and annual plans.
- Modern energy for cooking has not been properly adopted by communities due to socio-cultural and economic challenges which calls for concerted efforts towards capacity building and lobbying for policies that unlock access to clean cookstoves by both national and local government.
- IEA et al (2020) links poor access to clean fuels for household cooking to heart diseases, stroke, chronic obstructive pulmonary disease, pneumonia, adverse pregnancy outcomes, and cancer. The report further alludes that the resulting pollution is not restricted at the household environment alone, hence disrupting regional environments. Ballis et al (2015) estimates that wood fuels contribute between 1 and 1.2 gigatons of Carbon dioxide equivalent which makes between 1.9 to 2.3 percent of global emissions.

Gaps and Recommendations

Gap identified	Recommendation
Some counties lack energy policy and legislation to incentivize and promote community energy innovations	<ul style="list-style-type: none"> National government and Council of Governors should arrange for regular consultative meetings between the two levels of government especially in line with domestication of required legislations and frameworks at the county government level
Delayed convenorship of the Climate Change Council has prevented operationalization of climate fund critical in stimulating green growth in communities	<ul style="list-style-type: none"> Cabinet Secretary in charge of Environment and Forestry to initiate discussions at the Cabinet level for Climate Change Council to urgently convene, guide and approve operation of climate change fund
Lack of over-arching framework for effective monitoring and evaluation of SDGs at the local level	<ul style="list-style-type: none"> Capacity building events should be organized by State department for Planning to sensitize County stakeholders on reporting framework for SDGs Climate change directorate to widely consult in the development of NDC reporting framework and implementation plan
Non-state actors are not motivated to report on SDG 7	<ul style="list-style-type: none"> SDG Forum-Kenya should reach out to actors involved in SDG 7 and encourage actors to participate in the voluntary reporting
Poor stakeholder coordination especially those working at grassroot level	<ul style="list-style-type: none"> Community based organizations should initiate a mapping of key stakeholders and agree on a coordination framework
Limited knowledge of existing opportunities for communities to tap into for funding	<ul style="list-style-type: none"> State and non-state actors should prioritize capacity building of communities to apply for funds from Adaptation fund, Multi-lateral Development Banks, Green Climate Funds, and other locally available funding opportunities
Lack of proper systems for project monitoring and evaluation	<ul style="list-style-type: none"> There should be proper systems and tool that are transparent and accountable for all project activities across phases with mechanisms of sharing outcomes and beneficiary impact
Poor enforcement of legislation and policies	<ul style="list-style-type: none"> Accountability, oversight, and enforcement institutions should be empowered through regular capacity building and training
Lack of continuous research and partnership with climate change and adaptation research institutions	<ul style="list-style-type: none"> Policy makers should foster long term partnership with research institutions for continuous research to inform decision making and implementation of NDCs and SDGs.

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