

Environmental and Social Action Plan (July 2019)

Note: Many of the ESAP items will be captured within the appropriate environmental and social management plan listed in Table 1 (as identified in the 'Deliverable' column), but they are included here to ensure that they are adequately captured to MIGA's satisfaction.

Item #	Task Description	Deliverable	Completion Date
PS1: Assessment and Management of Environmental and Social Risks and Impacts			
1	Tina Hydropower Limited (THL) will develop and implement the environmental and social management plans set out in Table 1 below that are the responsibility of THL.	Management plans finalized and included in relevant contracts with contractors.	Completion timeline in line with Table 1.
2	THL will ensure that the Engineering Procurement and Construction (EPC) contractor prepares the management and monitoring plans set out in Table 1 below which are allocated to the EPC contractor.	Management plans finalized and included in relevant contracts with contractors.	Completion timeline in line with Table 1.
3	THL will develop an Environmental and Social Management System (ESMS) for the Project which is based on K-Water's existing corporate ESMS. THL will ensure that the Project ESMS meets the requirements of MIGA's Performance Standard 1 (PS1).	THL ESMS	Before the start of construction
4	<p>a) Review the Cumulative Impact Management Strategy prepared by the Project Office and develop an implementation plan to incorporate relevant recommendations of the Strategy into THL and the EPC contractor's management plans. The implementation plan should include a timeline to complete the management plans update.</p> <p>b) Revise management plans as per the implementation plan to MIGA.</p>	<p>a) Timebound implementation plan</p> <p>b) Revised environmental and social management plans incorporating relevant management measures from the cumulative impact management strategy.</p>	<p>a) 90 days after Cumulative Impact Management Strategy is received.</p> <p>b) As per timeline proposed in the implementation plan and agreed with MIGA.</p>
5	<p>THL will engage suitably qualified environmental and social personnel to manage E&S and labor aspects. Roles, responsibilities and authority to implement the ESMS will be clearly defined. As a minimum this will include:</p> <p>(a) environmental and social manager with international experience; (b) environmental and social officers (2); and (c) human resources manager.</p>	<p>Job profiles, CVs and abridged letters of appointment for:</p> <p>(a) Environmental and social manager; (b) environmental and social specialists; (c) Human Resources manager</p>	<p>(a) Prior to completion of the detailed design (b) Before start of construction (c) Before mobilization of construction workforce</p>
6	<p>The EPC contractor will engage suitably qualified personnel to manage the ESHS and labor aspects during construction activities. As a minimum this will include:</p> <p>(a) an Environmental, Health and Safety (EHS) Manager with international experience;</p>	<p>Job profiles, CVs and abridged letters of appointment for the following positions:</p> <p>(a) EHS Manager; (b) environmental officer;</p>	Before the start of construction

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	(b) one environmental officer; (c) one health and safety officer; and (d) Human Resources Manager.	(c) health and safety officer; and (d) Human resources manager.	
7	EPC contractor will undertake pre-construction surveys of benthic invertebrate and fish upstream and downstream to provide a current baseline against which impacts can be monitored and adaptive management measures developed (if needed).	Benthic Invertebrate and Fish Survey Pre-Construction Baseline Report incorporated into the Biodiversity Management Plan	Before the start of construction
PS 2: Labor and Working Conditions			
8	THL will prepare HR Policy and procedures to be consistent with Solomon Islands Government labor laws and the requirements of PS2.	THL HR Policy and procedures	Before the start of construction
9	The EPC contractor will also be required to develop an HR Policy and procedures in line with THL's policy and procedures and MIGA's PS2. The EPC HR Policy and procedures will also apply to sub-contractors.	EPC contractor's HR Policy and procedures and a dissemination plan of the HR policy and procedures to sub-contractors	Before the start of construction
10	EPC contractor will engage an independent consultant to undertake semi-annual labor audits of the EPC and sub-contractors.	Terms of reference for the independent labor consultant	Before the start of construction
11	THL and EPC contractor will prepare a list of technical skills and services that will be needed during construction and operations to feed into the technical and vocational training being prepared under the community benefit sharing pilot.	List of technical skills and services needed for construction and operations	Before the start of construction
12	THL, with input from the EPC contractor will identify an employment quota for gender equality and balance and put in place strategies to ensure that this quota is fulfilled by female workers on equal pay to male workers.	Employment quota for females and female employment strategy plan.	Before the start of construction
13	THL will ensure that the EPC contractor prepares a Worker Accommodation Plan to cover key aspects of the EBRD / IFC Guidance Note on Worker Accommodation (2009). The plan will also provide an indication of the number of workers expected to need accommodation over the construction phase.	Worker Accommodation plan incorporated into Human Resources and Labor Management Plan	Before the start of construction
14	THL will establish a workers' grievance mechanism for its own staff and will ensure that the EPC contractor establishes one for the construction workforce (including sub-contractor staff). THL grievance mechanism will be available for all project personnel, including contractor staff.	THL and EPC's worker's grievance redress mechanism plan; Grievances log database	Before the start of construction
15	THL will ensure that the EPC contractor prepares a training plan, which will include <i>inter alia</i> : site induction to staff and visitors; occupational health and safety requirements, incident/accident reporting; HR policy	Training plan incorporated into the Human Resources and Labor Management Plan	Before the start of construction

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	and procedures, workers' code of conduct, grievance redress mechanism, and job specific training on tasks with specific health and safety risks such as welding, use and storage of explosives, hazardous chemicals, working with live equipment, tunneling, electromagnetic field safety, working at height, working on or near water, crossing water courses and road safety.		
PS 3: Resource Efficiency and Pollution Prevention			
16	THL will determine the acid generation potential of the waste rock likely to be generated during tunnel construction, and will ensure that the EPC contractor incorporates measures to identify and manage acid generating rock cuttings into the appropriate management plan in Table 1.	Results incorporated into the Waste Management Plan (see item 1)	Before start of construction
17	HEC will install a flow monitoring stations in the dewatered stretch and undertake regular monitoring of flow conditions in line with Power Purchase Agreement monitoring requirements.	Map and photographs showing the installed river flow monitoring station in the dewatered stretch.	Before start of construction
18	HEC will perform a study by a fluvial hydrologist to determine the magnitude and expected timeframe for downstream impacts, including the extent to which reservoir sediment removal and release downstream will mitigate potential impacts. Based on the results of the study, THL will incorporate measures, such as procedures and timing for flushing / dredging sediments and gravel and downstream release, into the Reservoir Operations and Management Plan.	Reservoir Operation and Management Plan including procedures and timing for flushing/ dredging and downstream release.	Before commissioning
PS 4: Community Health and Safety			
19	HEC will conduct a dam break analysis, which will show the extent of any flooding in the event of a dam break. This report will also consider the potential safety risks to downstream communities associated with peaking operation.	Dam break analysis and recommended measures incorporated into Emergency Preparedness Plan	Before start of construction
PS 5: Land Acquisition and Involuntary Resettlement			
20	HEC will prepare a report summarizing the land acquisition process for the worker accommodation camp.	Report detailing the process for acquisition of land for the worker camp site	Before construction of the worker accommodation camp
21	THL in cooperation with the Project Office will develop a mechanism to identify and provide compensation in case of accidental (unplanned) damage to private and community land and assets outside of the acquired land	Process for compensation of accidental impact on land incorporated into the Grievance Redress Mechanism	Before start of construction
PS 6: Biodiversity Conservation and Sustainable Management of Living Resources			
22	THL will ensure that a Biodiversity Action Plan with the objective of achieving net gain is incorporated into the Biodiversity Management Plan in Table 1.	Biodiversity Action Plan incorporated into the Biodiversity Management Plan	Before start of construction

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23	THL will ensure that a Biodiversity Monitoring and Evaluation (M&E) Program is incorporated into the Biodiversity Management Plan (referred to in Table 1). As per IFC Guidance Note 6, the M&E Program will include: (i) <i>baseline</i> , measures of the status of biodiversity values prior to the project's impacts; (ii) <i>process</i> , monitoring of the implementation of mitigation measures and management controls; and (iii) <i>outcomes</i> , monitoring of the status of biodiversity values during the life of the project, compared to the baseline.	Biodiversity Monitoring and Evaluation Program incorporated into the Biodiversity Management Plan	Before start of construction
28	THL will incorporate the actions to implement, monitor and review the environmental flows into the appropriate plan in Table 1.	Environmental flows measures incorporated into the Operations Environmental Management Plan.	Before commissioning

Table 1 – Environmental and Social Management Plans

No.	Name	Prepared by	Implemented by
	Dam Safety Plans		
DS-1	Construction and Quality Assurance Plan	THL	THL and Owner's Engineer
DS-2	Instrumentation Plan	THL	EPCC
DS-3	Operation and Maintenance Plan	THL	THL
DS-4	Emergency Preparedness Plan	THL	THL
	Preparation Phase Plans		
P-1	Construction ESMP (CESMP)	EPCC	EPCC
P-2	Biodiversity Management Plan	EPCC	EPCC, THL
P-3	Stakeholder Engagement and Communications Plan	THL	THL
P-4	Human Resources and Labour Management Plan	THL/EPCC	THL/EPCC
P-5	Influx Management Plan	EPCC	EPCC
P-6	Grievance Redress Mechanism	EPCC and THL	EPCC and THL
P-7	Security Management Plan	EPCC and THL	EPCC and THL
P-8	Worker's Health and Safety Plan	EPCC	EPCC
P-9	Workers Code of Conduct	EPCC	EPCC
P-10	Community Health and Disease Vector Management Plan	EPCC	EPCC and THL
P-11	Traffic Management Plan	EPCC	EPCC
P-12	Waste Management and Point Source Pollution Plan	EPCC	EPCC
P-13	Hazardous Materials Management Plan	EPCC	EPCC
P-14	Spill Prevention and Emergency Response Plan	EPCC	EPCC
P-15	Air Quality Management and Dust Control Plan	EPCC	EPCC
	Construction Phase Plans		
C-1	Cultural Heritage Management Plan	PO	PO
C-2	UXO Management Plan	EPCC	EPCC
C-3	Forest Clearance Plan	EPCC	EPCC
C-4	Post-construction Rehabilitation and Revegetation Plan	EPCC	EPCC
C-5	Quarry Management Plan	EPCC	EPCC
C-6	Reservoir Preparation Plan	MMERE	MMERE
C-7	Water Supply Replacement Plan	EPCC	EPCC
C-8	Crossing Management Plan	EPCC	EPCC
C-9	Spoil and Topsoil Management Plan	EPCC	EPCC
C-10	Drainage, Erosion and Sediment Control Plan	EPCC	EPCC
C-11	Drill and Blast Management Plan	EPCC	EPCC
C-12	Stormwater Management Plan	EPCC	EPCC
C-13	Noise and Vibration Management Plan	EPCC	EPCC
C-14	Cumulative Impact Management Strategy	SIG	Various public private entities

No.	Name	Prepared by	Implemented by
	Operations Phase Plans		
O-1	Operations ESMP (OESMP)	THL	THL
O-2	Reservoir Operation & Management Plan	THL	THL
	Decommissioning Phase Plans		
D-1	Decommissioning Plan	THL (SIG, if it continues to operate after PPA period)	THL
D-2	Retrenchment Plan	THL (SIG, if it continues to operate after PPA period)	THL
	Monitoring Plans		
M-1	Suspended Sediment Monitoring Plan	EPCC	EPCC and THL
M-2	Water Quality Monitoring Plan	EPCC	EPCC and THL
M-3	Fish, Algae, and Macro- Invertebrate Monitoring Plan	EPCC	EPCC and THL
M-4	Social Impacts Monitoring Plan	TRHDP-PO	TRHDP-PO
M-5	Flora and Fauna Monitoring Plan	THL and EPCC	THL and EPCC
M-6	Construction Works Monitoring Plan	EPCC	EPCC
M-7	Air Quality and Noise Monitoring Plan	EPCC	EPCC