

Tajikistan : Nurek Hydropower Rehabilitation, Phase I

1. Project Information

Project ID:	P000018	Instrument ID:	L0018A
Member:	Tajikistan	Region:	Central Asia
Sector:	Energy	Sub-sector:	Renewable energy generation-hydropower
Instrument type:	<input checked="" type="checkbox"/> Loan:60.00 US Dollar million <input type="checkbox"/> Guarantee	Lead Co-financier (s):	World Bank
ES category:	B	Borrowing Entity:	Ministry of Finance, Tajikistan
Implementing Entity:			
Project Team Leader:	Emil Zalinyan		
Responsible DG:	Gregory Liu		
Responsible Department:	INF2		
Project Team Members:	Liu Yang, Project Counsel; Yunlong Liu, OSD - Procurement Specialist; Shodi Nazarov, OSD - Financial Management Specialist; Chongwu Sun, OSD - Environment Specialist; Komron Rajabiyon, Back-up PTL; Yuyou Guo, Project admin		
Completed Site Visits by AIIB:	Mar, 2019		
Planned Site Visits by AIIB:	The team will coordinate with the World Bank team to join their next site visit in 2024.		
Current Red Flags Assigned:	1		
Current Monitoring Regime:	Regular Monitoring		
Previous Red Flags Assigned:	1		
Previous Red Flags Assigned Date:	2023/06		

2. Project Summary and Objectives

The objectives of the Project are to rehabilitate and restore the generating capacity of three units of the Nurek hydropower plant, improve their efficiency, and strengthen the safety of the Nurek dam.

Components: 1) Power Plant Rehabilitation Component, 2) Dam Safety Component.

Total Project Cost (Phase I): US\$350 million

Financing plan: IDA US\$225.7 million and AIIB US\$60 million (joint co-financing); EaDB US\$40 million (parallel co-financing).

Project beneficiaries: The beneficiaries of the Project are all electricity consumers in the country and BT. In particular, the project will preclude loss of electricity supply from Nurek HPP, which accounts for 70 percent of winter generation during the time period of October-March when demand is the highest. Thus, the entire 8.5 million population of the country (including 4.2 million females) will benefit from the project. Moreover, 53,680 legal entities connected to the electricity network will also benefit because the project will help to meet their

demand in a reliable manner. Rehabilitation of Nurek HPP will also allow BT to reduce revenue loss due to equipment failures caused by dilapidation and obsolescence. Those equipment failures lead to electricity under-supply from the power plant, which creates a financial loss for BT. In case of disconnection of Nurek HPP from the power supply network due to failure of equipment or infrastructural components, the power plant does not supply electricity until the technical issues are fixed.

3. Key Dates

Approval:	Jun. 15, 2017	Signing:	Aug. 01, 2017
Effective:	Apr. 30, 2018	Restructured (if any):	
Orig. Closing:	Dec. 31, 2023	Rev. Closing (if any):	

4. Disbursement Summary (USD million)

Contract Awarded:		Cancellation (if any):	0.00
Disbursed:	37.00	Latest disbursement (amount/date):	1.12/Nov. 29, 2023
Undisbursed:	23.00	Disbursement Ratio (%) ¹ :	61.67

5. Project Implementation Update

Project implementation is progressing despite several challenges (major impacts of COVID-19 restrictions, transportation challenges caused by regional conflicts, and technical issues that required additional work). Rehabilitation of the first unit (Unit A/1) has been completed, with the unit put into operation by the President of Tajikistan on October 24, 2022. Rehabilitation of the second unit (Unit B/4) is progressing and expected to be completed by March/April 2024. The major dam safety activities on rehabilitation of the spillway gates and intake gates, upgrade of monitoring instruments and management system, preparation of the Emergency Preparedness Plan, Operation and Maintenance Plan, Instrumentation Plan, and installation of a flood forecasting system are ongoing. The Project management consultant supports BT in the implementation management of the project and supervision of the contractors and consultants. The dam safety Panel of Experts and the environmental and social Panel of Experts provide oversight and advice on the implementation of the project.

A non-material project change is being processed to implement the following changes to allow completion of the ongoing activities: • Extension of the Loan Closing Date from December 31, 2023, to December 31, 2026, • Reallocation of AIIB project funds between project expense categories, • Moving miscellaneous civil works for dam safety improvement from Phase 1 to Phase 2 to be entirely financed by the Eurasian Fund for Stabilization and Development (EFSD), • Update of the financial covenants to reflect the latest financial projections for BT following the sector unbundling and the Government's latest commitments to achieving cost recovery tariff.

¹ Disbursement Ratio is defined as the volume (e.g. the dollar amount) of total disbursed amount as a percentage of the net committed volume.

The project development objective remains relevant and achievable within the extension of the project closing date.

Components	Physical Progress	Environmental & Social Compliance	Procurement
Component 1: Power Plant Rehabilitation (design, model testing and installation of turbines) (US\$45 M)	\$34.4m	No serious compliance issues have been reported.	<p>Component 1.1 Replacement and refurbishment of mechanical, electrical, and electromechanical equipment. The contract was awarded to ANDRITZ HYDRO GMBH (Germany and Austria)/ANDRITZ HYDRO CORPORATION (USA) and signed on July 21, 2018.</p> <p>Component 1.2. Replacement of six autotransformers: 100% financed by the Eurasian Development Bank. The contract was awarded to Tojikgidroelektromontaj.</p>
Component 2: Dam Safety (civil works) (US\$15 M)	\$2.60m	No issue	<p>Dam Safety Component consists of the following parts:</p> <p>1) Dam monitoring instrumentation, geodetic instrumentation and geotechnical investigations. Tojikgidroelektromontaj (TGEM) and Barqi Tojik signed the contract on 10/03/2020.</p> <p>2) Hydromechanical equipment. The contract was awarded to Sinohydro (China) and signed in March 2020.</p> <p>3) Miscellaneous civil works for the improvement of dam safety. The scope of miscellaneous civil works will be informed by the ongoing geotechnical investigation and the dam safety assessment. These works are expected to commence in 2025 and will</p>

			<p>take four years to complete, with an estimated completion date of June 2029. All ongoing activities under Phase 1 of the Project are expected to be completed by mid-2026. Therefore, the dam safety improvement civil works will be removed from Component 2 and will be implemented under Phase 2 of the Project with financing from EFSD.</p>
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Financial Management:

The Financial Management (FM) arrangements at the PRG BT, including planning and budgeting, accounting, financial reporting, funds flow, and staffing, are Moderately Satisfactory. The project audit report for 2022 was submitted on time, without qualifications. The auditors for the entity audit issued a qualified opinion and raised issues in the management letter. BT submitted an action plan to specify steps to address the issues raised.

6. Status of the Grievance Redress Mechanism (GRM)

A grievance redress commission (GRC) including representatives at central and local levels, nominated by Nurek HPP, Stucky, site PIU, local authority, jamoat Dukoni and jamoat Puli Sangin, is fully functional. Contractor Andritz / TajikSGEM has relevant complaint forms in place for workers to apply. HSE specialist of TGEM-TT and TGEM also has complaints logbooks. Public consultations are being performed regularly. For female workers, the project will ensure that safety measures are in place and a separate GRM is available and easily accessible by them for any complaints related to GBV.

7. Results Monitoring (please refer to the full RMF, which can be found on the last page of this PIMR)

Remarks:

Regardless of delays in the project's physical progress, no data collection delays are foreseen.

Project Objective Indicators	Indicator level	Unit of Measure	Cumulative Target Values																					Frequency	Responsibility	Comments	
			Baseline		2016		2017		2018		2019		2020		2021		2022		2023		End Target						
			Year	Value	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Year	Target	Actual				
Generation capacity of energy constructed or rehabilitated under the Project	Project	MW	2016						0	0	0	0	0	0	335	0	670	375	1005	375			1005		Annual	BT	As of Nov 15, 2023
Estimated annual electricity generation of three units included in the scope of the Project	Project	GWh	2016						At least 3,750G Wh	3750	At least 3,750G Wh	3716	At least 2,500G Wh	3510	At least 2,511G Wh	2996	At least 2,522G Wh	2996	At least 3,783G Wh	3853			At least 3,783G Wh		Annual	BT	As of Nov 15, 2023
Estimated increase of winter electricity generation of rehabilitated units due to efficiency improvements	Project	GWh	2016						0	0	0	0	0	0	at least 11GWh	0	at least 22GWh	11	at least 33GWh	16			at least 33GWh		Annual	BT	As of Nov 15, 2023
Improved dam safety against hydrological and geological risks	Project	Text	2016						No	No	No	No	No	No	No	No	Yes	Yes	Yes	Partially			Yes		Annual	BT	As of Nov 15, 2023
People provided with improved electricity service	Project	Number	2016						0	0	0	0	0	0	8,276,000	0	8,276,000	8,617,000	8,276,000	9395000			8,276,000		Annual	BT	As of Nov 15, 2023
Female beneficiaries	Project	% Sub-Type Supplemental	2016						0	0	0	0	0	0	49.3%	0	49.3%	49.3%	49.3%	49.3%			49.3%		Annual	BT	As of Nov 15, 2023

Project Intermediate Indicators	Indicator level	Unit of Measure	Cumulative Target Values																				Frequency	Responsibility	Comments			
			Baseline		2016		2017		2018		2019		2020		2021		2022		2023		End Target							
			Year	Value	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Year	Target				Actual		
Cumulative number of generating units rehabilitated	Project	Number	2016							Contract for rehabilitation is signed and effective	Physical project implementation has not started, and some contracts are still under procurement	Turbine hydraulic model test is completed	Contract signed, model testing started.	Design for generating units is completed and manufacturing commenced	Completed	1			Rehabilitation on generating unit 1 is still in progress.	2	1	3	1	3		Semi-annual	BT	As of Nov 15, 2023
Cumulative number of autotransformers replaced	Project	Number	2016						Bidding document is issued and evaluation of bids is completed	n/a	Contract for replacement of autotransformers is signed and effective	n/a	The supply of autotransformers is underway	0		Installation of autotransformers is underway		Preparation of design documents continued. Delays encountered due to civil issues.	6	0	6	0	6		Semi-annual	BT	As of Nov 15, 2023	
Enhanced hydrological safety	Project	Text	2016						Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood	Once in 10,000 years flood		Annual	BT	As of Nov 15, 2023		
Upgrade of the dam monitoring instrumentation completed	Project	Text	2016						Bidding document is issued	n/a	Contract for upgrade of dam instrumentation is signed and effective	n/a	The supply and installation of the dam monitoring instrumentation commenced	The contract is under implementation	The dam monitoring instrumentation is partly operational	Foreseen completion is postponed as it was required to update design for geodetic network	The dam monitoring instrumentation is fully operational	Substantially completed	Substantially completed					The dam monitoring instrumentation is fully operational		Semi-annual	BT	As of Nov 15, 2023
Civil, electrical and mechanical works for improvement of the dam safety completed	Project	Text	2016						Bidding document is issued	n/a	Contract for procurement of the dam safety improvement works is signed and effective	n/a	The dam safety improvement works are in progress	The bidding documents to be finalized in Oct 2021 once geotechnical investigations are completed	The dam safety improvement works are in progress	The bidding documents to be finalized in March 2022 once geotechnical investigations are complete	Rehabilitation of the spillway tunnel, gates and hoisting system is completed	The bidding documents will be finalized in Oct-Dec 2023	Partially completed				Rehabilitation of the spillway tunnel, gates and hoisting system is completed		Semi-annual	BT	As of Nov 15, 2023	

