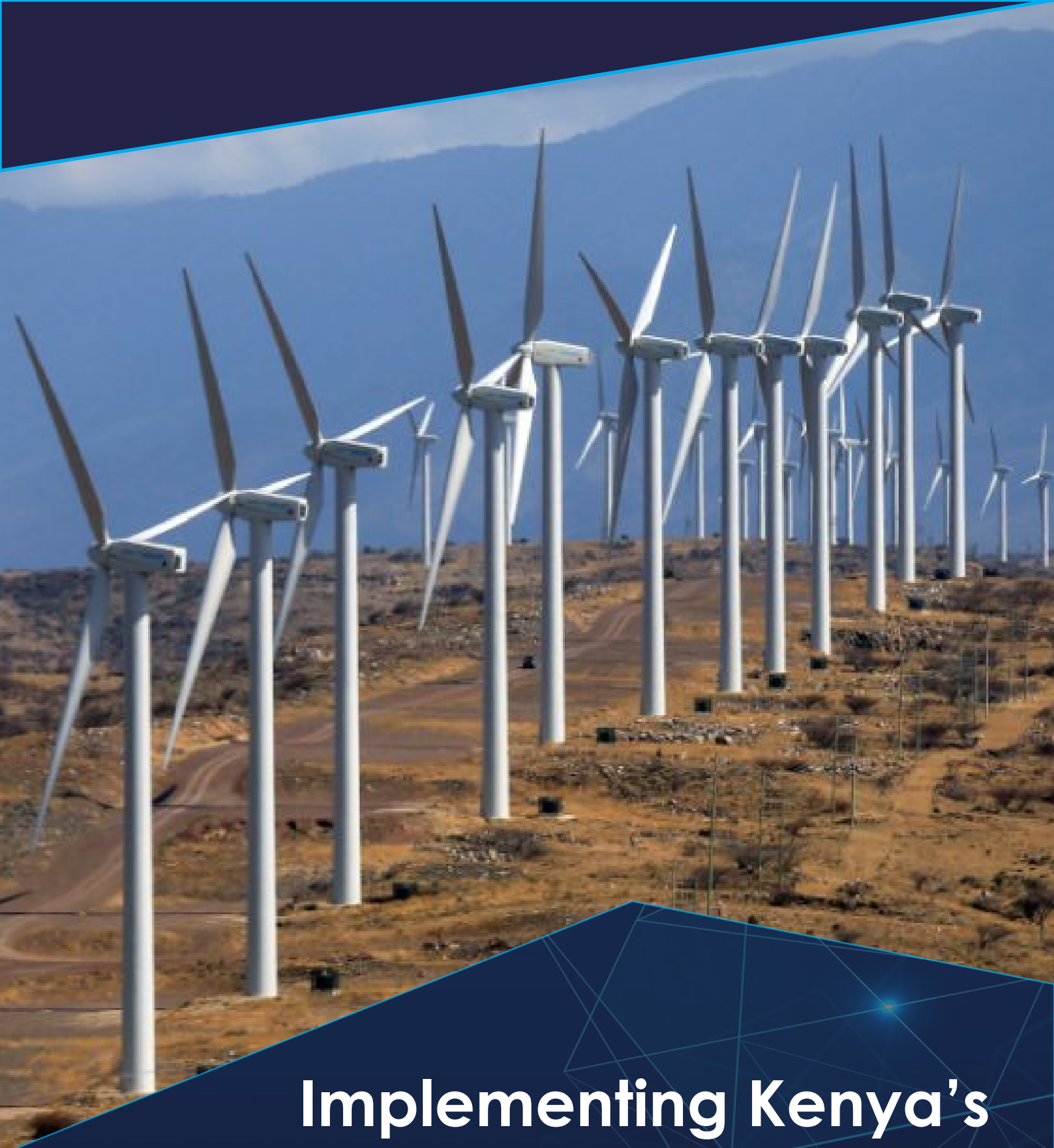


Implementing Kenya's Nationally Determined Contributions (NDCs)

A Summary Report



Introduction

Nationally determined contributions (NDCs) are national climate plans highlighting climate actions, including climate related targets, policies and measures that governments seek to implement in response to climate change, to contribute to global climate action and to fulfil the Paris Agreement (PA). Kenya's economy highly depends on natural resources which are already vulnerable due to climate change and its impacts. Climate change hazards such as droughts, erratic rainfall and flooding continue to negatively impact the country, making it both difficult and costly for Kenya to achieve its Vision 2030. It is therefore important for all sectors to develop using low-carbon technologies and adapt a climate-resilient development pathway. Although Kenya contributes less than 0.1% to the total global emissions annually and has prioritized climate adaptation actions, actions towards GHG emissions reduction are needed as it is projected to increase due to population and economic growth. The combined total GHG emissions from all sectors is expected to grow to 100 and 143 million tonnes of carbon dioxide equivalent (MtCO2e), by 2022 and 2030, respectively with agriculture leading in most GHG emissions.

Kenya first submitted its first Intended Nationally Determined Contribution (INDC) to the UNFCCC in July 2015 and resubmitted its NDC in December, 2016 after signing the Paris Agreement (PA) in December 2015. The NDC contained both adaptation and mitigation actions while recognizing that adaptation is the priority and outlined that Kenya aims to reduce its GHG emission by 30 percent, relative to business-as-usual (BAU) scenario 143 MtCO2eq and transform to a low-carbon society by 2030. In December 2020, Kenya updated its NDC targeting to abate GHG emissions by 32% by 2030 relative to the BAU scenario of 143 MtCO2eq. This was in line with decision 1/CCP. 21 and PA which requires an update by 2020 and every five years and it aligned with the country's sustainable development agenda and national circumstances. The total cost of implementing mitigation and adaptation actions in the updated NDC is estimated at USD 62 Billion.

Compared to the first NDC which was fully conditional to support, Kenya commits to mobilize resources to meet 13 percent of this budget and will require international support for the remaining 87 percent. Kenya needs both domestic and international support in the form of finance, investment, technology development and transfer and capacity building from the public and private sector.

National Legislation and Policy Frameworks Supporting NDCs

Kenya has put up ambitious policies and measures to pursue her low emission climate resilient development pathway to realize its Vision 2030. The Updated NDC builds on national policies, plans and legal frameworks which are;

- **Kenya Vision 2030** which encapsulates flagship programmes and projects with aspects of adaptation and mitigation;
- **The National Climate Change Response Strategy (NCCRS)** developed in 2010 which advanced the integration of climate change adaptation and mitigation in all government planning, budgeting and development objectives;
- **The first National Climate Change Action Plan (NCCAP) 2013-2017** which established Kenya's baseline emissions projections up to 2030 and developed a low carbon climate resilient pathway for the country outlining priority adaptation and mitigation actions;
- **The second NCCAP 2018-2022** which identifies the country's priority climate change adaptation and mitigation actions. A Mitigation Technical Analysis Report (MTAR 2018-2022) and an Adaptation Technical Analysis Report (ATAR 2018-2022) were provided to elaborate on the mitigation and adaptation actions respectively;
- **National Adaptation Plan (NAP)** 2015 -2030 which provides climate hazard and vulnerability assessment and set out priority adaptation actions;



- **Climate Change related policies:** The National Policy on Climate Finance, Climate Risk Management Framework, The National Livestock Policy 2015, National Oceans and Fisheries Policy 2008, The Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019-2029, The Kenya Climate-Smart Agriculture Strategy (2017-2028), The Reducing Emissions from Deforestation and Forest Degradation (REDD+), The National Drought Management Authority Management Act (2016), The Water Act (2016), Forest Conservation and Management Act (2016) among many others;
- **The Constitution of Kenya (2010)** provides the foundation for implementation of climate change actions through its Bill of Rights provisions especially the right to a clean and healthy environment;
- **Climate Change Act, 2016** which provides for a regulatory framework for enhanced response to climate change and mechanism and measures to achieve low carbon climate development.

Mitigation Actions

Kenya has prioritized the following mitigation activities in its NDC

- Increasing of renewables in the electricity generation mix of the national grid;
- Enhancement of energy and resource efficiency across the different sectors;
- Making progress towards achieving a tree cover of at least 10% of the land area of Kenya;
- Making efforts towards achieving land degradation neutrality;
- Scaling up Nature Based Solutions (NBS) for mitigation;
- Enhancement for REDD+ activities;
- Clean, efficient and sustainable energy technologies to reduce overreliance on fossil and non-sustainable biomass fuels;
- Low carbon and efficient transportation systems;
- Climate smart agriculture (CSA) in line with the Kenya CSA Strategy and efficient livestock management systems;
- Harness the mitigation benefits of the sustainable blue economy, including coastal carbon Payment for Ecosystem Services (PES)

The resource requirements estimate mitigation activities for the period 2020 to 2030 are estimated at USD 17, 725 Million. Subject to national circumstances, Kenya intends to bear 21%(3,725 Million USD) of the mitigation cost from domestic sources while the balance of USD 14, 000 million is subject to international support.

Adaptation and Loss & Damage

Kenya has prioritized adaptation the country's GDP relies on climate sensitive actors such as agriculture, tourism, industry and manufacturing. Kenya aims to ensure an enhanced resilience to climate change towards the attainment of Vision 2030 by mainstreaming climate change adaptation into the Medium-Term Plans (MTPs) and County Integrated Development Plans (CIDPs) and implementing adaptation actions. To enhance its adaptation ambition, Kenya is bridging the implementation gaps by

- Enhancing the adaptive capacity and climate resilience across all the sectors of the economy and at the two levels of government – National and County Governments;
- Explore innovative livelihood strategies for enhancing climate resilience of local communities through financing of locally led climate change actions;
- Enhancing risk-based approach to climate change adaptation through development and application of comprehensive climate risk management tools that would help in addressing and adaptively managing climate risks;
- Addressing residual climate change impacts, loss and damage especially in the productive sectors of the economy;
- Enhance generation, packaging and widespread uptake and use of climate information in decision making and planning across sectors and counties with robust early warning systems (EWS);
- Enhance uptake of adaptation technology especially women, youth, and other vulnerable groups, incorporating scientific and indigenous



knowledge;
- » Enhancing investment in ocean and blue economy;
- » Institutional strengthening of the Climate Change Department (CCD), the Climate Change Units and related institutions across sectors and counties as well as non-state actor institutions and;
- » Strengthening tools for adaptation monitoring, evaluation and learning (MEL) at the national and county levels, including non-state actors.

To achieve this, Kenya intends to implement various priority actions to attain the Triple Adaptation Dividend namely, avoided losses, economic benefits, social and environmental benefits. Some of these interventions may result in mitigation co-benefit. The total cost of adaptation actions up to 2030 is estimated at USD 43, 927 Million. Just like mitigation options, Kenya intends to mobilize domestic resources to cater for 10% of the adaptation cost while the remaining 90% will require international support in form of finance, technology development and transfer, and capacity building.

NDC implementation in Kenya

Key Policies and Initiatives

Integrated Governance and Gender-mainstreaming

To mainstream gender into its NDC, Kenya undertook an in-depth gender analysis to ensure that gender responsive actions are identified, planned, budgeted for and implemented. The analysis explored the gender differentiated impacts of climate change by looking at existing gender inequalities in access to and use of resources, participation, and benefits between various gender groups. It analyzed the extent to which gender issues have been considered within Kenya's policy, legal, and institutional frameworks and their suitability for supporting gender-responsive climate change actions. It focused on the key NDC sectors of Agriculture, Energy and Water, the role of gender within these sectors, challenges to women's participation and empowerment, and sectoral opportunities for supporting gender responsive measures. The gender analysis provides strategic recommendations on governance, planning, and policy that will strengthen the integration of gender equality into NDC planning and implementation processes.

Climate Finance

a. Kenya's Financing Strategy for NDCs

The NDC financing strategy is guided by the National Policy on Climate Finance 2016 which was established, inter alia, to improve the ability to mobilize and effectively manage and track adequate and predictable climate change finance. It shows costing details for climate priority actions considering the funding available through government sources, assess funding gaps that require international and private sector support and identify opportunities to address those gaps.

b. A Training Handbook Climate Finance: Budget Coding, Tracking and Reporting Enhanced Transparency of Climate Finance In Kenya, 2019

The handbook is part of Kenya's government strategic intervention to build climate finance capacity so that it can better coordinate resource mobilization and track climate change expenditures. It equips all state and non-state climate change actors with skills and knowledge to properly identify climate change elements, plans, budget and mobilize resources, code and track expenditures towards adaptation and mitigation, both as stand-alone initiatives and projects or within programmes and projects. It also introduces to the learner, climate change and historical background of climate financing, sources and the governance structure of climate finance and elaborates the process of planning, budgeting and reporting on climate financing at the sector level, as well as costing for climate change in government.

c. Source of Funding

Global mechanisms for financing climate change adaptation in developing countries are of increasing importance as they play a critical role in stimulating climate action that can accelerate the transition to a green, inclusive and climate resilient economy. There are Multilateral Climate Funds (Adaptation Fund (AF), Climate Investment Funds(CIF), Global Environment Facility (GEF), Green Climate Fund (GCF)) whose missions and visions are partially shared mutually to reinforce their support to developing countries to implement the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC).



In 2018, KCB became the first financial institution in Kenya to be accredited by the Green Climate Fund (GCF), allowing it to receive GCF funding for on-lending to green and climate-friendly projects in Kenya worth between KES 5 and 25 billion (KCB, 2020a). NEMA is also a direct access entity for Green Climate Fund (GCF) resources for the country. The National Environment Trust Fund (NETFUND) is responsible for financing research and capacity building on environmental matters, while the Kenya Forest Service (KFS) is tasked with the conservation, development, and sustainable management of forest resources for Kenya's socio-economic development.

By 2018, KES 243.3 billion (USD 2.4 billion) of public and private capital was invested in climate-related activities, which is approximately half of the financing that Kenya needs annually to meet the targets set in its NDC.

Agriculture Sector

a. The Kenya Climate-Smart Agriculture Strategy (KCSAS)

Agriculture is the backbone of Kenya's economy in terms of food security, employment, foreign exchange earnings and supply of agro-based industry raw materials. 98% of the sector is rain-fed and is highly vulnerable to climate change and its effects which has led to among others, unsustainable land and agricultural water management. Agriculture is responsible for one-third of Kenya's total emissions making it the largest source of GHG emission in Kenya. This is likely to increase from 20 MtCO2 e in 2010 to 27 MtCO2 e by 2030, largely driven by livestock methane emissions and land use change, which account for 90% of agriculture emissions and 30% of overall national emissions. To transform the agricultural systems to make them more productive and resilient while minimizing GHG emissions under a changing climate, the Kenya Climate-Smart Agriculture Strategy (KCSAS) was developed. The broad objective of the Kenya CSA Strategy (KCSAS) is to adapt to climate change, build resilience of agricultural systems while minimizing emissions for enhanced food and nutritional security and improved livelihoods. The KCSAS is a tool to implement Kenya's NDC contribution for the agriculture sector and will require domestic and international support. The implementation of KCSA strategy will require a total of KSh. 500 billion (US$ 5.0 billion) for adaptation and mitigation actions for agriculture sector up to 2026.

b. Dairy Nationally Appropriate Mitigation Action (Dairy NAMA)

The dairy industry is Kenya's single largest agricultural sub-sector and contributes 14% of agricultural gross domestic product (GDP) and 3.5% of total GDP. The Dairy NAMA was developed in 2017 to transform Kenya's Dairy Sector to a low emission and climate resilient development pathway, while improving the livelihoods of male and female dairy producers.

Energy Sector

a. Kenya National Energy Efficiency and Conservation Strategy, 2020

The Kenya National Energy Efficiency and Conservation Strategy (NEECS) is the roadmap towards achieving energy efficiency goals that will have an overall positive impact on Kenya's economy by providing a roadmap towards setting and achieving energy efficiency goals. The NEECS intends to help Kenya reach its international commitments and national targets for cleaner energy and the reduction of greenhouse gas emission as articulated in Kenya's NDCs and in the country's National Action Agenda for Sustainable Energy for ALL.

b. The Rural Electrification and Renewable Energy Corporation (REREC).

The REREC is mandated with spearheading Kenya's green energy drive (excluding Geothermal), in addition to implementing rural electrification projects, and is responsible for implementing rural electrification through extension of the grid and off-grid projects, managing the Rural Electrification Programme Fund, establishing energy centres in counties, mobilizing funds in support of rural electrification projects, financing project preparation studies for rural electrification and recommending suitable policies to the government; developing, promoting and managing the use of all renewable energy and technologies excluding geothermal; and coordinating research in renewable energy.



Rural electrification is a mechanism for urban-rural economic balance. With the Energy Act 2019, REREC replaces the Rural Electrification Authority (REA), and continues with its mandate to accelerate the pace of rural electrification in the country, in order to promote sustainable socio-economic development. In addition to rural electrification, REREC has an expanded mandate in relation to renewable energy and the green energy drive in Kenya, that will put it at the centre of policy formulation, research and development, international cooperation and, importantly, the promotion of renewable energy use amongst the local population. REREC has installed 26 solar mini-grids, and initiated 19 isolated diesel generators in off-grid counties of Kenya. Garissa 5OMW solar plant is one of REREC's generation plants, which contributes to approximately 2% of the national energy mix. 20

c. Wind Energy

Wind energy is a clean energy source and can produce power while simultaneously contributing to climate change mitigation and providing access to affordable energy for accelerated economic development. Kenya has invested into wind power, plans to generate 2GW of wind power by 2030.

The Lake Turkana Wind Power (LTWP) Project

Situated in Marsabit County, Kenya, LTWP is the largest wind farm in Africa with 365 wind turbines, each with a capacity of 850kW enough to supply 17% of the country's installed capacity. LTWP is connected to the Kenyan national grid through a 438km associated transmission line constructed by the Government of Kenya through the Kenya Transmission Company (KETRACO).

The Kipeto Wind Power Station

The Kipeto Wind Power Station, also known as Kajiado Wind Power Project, is the second largest wind farm in Kenya with a 100 megawatts (130,000 hp) wind powered electricity power station. It comprises of 60 General Electric turbines, each rated at 1.7 megawatts and generates 100 megawatts (MW) of clean electricity to power approximately 250,000 Kenyan households.

Ngong Hills Wind Power Station

Ngong Hills Wind Power Station, also known as Ngong Hills Wind Farm is located in Kajiado county and has 30 wind turbines with a total installed capacity of 25.5MW. The station has three power transformers and is connected to the national grid.

d. Solar Energy

The national electricity access rate is 69.8% with 90.8% in urban areas and 56.3% in rural areas. Grid and solar constitute the majority of these connections with 50.4% of households connected to the national grid while an estimated 19.3% are connected to solar systems. Kenyans are now turning to solar power every year and the government is playing a significant role to advance the same. Some of the measures being implemented include removal of renewable energy equipment and accessories import duty, and the enactment of the Energy (Solar Photovoltaic Systems) Regulations and The Energy (Solar Water Heating) Regulations, 2012 (the "Regulations") by the Energy Regulatory Commission (ERC). These regulations are to ensure that good quality solar products as well as properly trained or qualified technicians are the only ones to operate, designing and installing solar PV, and that all manufacturers, vendors, distributors and contractors of solar PV systems shall be licensed by the ERC.

Garissa Solar Power Plant

The Garissa Solar Plant is a 55 MW (74,000 hp) solar power plant and the largest grid connected solar power plant in East & Central Africa. It contributes 2% % of the national energy mix and has significantly led to a reduction of energy costs in the country thereby promoting the development of clean, reliable, sustainable and affordable electricity. The solar farm sits on 85 hectares (210 acres) and consist of 200,200 solar panels.

The Kenya Off-Grid Solar Access Project (KOSAP)

The Kenya Off-Grid Solar Access Project (KOSAP) is a flagship project of the Ministry of Energy, financed by the World Bank which aims to close the access gap by providing electricity services to remote, low density, and traditionally underserved areas of the country, by the use of solar and clean cooking technology to drive the electrification of households, enterprises, community facilities, and water pumps. The facilities will target 14 of the 47 counties in Kenya (West Pokot, Turkana, Marsabit, Samburu, Isiolo, Mandera, Wajir, Garissa, Tana River, Lamu, Kilifi, Kwale, Taita Taveta, and Narok) that have been defined as "marginalized areas" by the Commission on Revenue Allocation (CRA).



e. Biomass, biogas and waste-to-energy

Biomass

By 2020, 80% of Kenya's household depend on traditional biomass due to reliance on wood fuel for cooking and heating, majority being in rural communities, urban poor, and the informal sector. The Government has identified potential for power generation using biomass (animal waste), forestry and agro-industrial residues (bagasse) for own consumption and export to the grid.

Biogas

It is estimated that Kenya has over 8000 biogas plants utilizing raw materials from agriculture and municipal waste. The government has identified biogas potential from municipal waste, sisal and coffee production with an electric potential ranging from 29-131MW of electric production.

f. Geothermal Energy

Kenya is ranked eighth worldwide in geothermal energy production with an aggregate capacity of about 865 MWe.11 with a potential in excess of 10,000MW along the Kenyan rift valley. Kenya is yet to exploit coal production, however, the GOK plans to build two coal plants in Lamu (a 981 MW power plant divided into three units of 327 MW each) by 2024 and in Kitui (a 960 MW power plant) by 2034. The development of these two generation technologies will have a considerable impact on the electricity sector in Kenya, affecting the generation costs, affordability of electricity, and overall flexibility and reliability of electricity supply.

While both geothermal and coalbased power generation result in GHG emissions, the average global estimate for geothermal power production, at 122 gCO2/kWh, is much lower than the estimate for coal—670-870 gCO2/kWh. In the case of Kenya, emissions calculations for different generation expansion scenarios show that by 2037, almost 3 MtCO2 could be saved annually if coal were replaced with low-carbon alternatives such as geothermal, complemented by generic backup units.

Transport Sector

Kenya transport sector consumes about 72% of all the petroleum products being imported in Kenya as such about 67% of Kenya's energy-related CO2 emissions and 11.3% of Kenya's total GHG emissions in 2015 came from transport-related activities (GHG inventory report, 2019). Therefore, Kenya explicitly mentions its endeavor to implement low carbon and efficient transportation systems in its updated NDC. Ongoing sectoral initiatives towards mainstreaming climate change include

- To develop a BRT for Nairobi Metropolitan area to reduce congestion provide improved mobility services;
- 30% freight from Mombasa to Nairobi shifted from road to rail to reduce congestion and shorten the time limit for cargo transportation. These include reducing fuel consumption and fuel overhead costs and electrification of the Standard Gauge Railway (SGR);
- Non-motorized transport (NMT) construction across different urban areas to enhance mobility for short trips;
- Finalization of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) regulations for the aviation sector to enhance compliance of international aviation with ICAO carbon offsetting standards;
- Conducting baseline emissions inventories from the shipping and maritime industry for domestic and international shipping, to inform what measures should be put in place to address pollution. In addition, this will gather data for number of vessels, and emissions factors for every type of vessel;
- Tree planting as the SDOI approved policy. Kenya National Highway Authority will plant 10 million tree in the next 2 years;
- upscaling the construction of roads to systematically harvest water and reduce flooding;
- Enhancing institutional capacities on climate proofing vulnerable road infrastructure through vulnerability assessments; and
- Promoting use of appropriate designs and building materials to enhance resilience of at least 4500 km of roads to climate risks



Building Sector

2017 projections show GDP growth to be approximately 6.4 % with a 4.3% urbanization rate, therefore, demand for affordable housing will remain strong. Building stock is forecasted to grow to approximately 47 million m2 by 2025, with the largest growth coming from the hotel and institutional sub-sectors. Building materials that are currently being used have a huge carbon footprint considering most are imported and therefore have high inbuilt energy. Kenya plans to switch the Energy Performance of Buildings Directive 2010/31/EU from British Standard Codes. The codes consider energy efficiency and require consideration of passive design strategies (natural cooling methods, sun shading devices, use of natural lighting, proper orientation, local building materials) and renewable energy.

Forest Sector

Kenya's forest cover is estimated to be 5.9% of the total land area equating to 3,462,536 ha (MoEF, 2019a). The Kenyan Constitution set a goal to maintain tree cover2 of at least 10% of the land area (GOK, 2010a). With the current forest cover, an increase based on current forest cover by 0.35% per year, equivalent to 207,213 ha per year for the period 2019 to 2030 should be done in order to achieve the goal. If successful, this planting, conservation and avoiding deforestation rate would reverse Kenya's emission status.

In 2019, Kenya submitted its National Forest Reference Level (FRL) for REDD+ Implementation for review to the UNFCCC. The national FRL proposed by Kenya is derived from its average annual historical emissions from deforestation, forest degradation, sustainable management of forests and enhancement of forest carbon stocks in the reference period 2002– 2018, which were monitored over four-year intervals
(UNFCCC, 2020d). The FRL will

- harness opportunities for reducing current emissions arising from deforestation and forest degradation
- Develop opportunities for enhancement of carbon stock arising from afforestation, reforestation and restoration of degraded forest areas.

Monitoring, Reporting and Verification (MRV)

Under the Kenya National Climate Change Action Plan (NCCAP), a National Performance and Benefit Measurement Framework (NPBMF) was developed to monitor, evaluate and report results of mitigation and adaptation actions, including the synergies between them and related socio-economic benefits. The framework includes a system that brings together the Measurement, Reporting and Verification (MRV) of greenhouse gas (GHG) emissions and mitigation activities and the Monitoring and Evaluation (M&E) of adaptation activities, together called the MRV+ system. Adaptation actions are monitored and evaluated through the MRV+ system as specified in the National Adaptation Plan (NAP).

Kenya has developed an integrated Monitoring, Reporting and Verification (MRV) system including MRV tool for monitoring and reporting both mitigation and adaptation actions, together with their results and includes appropriate indicators that will be continuously improved over time through an evaluation mechanism. The integrated MRV system is coordinated from the Climate Change Directorate and is embedded on the Climate Change Act which obligates all state and non-state climate change actors to report all their climate change activities on an annual basis. It is also linked with already existing monitoring and reporting systems including the National Integrated Monitoring System (NIMES) and County Integrated Monitoring System (CIMES). The reports generated from the system provides input for both national and international reporting, thus addressing various reporting obligations.