

**INTEGRATED SAFEGUARDS DATA SHEET
APPRAISAL STAGE**

Date prepared/updated: November 2, 2018

I. Basic Information

1. Basic Project Data

Country: Kenya		Project ID: P160157	
		Additional Project ID (if any):	
Project Name: KTDA Small Hydro Programme Of Activities			
Task Team Leader: Juha Seppala, Jose Andreu (co-TTL)			
Estimated Appraisal Date: N/A		Estimated Board Date: N/A	
Managing Unit: GCCFM		Lending Instrument: IPF	
Sector: Hydropower (100%)			
Theme: Climate Change (100%)			
IBRD Amount (US\$m.):			
IDA Amount (US\$m.):			
GEF Amount (US\$m.):			
PCF Amount (US\$m.):			
Other financing amounts by source: [Withheld due to third party confidential information]			
Environmental Category: B – Partial Assessment			
Is this a transferred project		Yes []	No [X]
Simplified Processing		Simple []	Repeater []
Is this project processed under OP 8.00 (Rapid Response to Crises and Emergencies)		Yes []	No [X]

2. Project Objectives:

Monetize and transact GHG reductions from renewable energy produced by small hydropower benefiting smallholder tea farmers in rural Kenya.

3. Project Description:

The KTDA Small Hydro Programme of Activities (the “Project”) developed by KTDA Power Company Limited (KTDA Power) aims to generate and sell Certified Emission Reductions (CERs) from a planned group of 10 small scale run-of-river hydropower plants (“SHP” or “Sub-Project”) at various locations in Kenya. The Project is implemented under a Clean Development Mechanism (CDM) Program of Activities (PoA) titled “KTDA Small Hydro Programme of Activities”, which was registered with the United Nations Framework Convention on Climate Change (UNFCCC) secretariat in September, 2012.

The International Finance Corporation (IFC), in December 2015, considering carbon finance revenues, committed US\$ 25 million in debt to KTDA Power to finance the total cost of US\$85.6 million for the construction of seven of the 10 SHPs with total aggregate capacity of 16.2MW. IFC will thus be co-financing seven of the planned 10 SHPs, with other investors having provided funding for the three other SHPs. These 10 SHPs build the foundation for the proposed carbon finance operation. The Bank will not invest in the SHPs themselves, but through an Emission Reductions Purchase Agreement (ERPA), provide results-based carbon finance to KTDA Power tied to CER deliveries after the SHPs become operational and start generating renewable electricity.

The SHPS will generate captive electricity to enhance access to reliable electricity much needed by Kenya Tea Development Agency Holdings (KTDA)'s tea factories. Regional Power Companies (RPCs) are being set up for this purpose and are owned by the small-scale tea farmers' co-operatives, themselves members of KTDA. The project will, ultimately, increase the productivity, and hence, the bottom line of the smallholder tea businesses allowing these savings to be passed on to the tea farmers themselves. Second, surplus electricity will be sold to the state-owned utility company, Kenya Power (KPLC) by supplying electricity to the national grid, which will contribute towards addressing electricity reliability issues in the country and responding to the efforts by the Ministry of Energy aiming to increase installed small hydro capacity. The SHPs will serve captive power to 39 tea factories, contributing to increase income for over 350,000 small-holder tea farmers, and will contribute to an increased share of energy from small SHPs in the total energy mix of the grid, which currently represents under one percent.

KTDA Power plans to develop a portfolio of SHPs with an aggregate generation capacity of 31.3 megawatts (MW) across 10 proposed sites, as currently planned, in and around the Central Highlands. These 10 SHPs will consist of 7-10 Component Project Activities (CPAs) under the CDM-PoA framework. The main barrier for the expansion/replication of KTDA Power's business model has been difficulty in obtaining external commercial debt financing. This is due to high project cost per MW derived from project site constraints and KTDA Power's policy to ensure high quality of electro mechanical equipment. In order to overcome this challenge, KTDA Power first developed a pilot project consisting of three SHPs with total capacity of 12.4MW, obtaining concessional financing from Agence Française de Développement (AFD). All the three SHPs of the pilot project started construction, of which two SHPs (Chania and Gura) have completed construction in August 2016 and October 2016, respectively. The third pilot, North Mathioya, is expected to complete construction in December 2018.

Once the pilot project of three SHPs demonstrated a certain level of track record, KTDA Power planned for commercial expansion/replication via development of an additional 7 SHPs through partnership with IFC. KTDA Power aimed to obtain commercial debt financing for the expansion/replication of projects in order to demonstrate the commercial viability of its innovative business model. Of the seven SHPs to be financed by the IFC, four have started construction.

All of the projects are run-of-river types and consist of an intake weir between 2.5 and 3.0 m high, headrace water channel, forebay, penstock and surface power house connected to the tea factory and the national grid by medium-voltage transmission lines (11 kV). Generating capacities range from 1.0 to 6.5 MW. The length of the headrace channel varies, but can be up to several kilometers. The lengths of transmission lines vary as well, from about 7 to 22 km. The infrastructure is located on private lands, which have either been bought or leased (willing buyer – willing seller) from local farmers –mostly tea farmers, but in some cases coffee farmers (South Mara and Lower Nyamindi are in coffee growing regions).

However, revenue from electricity alone does not generate sufficient cash flow for the debt servicing. That is why carbon finance is being considered as results-based financing via the World Bank as trustee of Carbon Initiative for Development (Ci-Dev), which would make the underlying project viable. The carbon finance will not pay for the construction of the SHPs, but will be made available after the SHPs are commissioned and start generating renewable electricity to help KTDA Power with the loan payments to the IFC.

The project would target a number of development challenges, including providing access to clean, renewable energy; providing climate change mitigation benefits and improving livelihoods for the tea growers. These are all supporting the World Bank Group’s twin goals of eradicating extreme poverty and boosting shared prosperity.

4. Project Location and salient physical characteristics relevant to the assessment of environmental and social risks and impacts:

The KTDA factories are distributed both throughout the East and West of the Great Rift Valley. The proposed¹ SHP locations are given in the table below (Projects 1-3-- externally financed, Projects 4-10 – IFC financed sites).

Project	Capacity (MW)	River	County	Owner RPC	Financier	Construction completion	Land acquisition
1. Gura	5.8	Gura	Nyeri	Gura RPC	External	Complete	Complete
2. Chania	1.0	Chania	Kiambu	Mataara RPC	External	Complete	Complete
3. North Mathioya	5.6	N. Mathioya	Muranga	Metumi RPC	External	Jun 2019	Complete
4. Lower Nyamindi	1.8	Nyamindi	Kirinyaga	Kirinyaga RPC	IFC	Jun 2019	In process
5. South Mara	2.0	S. Mara	Tharaka Nithi	Greater Menu RPC	IFC	Jun 2019	In process
6. Iraru	1.5	Iraru	Meru	Greater Menu RPC	IFC	Jun 2019	In process
7. Kipsonoi I	2.6-3.6	Kipsonoi	Bomet	Settet RPC	IFC	Jun 2021	In process
8. Nyambunde	2.0	Gucha	Kisii	Nyakuwana RPC	IFC	Jun 2019	In process
9. Kiringa	1.5	Kiringa	Kirinyaga	Kirinyaga RPC	IFC	Dec 2021	Not yet due
10. Nyamasege	6.5	Gucha	Kisii	Nyakuwana RPC	IFC	Dec 2021	In process

5. Environmental and Social Safeguards Specialists on the Team:

James Chacha Maroa (GEN01)
 Margaret Ombai (GSU07)
 Thomas Walton (Environmental Consultant)

¹ As per current plans. Ultimate composition of the portfolio may be subject to change.

6. Applicable Performance Standards	Yes	No
PS 1: Assessment and Management of Environmental and Social Risks and Impacts	X	
PS 1 is applicable because individual hydropower projects and associated facilities such as transmission lines are expected to have environmental and social impacts.		
PS 2: Labor and Working Conditions	X	
Workplace safety and labor conditions are important concerns during construction and operation.		
PS 3: Resource Efficiency and Pollution Prevention	X	
The SHPs are renewable energy sources that will reduce fossil fuel consumption at the tea factories.		
PS 4: Community Health, Safety, and Security	X	
The projects sites are typically located within 100m of farm plots and/or households. There will be civil works, which could have impacts on community health and safety. Drowning risk posed by headrace canals was a concern raised by community members during ESIA consultations.		
PS 5: Land Acquisition and Involuntary Resettlement		X
All land acquisition is through willing-buyer willing-seller transactions. KTDA has developed a Land Acquisition Policy that establishes the procedures to be followed and the requirements for documentation of the transactions. KTDA will share with the Bank the land acquisition report with details of each subproject to ensure they conform to the Bank's standards for willing-seller-willing-buyer transactions as specified in PS5 and G		
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	X	
Hydropower projects can have significant impacts on the river flow, thereby leading to reduced biodiversity; hydro projects can also impact aquatic system connectivity and migration of fish species.		
PS 7: Indigenous Peoples		X
There are no indigenous peoples in the project-affected area.		
PS 8: Cultural Heritage		X
The land in the project-affected area is almost entirely agricultural. Cultural heritage features are not anticipated.		

7. If PS 1 and PS 2 are NOT applicable, provide a brief explanation why:

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

See attached Environmental and Social Review Summary, which is also available at the following website:
<https://hubs.worldbank.org/docs/imagebank/pages/docprofile.aspx?nodeid=30223721>
<https://disclosures.ifc.org/#/projectDetail/ESRS/36402>

The proposed project's overall risk rating is substantial and the project's EA category is B. Vegetation clearing for canals, powerhouses, and transmission lines, modification of the natural flow of the rivers, and the presence of the weirs are identified as the main activities that could cause adverse environmental impacts, including impeding fish migration, soil erosion and air pollution from vegetation burning, changes in stream ecology, and impairment of downstream uses. Impacts on surface water quality, air quality, noise, and solid waste management will be

local and of short duration, and the ESIA for each subproject require adherence to good construction practices and include measures to minimize clearing and prompting re-vegetation of disturbed sites, equipment and materials storage areas and borrow pits, upon completion of activities.

Downstream and upstream users were taken into account and were consulted in preparation of the ESIA. However, aquatic ecology, migratory fish species, ambient water quality, minimum environmental flows, environmental characteristics of transmission line corridors and potential impacts of line construction and operation were not adequately addressed in many of the ESIA. Cumulative impacts are not an issue in any of the three non-IFC SHPs, but there is potential for cumulative impacts on the Gucha River from two IFC-financed SHPs there – Nyambunde and Nyamasege. Those cumulative impacts will be addressed in the ESIA for Nyamasege, which has not yet been prepared, as specified in the ESRS. The aquatic biodiversity and water quality baseline studies and monitoring programs required in the ESAP will result in measures to better address the in-stream impacts, including improved calculation of environmental flows and the introduction of fish ladders where needed and not already part of sub-project design. The ESRS specifies that baseline surveys and impact assessments of transmission line corridors will be conducted in parallel with or prior to the surveys of the alignments. All of the foregoing studies will be used to update the respective ESIA and are preconditions for the signing of the sub-ERPAs for the individual SHPs.

As per the Environmental and Social Review Summary (ESRS) prepared for the seven IFC-financed SHPs, and the related Environmental and Social Action Plan (ESAP), KTDA Power has on a corporate level designed and implemented an Environmental and Social Management System; developed TORs for future Environmental and Social Impact Assessments (ESIA); developed Environmental Health and Safety Standards, prepared a Land Acquisition Policy and developed TORs for an aquatic biodiversity baseline and monitoring programs at the sites. These similarly apply to the three separately financed SHPs. A land acquisition and compensation report summarizing the details of the land parcels and compensation paid to all land owners for all project sites is required and is currently still a living document for North Mathioya. The final land reports will be expected to demonstrate that the willing-buyer-willing-seller model that has been applied to the project conforms to the Bank's PS5 and GN5. A total of 38 hectares has been acquired for the intake, canal, penstock and powerhouse as well as for the transmission lines for the first six projects. The project footprint has been altered where possible to avoid acquisition and compensation paid to permanently affected land owners.

Broad community support exists for the project, which is seen as beneficial in improving the incomes of local tea farmers (who, by being members of KTDA, also have a direct stake in the project). Stakeholder consultations have been carried out as part of the ESIA process. The scenario for community engagement is unique as a significant majority of the affected community members are KTDA farmers. PS 7 on Indigenous Peoples and PS8 on Cultural Heritage were not triggered, as no IPs were identified in the project area (which are agricultural tea landscapes) and the project sites are situated in agricultural landscapes (mainly tea farmers), thus cultural heritage sites are not anticipated to be encountered.

In reviewing for possible cumulative impacts, it was noted that none of the three non-IFC-funded SHPs have cumulative impact. They are on separate rivers, and there are no other SHPs from outside this proposed project on those rivers according to the World Small Hydropower

Development Report of 2013 (UNIDO, ICSHP). As specified in the ESRS, an environmental and social audit will be carried out for the three non-IFC funded SHPs as a precondition for no-objection to the signing of the individual plant sub-ERPAs. Cumulative impacts are possible for two of the IFC-funded SHPs that are located on the Gucha River, Nymabunde and Nyamasege, and these will be addressed in the ESIA for Nyamasege, which has not yet been prepared.

KTDA Power with IFC support has engaged competent contractors, project engineers, and consultants with a track record of impact management that can be evaluated from ongoing and nearly finished projects and has been satisfactory overall and KTDA Power has been enthusiastic and dedicated in its uptake of performance standards requirements. Also, KTDA Group is an existing IFC client and the IFC conducted Integrity Due Diligence on KTDA Group and KTDA Power and found no major issues. KTDA Power is led by an experienced management team and has hired appropriate in-house technical experts. It has been confirmed that there are no technical constraints in connecting SHPs to the grid. The Project has also obtained all the necessary regulatory approvals.

B. Disclosure Requirements Date	
Environmental and Social Review Summary:	
Dates of "in-country" disclosure	October 19 2018
Date of submission to InfoShop	June 25, 2018
For Category A projects, date of distributing the Executive Summary of the client's ESIA to the Executive Directors	N/A
If in-country disclosure of any of the above documents is not expected, please explain why:	

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

Client's Environment and Social Assessment			
Does the project require a stand-alone Environmental and Social Assessment (including EMP) report?	Yes [x]	No []	N/A []
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes [x]	No []	N/A []
Client's Environmental and Social Management System			
Has the client developed an appropriately detailed ESMS, <u>and</u> does the client have the technical and organizational capacity to implement it?	Yes [x]	No []	N/A []
Labor and Working Conditions			
Does the client have a written human resources policy available to all employees that describes labor and working conditions?	Yes [x]	No []	N/A []
Biodiversity and Natural Resource Management			
If PS 6 is applicable, would the project result in any significant conversion or degradation of critical natural habitats?	Yes []	No [x]	N/A []
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [x]	No []	N/A []
If the project entails use of living natural resources, has certification been obtained or a time-bound plan established to obtain certification?	Yes []	No []	N/A [x]

Physical Cultural Resources			
If PS 8 is applicable, does the project design include adequate measures related to physical cultural resources?	Yes []	No []	N/A [x]
Indigenous Peoples			
If PS 7 applicable, have Indigenous Peoples communities been consulted in accordance with requirements of PS 7?	Yes []	No []	N/A [x]
Have the requirements for Free Prior Informed Consent been met, and is there reasonable evidence of broad community support by the affected Indigenous Peoples communities?	Yes []	No []	N/A [x]
Involuntary Resettlement			
If PS 5 is applicable, have the requirements been complied with by the client?	Yes []	No []	N/A [x]
Pollution Prevention and Efficient Use of Resources			
Does the project comply with good international industry practice as presented in the WBG EHSGs or a similar internationally recognized benchmark?	Yes [x]	No []	N/A []
Is the project designed for energy efficiency and waste minimization?	Yes [x]	No []	N/A []
Community Health and Safety			
Has the assessment determined that local communities could face significant adverse impacts in event of an accident or emergency situation associated with the project?	Yes []	No [x]	N/A []
If so, has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	Yes []	No []	N/A [x]
Projects on International Waterways			
Have the other riparians been notified by the Bank of the project?	Yes []	No []	N/A [x]
Projects in Disputed Areas			
Has the memo conveying all pertinent information on the international aspects of the project, including the procedures to be followed, and the recommendations for dealing with the issue, been prepared by the Bank?	Yes []	No []	N/A [x]
Disclosure			
If Category A or B, has the ESRS been sent to the World Bank's Infoshop?	Yes [x]	No []	N/A []
Have relevant assessment documents prepared by the client been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [x]	No []	N/A []
Monitoring and Reporting			
Has the client agreed to submit an Annual Monitoring Report to the Bank to report on the management of environmental and social risks and impacts, and does the Legal Agreement contain this provision?	Yes [x]	No []	N/A []
Has the client agreed to report at least annually to local affected communities on how the project is performing with respect to environmental and social risks and impacts of concern to those communities?	Yes [x]	No []	N/A []

D. Approvals

<i>Signed and submitted by:</i>	<i>Name</i>	<i>Date</i>
Task Team Leader:	Juha Seppala	October 19, 2018
Environmental Specialist:	James Chacha Maroa	November 2, 2018
Social Development Specialist:	Margaret Ombai	November 2, 2018
Additional Environmental and/or Social Development Specialist(s):		
<i>Approved by:</i>		
Regional Safeguards Coordinator:	Nathalie Munzberg	November 12, 2018
Comments:		
Sector Manager:	Claudia Croce (acting for Marc Sadler)	November 14, 2018
Comments:		