

**INTEGRATED SAFEGUARDS DATA SHEET
CONCEPT STAGE**

Report No.: 120527

Date ISDS Prepared/Updated: September 11, 2017

I. BASIC INFORMATION

A. Basic Project Data

Country: Kenya	Project ID: P160157	
	Additional Project ID (if any):	
Project Name: KTDA Small Hydro Programme Of Activities (P160157)		
Task Team Leader: Juha Seppala, Jose Andreu (co-TTL)		
Estimated Appraisal Date: Oct 27, 2017	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: 8.0 million (carbon finance)		
Environmental Category: B – Partial Assessment		
Simplified Processing	Simple []	Repeater []
Is this a transferred project	Yes []	No [X]

B. Project Objectives [from section 2 of PCN]:

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

C. Project Description [from section 3 of PCN]:

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 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. First disbursement is expected shortly. IFC will thus be co-financing seven of the planned 10 SHPs, with other investors

providing 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 tied to CER deliveries after the SHPs become operational and start generating renewable electricity.

The underlying project has two objectives. First, the underlying project aims to generate captive electricity to enhance access to reliable electricity much needed by Kenya Tea Development Agency Holdings (KTDA)'s tea factories supplied by Regional Power Companies (RPCs), which are owned by the small-scale tea farmers' co-operatives. The underlying 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 and Lighting Company (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 underlying project 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 28.6 megawatts (MW) across 10 sites in and around the Central Highlands. These 10 SHPs will consist of 7-10 CDM 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. The third pilot, North Mathioya, is expected to become operational in September 2017.

Once the pilot project has demonstrated a certain level of track record, KTDA Power has planned commercial expansion/replication via development of an additional 7 SHPs through partnership with IFC. KTDA Power aimed aims 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, five have started construction.

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 IFC.

The underlying 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.

D. Project location and salient physical characteristics relevant to the analysis of environmental and social risks and impacts (if known):

The KTDA factories are distributed both throughout the East and West of the Great Rift Valley. The 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 2017	In process
4. Lower Nyamindi	1.8	Nyamindi	Kirinyaga	Kirinyaga RPC	IFC	Jun 2017	In process
5. South Mara	2.2	S. Mara	Tharaka Nithi	Greater Menu RPC	IFC	Jun 2017	In process
6. Iraru	1.5	Iraru	Meru	Greater Menu RPC	IFC	Jun 2017	In process
7. Kipsonoi I	3.6	Kipsonoi	Bomet	Settet RPC	IFC	Jun 2019	Not yet due
8. Nyambunde	2.0	Gucha	Kisii	Nyakuwana RPC	IFC	Jun 2018	In process
9. Kiringa	1.1	Kiringa	Kirinyaga	Kirinyaga RPC	IFC	Jun 2020	Not yet due
10. Nyamasege	4.0	Gucha	Kisii	Nyakuwana RPC	IFC	Jun 2021	Not yet due

Each of the project sites (notwithstanding Nyamasege which is not expected to start construction for some years) has an Environmental and Social Impact Assessment prepared. The projects are run-of-river types and consist of an intake, headrace water channel, forebay, penstock and surface power house connected to the tea factory and the national grid. The length of the headrace channel varies, but can be up to several kilometers in length. The infrastructure is located in 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).

The environmental and social risks have been identified and will be proposed to be managed using Bank Performance Standards per OP/BP 4.03. This is made possible by the client being a private sector entity and facilitated by the fact that the IFC has already conducted their environmental and social due diligence as per IFC Performance Standards for the seven SHPs in their investment pipeline. As the proposed project for the Bank is actually 10 SHPs, the Bank and IFC will apply the same level of environmental and social due diligence to the three non-IFC financed SHPs. KTDA Power, having prepared an environmental and social management system acceptable to IFC, will roll out the same to the individual sites. The Bank Task Team will work together with IFC E&S specialists to ensure that project also meets Bank Performance Standards requirements, and document the working arrangements in a memorandum. A joint IFC-Bank mission focusing on environmental and social risks and mitigation measures took place in August-September 2016 and a follow-up mission occurred in April 2017. As per IFC requirements, KTDA has retained a monitoring consultant, which visits all sites under construction every 6 months. IFC has also hired an engineering company for construction monitoring every quarter. The Bank will rely on

IFC's monitoring of IFC-financed SHPs during implementation, but aim to join missions where feasible. The Bank will supervise the three non-IFC funded SHPs.

The Performance Standards that have been triggered (the same as by the IFC) are PS1 (Assessment and Management of Environmental and Social Risks and Impacts); PS2 (Labor and Working Conditions); PS3 (Resource Efficiency and Pollution Prevention); PS4 (Community Health, Safety and Security); and PS6 (Biodiversity Conservation and the Management of Living Natural Resources). PS 5 has not been triggered, since the land acquisition (whether by easements or purchase) is conducted on a "willing buyer – willing seller" model according to KTDA's land acquisition policy, which is expected to conform to the PS5 and GN5. As per the Environmental and Social Review Summary (ESRS) and the related Environmental and Social Action Plan (ESAP), KTDA has 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 and Resettlement Framework and developed TORs for an aquatic biodiversity baseline and monitoring programs at the sites. EIAs exist for all sites, except Nyamasege SHP, since it is not expected to start construction for a few years. 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 those sites with construction ongoing. The final land reports will be expected to demonstrate that the willing-buyer-willing-seller model that has been applied to the project conforms with the Bank's PS5 and GN5. A total of 38 hectares has been acquired for the first six sites for the intake, canal, penstock and powerhouse as well as for the transmission lines. 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 EIA process. According to the ESRS, 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/coffee landscapes) and the project sites are situated in agricultural landscapes (mainly tea farmers, but coffee farmers also), thus cultural heritage sites are not anticipated to be encountered.

In reviewing for possible cumulative impacts, it was noted that nine of the 10 SHPs in the KTDA hydro program do not 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). Nyamasege SHP is the exception, since it is planned for the Gucha river on which Nyambunde SHP is also located. The environmental and social assessment has not been prepared for Nyamasege SHP; it will take into account possible cumulative impacts following IFC's Good Practice Handbook on Cumulative Impact Assessment. IFC's review of the ESIA's for the other sub-projects it is financing as reported in the ESRS has not identified any cumulative impacts, and the sample of completed ESIA's reviewed by the project team does not indicate any cumulative impacts either. An environmental and social audit will be carried out for all non-IFC funded SHPs, and its terms of reference will cover cumulative impacts as an additional protection.

The proposed project's overall risk rating is substantial and the project's EA category is B. Vegetation clearing, 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's 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 uses

were taken into account and downstream users were consulted in preparation of the ESIA's. The aquatic biodiversity 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 (Lower Mathioya for one already has a fish ladder). Cumulative impacts are only a potential issue on the Gucha River, where two SHPs will be located. In this regard the project is classified as Category B.

KTDA with IFC support has engaged competent contractors, project engineers, and consultants with track record of impact management that can be evaluated from ongoing and nearly finished projects and has been satisfactory overall and KTDA 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. However, it is noted that KTDA Power is a young company with less experience, which will be stretched out once all 10 SHPs will be constructed and operational. In addition, while all nine SHPs are not envisaged to have cumulative impacts, there is one SHP (Nyamasege) for which cumulative impacts might be an issue. This is reflected in the overall risk rating which is "substantial".

E. Borrower's Institutional Capacity for Effective SEMS:

KTDA is a long-standing and strategic IFC Agribusiness client in Sub Saharan Africa, and KTDA is was the recipient of Financial Times/IFC's Sustainable Finance Awards in 2013 as the best company in inclusive business. KTDA has been certified according to ISO 9001:2008 Quality Management System.

The project will follow OP/BP 4.03 Performance Standards for Private Sector Activities to address the management of environmental and social risks, as the proposed project aims to support KTDA Power, a subsidiary of the Kenya Tea Development Agency Holdings, which was privatized in 2000 and ultimately owned by 560,000 tea farmers via 66 tea factories.

Seven of the 10 small hydropower plants (SHPs) will receive loans from the IFC. The Bank will rely on IFC's review and assessment of the compliance to the performance standards, for the seven IFC-funded SHPs. The review of the three non-IFC SHPs will be carried out in cooperation with IFC to ensure KTDA Power applies the same environmental and social management standards as with the seven funded by IFC. The Bank and IFC will be providing implementation support for the seven IFC-funded SHPs and in addition the Bank will be providing implementation support for the three SHPs not receiving IFC loans.

KTDA Power has developed an Environmental and Social Management System, which is being rolled out for implementation at the various sites. KTDA Power has been in compliance with the Environmental and Social Action Plan (ESAP) requirements to date, and all required actions will need to be finalized, including complete land reports, biodiversity surveys and environmental and social audits for non-IFC funded SHPs, before individual SHPs can be included into the proposed Bank program. An Environment, Health and Safety (EHS) Manager has been recently appointed at KTDA Power to support the resident engineers at the sites responsible for the day-to-day environmental and social operations. However, as noted above, KTDA Power is a young company with less experience, which will be stretched out once all 10 SHPs will be constructed and operational. At the request of the financiers KTDA has retained an independent environmental and social consultant to monitor environmental and social performance of the seven IFC/Proparco/FMO financed sites every 6 months.

F. Environmental and Social Safeguards Specialists on the Team:

Svetlana Khvostova (GEN01)

Lilian Kahindo (GSU07)

Thomas Walton (Environmental Consultant)

Margaret Ombai (Social Safeguards Consultant)

II. PERFORMANCE STANDARDS THAT MIGHT APPLY

Performance Standards <i>(please explain why)</i>	Yes	No	TBD
PS 1: Assessment and Management of Environmental and Social Risks and Impacts	X		
<p>The Environmental and Social Impact Assessments (ESIAs) conducted for the IFC financed sites as well as externally financed sites identified potential direct and indirect environmental and social impacts from construction and operations of the subprojects as well as impacts of associated or ancillary facilities such as transmission lines and access roads. The ESIAs did not sufficiently address impacts related to PS6: impacts on aquatic ecology and determination of ecological flows. These ESIAs also did not cover IFC PSs, therefore the gaps were addressed in the project ESAP and will be fulfilled during implementation. The ESIA for Nyamasege (IFC financed) will be conducted in accordance with the Bank and IFC PSs and Kenyan EA regulations. All ESIAs have undergone public consultations during preparation.</p> <p>Most of the SHPs (with the exception of Nyamasege SHP planned for the Gucha river, where Nyambunde SHP is located) are all on separate rivers. Other SHPs in Kenya have been listed in the World Small Hydropower Development Report of 2013 (UNIDO, ICSHP) and none are on the same rivers as the proposed 10. Nyamasege SHP environmental and social assessment will take into account possible cumulative impacts.</p>			
PS 2: Labor and Working Conditions	X		
<p>IFC's review considered KTDA Power's operations with regards to fair, safe and healthy working conditions and is based on an assessment of the practices in place, and a review of the documents, and information made available during due diligence process. When fully operational, each SHP will employ approximately 10 staff. During construction, the number of employees is expected to peak at 300 for each project. It is expected that a substantial number of employees will be recruited from the local community for each project. No workers' accommodation is planned for the projects in construction phase. For future projects, where applicable, the EPC contractors for the other projects shall develop workers' accommodation which meet internationally recognized standards such as those specified in the IFC/EBRD guidance document on workers' accommodation.</p>			
PS 3: Resource Efficiency and Pollution Prevention	X		
<p>This is a renewable energy project which is expected to have a net positive impact by replacing fossil fuel in power generation. These SHPs have been developed as part of KTDA's strategy to move away from fossil fuel consumption and also reduce consumption of biomass for generating electricity at the tea factories, thereby reducing carbon emissions and reducing production costs.</p>			
PS 4: Community Health, Safety, and Security	X		
<p>The projects sites are typically located within 100m of farm plots and/or households. The projects have been designed to meet recognized industry standards so as to minimize potential</p>			

Performance Standards <i>(please explain why)</i>	Yes	No	TBD
<p>impacts on the community. The socio-economic assessment for the projects revealed no significant trend in diseases and the projects are not expected to lead to an increase in any disease; influx of migrant workers will be limited as most of the employees are expected to be recruited from the local communities and foreign workers will be limited to a handful per site. Medical facilities will be available on each construction site and HIV/AIDS awareness campaigns will be included in the training sessions for all employees. Drowning risk posed by headrace canals was a concern raised by community members during ESIA consultations, and all canals will be fenced as a mitigation measure.</p>			
<p>PS 5: Land Acquisition and Involuntary Resettlement</p>		X	
<p>This PS does not apply due to land transactions being conducted following a “willing buyer-willing seller” approach. The designs of the projects considered options to minimize the need for extensive land acquisition; where applicable, the project footprint has been altered to avoid land that was not available for acquisition, and, for the major part, resettlement agreements are based on easement with only limited purchase where this was necessary. Where applicable, compensation was paid to land owners that would be temporarily affected by the project. In addition, beyond the value of the land, compensation was also paid to permanently affected land owners for the crops on their plots of land. The land acquisition and compensation process involved extensive consultation with the land owners (mostly KTDA farmers), the local administrative authorities and requisite national agencies. Compensation and land rates have been agreed and paid for the parcels of land and crops, and resettlement agreements have been reached for the cases where cash payments were not appropriate and the parcel owners preferred land-for-land settlements instead. There are a few parcels of land which have not been acquired and are pending the resolution of land titles issues within the affected families. These include one parcel in Lower Nyamindi sub-project, 11 parcels in South Mara sub-project and one parcel in Iruru sub-project. As indicated in the ESAP for this project, KTDA Power shall provide a final land acquisition and compensation report summarizing the details of the land parcels and compensation paid to all land owners for all project sites. In addition, the final land report will demonstrate that the “willing-buyer-willing-seller principle has been adhered to as required by PS5 and GN5. This report is currently still a living document for those sites with construction ongoing in final draft stage. A total of 38 hectares has been acquired for the first six sites for the intake, canal, penstock and powerhouse as well as for the transmission lines. The project footprint has been altered where possible to avoid acquisition and compensation paid to permanently affected land owners.</p>			
<p>PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</p>	X		
<p>Biodiversity issues relate to impacts of the SHPs on existing flora and fauna in the different locations. 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 species. The EIAs for the 9 projects considered the potential impacts on terrestrial flora and fauna; a diverse amount of plant and animal species were identified in the project areas with the dominant plant being tea as the projects are located in the tea-producing areas. In general, the project sites are considered modified habitats which have been modified through agricultural use and other human activities. There were no endangered terrestrial species identified during the EIA and no area was identified as a critical habitat.</p>			

Performance Standards (<i>please explain why</i>)	Yes	No	TBD
The EIAs did not include biodiversity assessments for the rivers and ecological flow assessments. As indicated in the ESAP for this project, biodiversity monitoring will be required for the first six projects during the construction phase as well as during operations. The same requirements will be for the three non-IFC funded sites. For the Nyamasge project, the EIA shall include a detailed biodiversity assessment for the river as well as ecological flow assessment. The EIA shall also cover the potential cumulative impacts of the Nyabunde and Nyamasege SHPs on the River Gucha.			
An ecologist is being hired by KTDA to carry out a biodiversity baseline and monitoring plan.			
PS 7: Indigenous Peoples		X	
The SHP sites are not known to be in sites with indigenous peoples. The sites are in agricultural tea/coffee growing areas.			
PS 8: Cultural Heritage		X	
The project sites are situated in agricultural landscapes (mainly tea farmers, but coffee farmers also), thus cultural heritage sites are not anticipated to be encountered.			

III. SAFEGUARD PREPARATION PLAN

A. Target date for the Quality Enhancement Review (QER), at which time the ESRS would be disclosed and the PAD-stage ISDS would be prepared:

N/A

B. For Category C or Category FI projects that do not require an ESRS, the target date for preparing the PAD-stage ISDS:

N/A

C. Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing¹ should be specified in the PAD-stage ISDS:

May-December 2017. The Environmental and Social Action Plan has been disclosed via the IFC website (<https://disclosures.ifc.org/#/projectDetail/ESRS/36402>) and the ESAs have also been disclosed for the IFC financed SHPs (Lower Nyamindi, South Mara, Iraru, Kipsonoi, Nyambunde and Kiringa). The ESAs for the non-IFC funded SHPs have been prepared and will

¹ Reminder: The Bank's Access to Information Policy requires that safeguard-related documents be disclosed before appraisal (i) at the InfoShop and (ii) in-country, at publicly accessible locations and in a form and language that are accessible to potentially affected persons.

be disclosed via Infoshop before such a sub-project is included into the program. The ESIA for Nyamasege is not yet due and will be prepared closer to planned construction start date.

IV. APPROVALS

<i>Signed and submitted by:</i>		
Task Team Leader:	Name: Juha Seppala	October 7, 2017
<i>Approved by:</i>		
Regional Safeguards Coordinator:	Name: Nathalie Munzberg	October 10, 2017
Comments:		
Practice Manager:	Name: Marc Sadler	October 16, 2017
Comments:		