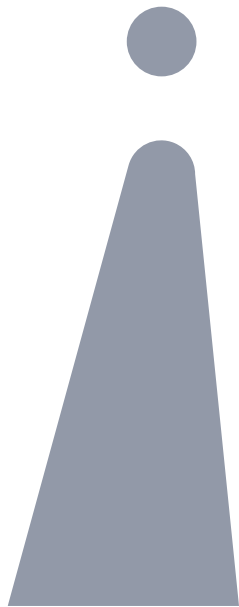
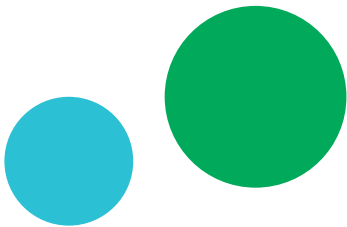




Eastern Africa Alliance  
On Carbon Markets And  
Climate Finance

# CARBON MARKET

PROFILE — KENYA





## Key assumptions

- Data referring to the CDM (projects and programmes) has been taken from the UNEP DTU CDM project and PoA pipelines as of November 2020. In order to remain conservative, we only include registered activities. We did not assess data quality with regard to whether a project is still active, as UNEP is the commonly recognized database drawing directly on UNFCCC Secretariat data. While there is a high degree of uncertainty with regard to the issuance and upscaling potential of individual activities, these are difficult to assess and will be affected by future political decisions. Only PoAs which have an included component project activity (CPA) in the profiled country has been counted.
- While it is clear that in particular the 2030 potential is subject to political decisions and therefore theoretical, it is included as the numbers are based on current CDM activity documents. Whilst all emission reductions may be highly unlikely to be achieved under the CDM, the emission reduction volume may still be relevant e.g. for own NDC contributions by host countries. Moreover, PoAs may experience significant upscaling if carbon market demand increases, which would add further mitigation potential, since we only included emission reductions from actually included CPAs.
- Any future mitigation potential is expressed in kilotons of carbon dioxide equivalent (ktCO<sub>2</sub>e = 1000 tCO<sub>2</sub>e) in order not to prejudge the type of certification that post-2020 mitigation outcomes may be using.
- Voluntary carbon standard data has been taken from the official databases of the respective standard. Verified Carbon Standard data is as of December 2020. Data on Gold Standard (GS) activities have been obtained from the GS registry and complemented by information provided directly from the GS in December 2020. Plan Vivo data was obtained directly from the standard in October 2020.
- Assumptions on CDM transition are based on the current status of the COP25 draft decision documents. While these may change, the delay of COP26 to November 2021 rules out that a final decision can be taken before. Therefore, we give a brief indication of what the proposed cut-off dates for CDM transition may mean on a country level. A recent short study on cdm transition and its relevance for Africa explains key issues in detail
- Due to the lack of a definition or common understanding of what an Article 6 pilot is, we also include initiatives that aim at implementing carbon market activities beyond the CDM. This includes readiness activities and others aiming at emission reduction transactions.

## Introduction

# EXECUTIVE SUMMARY

Kenya submitted its updated Nationally Determined Contribution (NDC) on 28th December 2020, seeking “to undertake an ambitious mitigation contribution ...to abate its GHG emissions by 32% by 2030 relative to the business as usual scenario of 143 MtCO<sub>2</sub>eq in line with her sustainable development agenda”. The country estimates that over USD 17 billion is required for mitigation actions up to 2030, and Kenya intends to mobilize domestic resources to meet 21% of the estimated budget, and requiring the balance (79%) to be achieved through international support.

The updated NDC states Kenya’s intention “to use voluntary cooperation under Article 6” and that domestic legislation and institutional frameworks are to be developed to govern engagement in market and non-market mechanisms.

In total over 25million carbon credits have been issued in Kenya from the Clean Development Mechanism (CDM) and Voluntary Carbon Market (VCM) standards.

The country has the largest CDM portfolio in Eastern Africa, in terms of activities, having registered and included a total of 189, being 20 Project Activities and 169 Component Project Activities (CPAs) within 24 Programmes of Activities (PoAs). The country additionally possesses a significant voluntary standards portfolio including 38 certified Gold Standard projects.

Kenya has issued over 1.6 million Certified Emission Reductions (CERs), with the top three sub-sectors being improved cookstoves (41%), grid connected renewable power (37%) and water purification (19%). The power projects having been implemented by the national power producer KenGen, generating over 500,000 CERs.

As an early mover on the continent, 80% (16) Project Activities were registered before December 2012 though this means that the portfolio is reaching a crossroads regarding its lifespan – with 90% of the current crediting periods of non-forestry projects expiring in 2022. This highlights an untapped potential with over 45 million CERs available up to 2020, and a further 101 million CERs between 2021 – 2030.

Positively the country has seen significant recent activity with the inclusion of over 50 CPAs since October 2019, through engagement with the World Bank and potentially the Korean Emission Trading Scheme covering efficient cookstoves, ethanol cooking and off-grid solar solutions.

The country has been exploring carbon financing mechanisms within the context of Article 6 with the World Bank and has been engaged with the Japanese Government through the Joint Crediting Mechanism (JCM) since 2013. In February 2021, the first JCM credits in Kenya were issued totalling 974 which were evenly acquired by the two countries.

The national airline Kenya Airways has actively been involved in carbon offsetting programmes since 2011 and is engaged with CORSIA.

## Carbon market portfolio

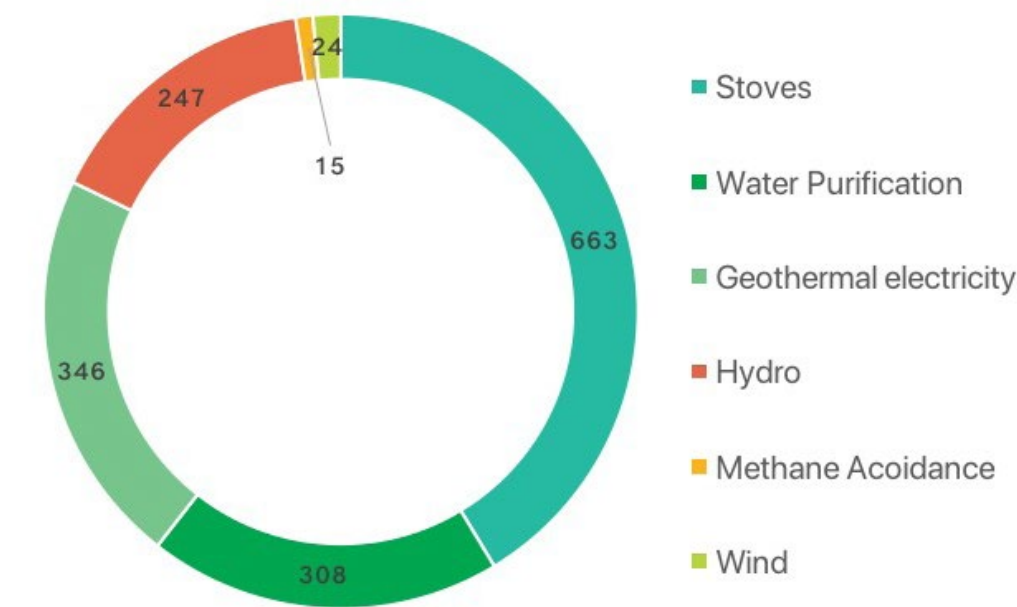
There are 189 registered CDM activities: 20 Projects and 169 CPAs within 24 PoAs. The majority, (80%, 16) of the Projects were registered up to 2012, with 155 (92%) of CPAs registered after 2012. Of registered PoAs that include CPAs in Kenya – 17 are single country with 7 being multi-country. The country has issued Letters of Approval for 27 PoAs in total.

Sector wise – Projects are dominated by grid connected electricity (12) and reforestation (5), whilst PoAs focus on de-centralised energy solutions for cooking, lighting and water purification (159 CPAs).

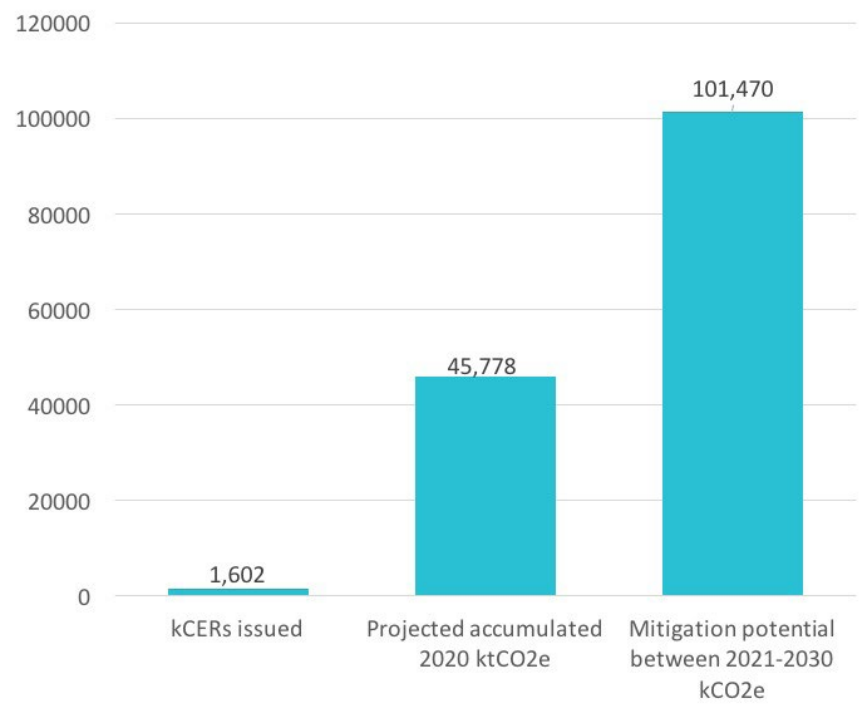
Kenya has issued over 1.6 million CERs, this is from 28% of all activities (20% of Projects, 29% of CPAs) from the pipeline. These are from the following sub-sectors – improved cookstoves (40%), grid connected power geothermal (23%) and hydro (16%), water purification (20%) and biogas from domestic manure (1%). With close to 600,000 CERs (39%,) issued by activities under the national power producer KenGen.

Total mitigation potential of registered activities by 2020 reaches over 45 million CERs, which is fairly evenly split between projects and PoAs. The 2021-2030 mitigation potential could reach 101 million tCO<sub>2</sub>e, of which under 19% is from projects and over 100 million from PoAs.

CDM performance and potential



CDM Pipeline - Issuance and mitigation potential



Volume of CER issuance and potential of currently registered CDM activities by sector

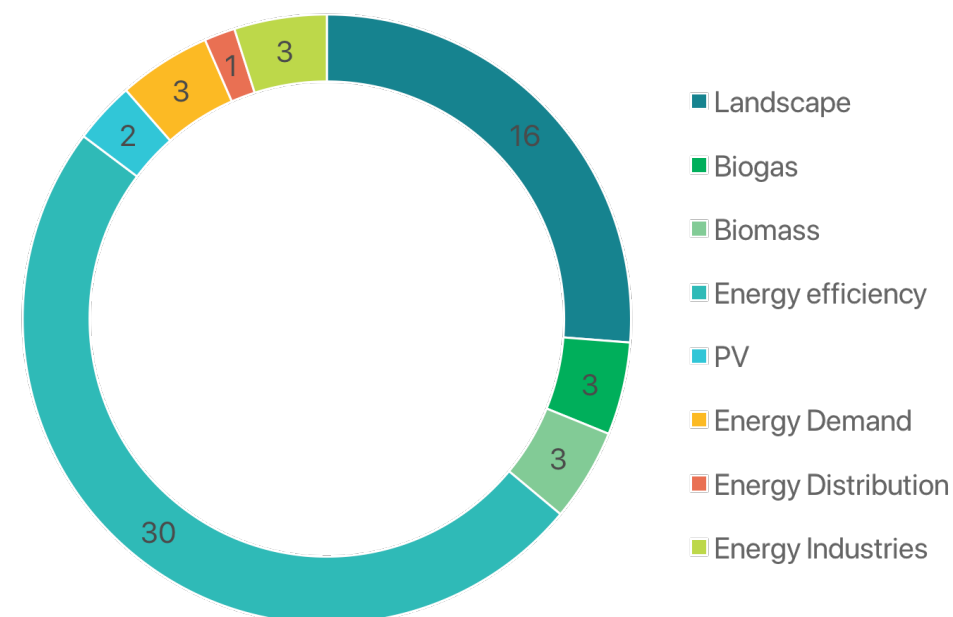
Activity Type / Sub-sector	Sub-sector type	No. of PA	No. of PoA	No. of CPA	Total issued kCERs	Projected accumulated 2020 ktCO2e	Projected accumulated 2030 ktCO2e
Overall	Overall	20	24	169	1,602	45,778	101,470
Biomass Energy	Bagasse power	1		0	0	1296	
	Biomass briquettes or pellets	1		0	0	353	84
EE industry	Petrochemicals	1		0	0	42	-
EE Household	Lighting	0	1	4	0	713	534
	Solar lamps	0	1	4	0	668	326
	Stoves	0	10	98	663	12116	46,927
EE services	Water purification	0	2	55	308	7528	31,025
Energy distribution	Energy distribution	0	1	1	0	173	230
Geothermal	Geothermal electricity	4	1	1	346	11064	15,084
Hydro	Dam/run of river	2	1	2	247	902	523
Methane avoidance	Domestic manure	1	2	2	15	1168	1,163
Reforestation	Reforestation	5		0	0	1369	1,399
Solar	Solar PV	0	5	2	0	64	486
Wind	Wind	5		0	24	8350	3,690

## Voluntary carbon standards

### Key statistics/facts

- Kenya has 61 VCM projects that have issued close to 26 million carbon credits.
- Gold Standard (GS)
  - Hosts 38 certified GS activities (22 VPAs and 18 stand-alone projects);
  - 15 GS activities have issued over 8 million VERs
  - Additionally, there are:  
56,536 issued GS CERs
  - The dominant sub-sectors are Energy Efficiency Stoves (65%) and Off-grid Solar PV (10%).
- VERRA/Voluntary Carbon Standard (VCS)
  - main sectors issuing credits are Agriculture Forestry and Other LandUse (73%) and also Energy Efficient Stoves (13%).
- Plan Vivo
  - One project, Mikoko Pamoja, with close to 12,000 credits issued.

### Registered Voluntary Carbon Standard activity by sector



## Showcase Activity



Olkaria II Geothermal Expansion Project in Naivasha, Kenya, Source: KenGen Website

Kenya Electricity Generating Company PLC(KenGen), the country's largest power producer, has registered 6 CDM activities, which at their peak have the potential to generate an estimated 1.5million tCO<sub>2</sub>e/yr. All are grid connected power plants - geothermal (315MW), hydro (40MW) and wind (5.1MW). Close to 600,000 CERs have been issued, being over 97% of CERs issued by projects in Kenya, and 39% of the CDM total. The Olkaria II Geothermal Expansion Project (Ref no. 3773) was registered in 2010, with its first crediting period running through until 2017. The project utilises surplus steam from existing fields, raising capacity by 35 MW. Issuance has been undertaken four times, resulting in over 345,000 CERs.



## CDM transition

### What is at stake?

Of 20 registered projects – 25% (5) have expired crediting periods. Of the remaining 15 Projects 33% expire in 2021, 60% in 2022, not including afforestation/reforestation activities the expiry figure by 2022 rises to 90%;

The issuance rate for CERs from up until 2020 currently stands at 3% for registered projects and 4% for CPAs;

Between 2013 and 2016, four projects and four PoAs were registered;

There have been recent noticeable PoA registrations and CPA inclusions in Kenya, for example:

- The latest CPA inclusion was on 31st March 2020 under the Kenya Solar Lighting CDM PoA. The Rural Electrification and Renewable Energy Corporation (REREC) is the CME of the PoA registered in November 2019 (Ref. no 10515). This programme through the Carbon Initiative for Development (Ci-DEV) is related to the USD 150 Million World Bank backed Kenya Off-Grid Access Project for Underserved Counties (KOSAP) . The finance is being disbursed through a Results based Financing (RBF) and Debt facilities that “target 14 of the 47 counties that have been defined as marginalized areas”. The project targets over 250,000 households (approximately 1.3 million people) and over 1,00 public facilities (administrative offices, Health facilities, Schools etc) and 380 un-electrified boreholes. Two CPAs were included that will focus on Solar Home Systems, Solar Mini-grid, Stand Alone Home Systems and Water Pumping. It is expected to offset about 66,298 MtCO<sub>2</sub>e per annum.
- South Korea has been actively screening the African CDM portfolio for international carbon credit procurement opportunities and three activities in Kenya appear to have established links with related entities:
  - KokoNetwork , an innovative Kenyan ethanol cooking firm, registered a CDM Ethanol Cookstoves Program PoA in April 2019 (Ref no. 10476). A first successful issuance took place in 2020 for 2,319 CERs across a three-month period;
  - Biolite Improved Cook-stoves Programme (Ref no. 7997) was registered on 30th December 2012. On 9th December 2019 it included 40 CPAs to its Kenyan portfolio;
  - Top Third Ventures Stove Programme (ref no. 9265) was registered on 27th December 2012 and on 30th October 2019 included 12 additional CPAs.

## New market mechanisms and Article 6

In December 2020, Kenya submitted its updated NDC stating ambitions to “abate GHG emissions by 32% by 2030 relative to the business as usual scenario of 143 MtCO<sub>2</sub>eq”. The country estimates that USD 62 billion is required for mitigation and adaptation actions across all sectors up to 2030, with mitigation costs estimates being over USD 17 billion. Kenya intends to mobilize domestic resources to meet 21% of the estimated mitigation budget, requiring the balance (79%) to be achieved through international support. “Kenya intends to use voluntary cooperation under Article 6 of the Paris Agreement” and “will develop domestic legislation and institutional frameworks to govern her engagement in market and non-market mechanism”.

Kenya and Japan have been developing activities under the Joint Crediting Mechanism (JCM ) since the signing of a bi-lateral agreement as early as 2013. To date there are three projects registered - 38MW Solar Power Project in Makueni country, Promotion of the Electrification of communities using Ultra Low Head Micro Hydro Power Generation system and Solar PV System at a Salt Factory. In February 2021, the latter development, a 991.1kW solar PV project at Krystalline Salt Factory, issued the first JCM credits in Kenya. A total of 974 credits were issued and evenly acquired by the two countries

Kenya and the World Bank are exploring Article 6 provisions through use of results-based carbon market mechanisms. In their 2018 Annual report, KenGen announced that it is “exploring alternative markets for carbon credits, including...initiatives like the Transformative Carbon Asset Facility (TCAF)”. The World Bank has since publicly announced that it is working on a “Utility-based approach: Creating mitigation outcomes from transforming the long-term generation expansion plan of KenGen”.

### Role of CORSIA

Kenya Airways is actively involved in CORSIA, building on having become in 2011 the 1st airline in Africa to work under the International Air Transport Association (IATA) Carbon Offset Program. The firm and its passengers have supported projects in Kenya, including the Wildlife Work’s Kasigau Corridor project, “the world’s first REDD+ project to be validated and verified under the VCS and the Climate, Community and Biodiversity Standard (CCB)”. The project covers 500,000 acres of threatened forest, positively impacts more than 100,000 people and acts as a vital wildlife passageway.

Kenya has 140 CDM and 21 Gold Standard Activities that are eligible under CORSIA . In addition, KenGen submitted the Olkaria IV Geothermal Project to the Technical Advisory Body (TAB) in 2020 as an applicant for assessment against the CORISA Emission Unit Criteria (EUC).

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