Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 05/24/2020 | Report No: ESRSA00861

BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Tajikistan	EUROPE AND CENTRAL ASIA	P173804	
Project Name	Nurek Hydropower Rehabilitation Project Phase 2		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	5/22/2020	6/29/2020
Borrower(s)	Implementing Agency(ies)		
Ministry of Finance, Ministry of Energy and Water Resources	Barqi Tojik		

Proposed Development Objective(s)

The project development objectives are to rehabilitate and increase the generating capacity of six power generating units of Nurek hydropower plant and improve their efficiency.

Financing (in USD Million)	Amount
Total Project Cost	191.90

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

Component 1: Rehabilitation of six generating units and other key infrastructure, and supply of machinery required for operation and maintenance of the power plant. This component will finance: (a) rehabilitation of six power generating units (generators, turbines, main inlet valves, and transformers), auxiliary systems and key balance of plant; (b) provision of spare parts; (d) rehabilitation of Nurek bridge; (e) rehabilitation of the powerhouse and some other buildings/structures at Nurek HPP that may require rehabilitation; and (f) purchase of machinery, including excavators, forklift trucks, truck cranes, required for operational and maintenance needs of the power plant.

Component 2: Technical assistance to BT. This would include: (a) Project management consultant (PMC) to assist with construction supervision of the project; (b) Panel of Experts (PoE) on matters related to dam safety and other critical aspects of the Project; (c) technical and other engineering studies, which may be required during project implementation; (d) consultant services to support BT with citizen engagement and gender-informed consultative processes during project implementation; (e) capacity building for Nurek HPP and BT staff in dam safety, operation and management of hydro facilities, project management, including fiduciary and safeguards aspects of the Project; and (f) incremental operating costs of the project implementing entity.

D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

Tajikistan (TJ) is a landlocked country located in southeast Central Asia (CA), bordering Afghanistan, China, Kyrgyz Republic, and Uzbekistan. Natural hazards such as floods, earthquakes, landslides, mudflows, avalanches and heavy snowfalls are common.

The Amu Darya is the largest river of CA and is formed by the confluence of its two most important tributaries, the Pyanj and Vakhsh Rivers. The Vakhsh contributes an average of about 26% of the annual flow of the Amu Darya, and the Pyanj about 40%. In the Amu Darya, as in the Vakhsh, the flow pattern is highly seasonal, with high flows in summer due to snow and glacier melt in the mountains, and low flows in winter since most of the precipitation in the catchment area falls as snow.

The Nurek Hydropower facility on Vakhsh river is located 70 km from Dushanbe, the capital city, in the Danghara and Nurek districts, in Khatlon Province. Its reservoir is located both in the regions of Khatlon and Republican Subordination. The total installed generation capacity of Tajikistan is 6,100 MW and HPPs account for 90 percent. The 3,000 MW Nurek HPP, with a seasonal reservoir, is the largest generating plant and generates 50% of the total annual energy requirement. In addition to electricity generation, the reservoir supplies irrigation water for about 70,000 ha of land via a tunnel with additional irrigation of tens of thousands of hectares made possible by further downstream regulation of the Vakhsh River at other smaller dams. Upstream of Nurek HPP, construction of another large-scale Rogun hydropower project is underway. This project will have an installed capacity of 3,600 MW upon completion and will generate about 14,400 GWh of electricity per year. Flows in Vakhsh River are seasonal and with a large seasonal variation between winter and summer flows. After the construction of hydropower projects on Vakhsh River, river flows are now regulated and controlled. The Vakhsh River is characterized by a high sediment load due to the intensity of erosion processes in its catchment, a concentration of suspended solids fluctuates during the year and reaches its maximum during the flood season, and water quality characterized by high salinity levels. Poor water quality has influenced the quality of fish habitats. According to the Rogun HPP ESIA, no long-range fish migration presently takes place in the Vakhsh River.

Tigrovaya Balka State National Reserve, the only protected area downstream of the Nurek HPP, is located in the lowermost part of the Vakhsh river basin close to the border with Afghanistan. Tugai designates a specific type of floodplain habitat in desert areas of CA, characterized by a groundwater level close to the surface, which conditions a specific vegetation type of a number of tree species, reeds etc. and a habitat for many fauna species. Illegal and uncontrolled logging, hunting and fishing have led to a sharp decline of many species.

The project area, in the Khatlon region, is predominately rural and dependent upon subsistence agriculture. In 2009, Khatlon was classified as the poorest region in Tajikistan with a high, unofficial, unemployment rate. The region has the highest rates of under-nutrition and the largest number of people living below the poverty line. Many able-bodied

workers, primarily men, migrate to Russia or Dushanbe for employment. Vulnerable households, other than the very poor, may be found with women headed households or elderly. However, the women-headed households are often the result of worker migration and would receive remittances while elderly citizens live with family members and therefore not considered vulnerable.

D. 2. Borrower's Institutional Capacity

Barki Tojik (BT) is a state-owned company and owns and operates several HPPs in the country. BT, including its Project Realization Group (PRG), is responsible for the implementation of Nurek Hydropower project and remains the implementing agency for the proposed Phase-2 activities. A dedicated unit 'Nurek Operation Unit' (NOU) within BT is responsible for the operation of Nurek HPP. Currently, safeguards planning and implementation capacity both at BT and NOU is limited. Project Management Consultant (PMC) are tasked with implementation of environmental due diligence hired by BT. The ESIA report prepared for the Phase-1 project recommended hiring individual environment and social consultant to liaise with PMC. BT has also hired environment and social individual consultant and purchased equipment to undertake select environmental monitoring.

As per existing arrangements described in the project ESIA, Project Management Consultant will review and approve the contractors' management plans and then oversee the contractors to ensure that these companies, their subcontractors, and all workers are fully implementing the required mitigation measures during the pre-construction, construction, and demobilization phases. These measures include training for workers so they are familiar with their own personal responsibilities as well as their employers'. The first level of monitoring during construction will be conducted by the contractors in routine management of ongoing activities. This will be supplemented by nearly continuous monitoring by the Project Management Consultant.

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) — Substantial

Environmental Risk Rating — Substantial

The environmental risks associated with the Nurek HPP Rehabilitation Project are Substantial. Knowing the project scope, mainly rehabilitation works, potential risks and impacts are predictable, of short duration and reversible with good mitigation measures. Major rehabilitation works are within powerhouse (replacement of turbines), switch-yard (auto-transformers) and within reservoir. Between 50-60 workers will be working with very heavy machinery at any given point in time within confined space and will be exposed to health and safety issues. These workers will also be exposed to asbestos and other hazardous waste present in the existing infrastructure including equipment. The Phase-1 activities include rehabilitation of three out of nine generating units, spillway gates, spillway tunnels, power intake gates and other hydromechanical equipment, and replacement of six auto-transformers at Nurek switchyard. Some of the works are to take place within the reservoir and pose environmental and OHS risks. Rehabilitation works will be implemented during the season with low water flows. Significant OHS issues are expected due to the nature of some of the activities like; working in deep waters and at high altitude. In addition, any industrial waste leakage from the material present at the work site could enter into reservoir or river water and contaminate it. Exposure to extended Electromagnetic Field (EMF), chances of electrocution, excessive noise levels, traffic disruption and road safety are perceived risks during the construction/rehabilitation works.

Barki Tojik (BT) remains the main implementing agency and its capacity in addressing the environmental risks is moderate. Strong E&S implementation support through consulting services (PMC) and reputable international contractors with good H&S records are likely to alleviate BT's key capacity constraints.

Social Risk Rating Substantial

The Social Risk Rating is revised from the PCN stage to Substantial considering the scale of the Project and potential OHS risks (including use of heavy equipment/machines, work in confined areas/height, exposure to asbestos). Works will be conducted within a confined area which will have minimal or no impact on communities. The risks from various tasks will be evaluated by the contractor and procedures will be developed and included in the Occupational Safety and Health Plan (for construction) and the Nurek Safety and Health Plan (for operations) to minimize the risks. The only impacts on reservoir or downstream water quality would be from spills of hazardous materials or the release of sanitary wastes. The risk of such potential impacts is considered to be minor if hazardous materials and wastes are managed properly and sanitary water is controlled and treated. Traffic risk will be controlled by the contractors' preparation and implementation of a Traffic Management Plan. As noted, this will include requirements that routes through Nurek City be planned to avoid sensitive areas such as hospitals and schools, and that traffic avoid rush hours. With these controls, the potential impacts are considered to be minor. The project will have a generally positive effect on the economy of Nurek City and Tajikistan including:

- Increased employment opportunities for local workers, including both skilled and unskilled workers.
- Development of economic opportunities, such as rooming houses, restaurants and food suppliers, fuel suppliers, and providers of other goods needed for everyday life.
- Increased electricity production. Rehabilitation will return all turbines and generators to full efficiency, so electricity generation could increase by 10 percent or more during periods of high flows in summer.

Risks from Labor Influx are expected to be minor (see ESS2). All workers will be expected to sign a Workers Code of Conduct which will address sexual harassment and Gender Based Violence. Management, both contractor supervisors and implementing agencies, will be expected to monitor worker behavior to ensure appropriate code of behaviors are followed. The ESIA has identified potential risks, impacts, and mitigation measures to reduce severity of risks including community health and safety as well as worker safety. Throughout implementation of Phase 1, no concerns have been raised by stakeholders on existing facility. The Grievance Redress Mechanism, established at national level - BT, and local level - power plant, has not received any grievances and has instead been used by stakeholders as a way in which to ask questions and access additional information.

The project will have overall positive impacts with continued employment as well as positive impact being lower energy costs. Works within powerplant will be confined to existing structures while bridge rehabilitation, which is primarily used to access Nurek plant facilities, will be rehabilitated in a way that allows continued use. Safety measures will be put in place to protect both workers and communities throughout project implementation with additional measures to ensure safety during operation.

The project area, in the Khatlon region, is predominately rural and dependent upon subsistence agriculture. In 2009, Khatlon was classified as the poorest region in Tajikistan with a high, unofficial, unemployment rate. The region has the highest rates of under-nutrition and the largest number of people living below the poverty line. Many able-bodied workers, primarily men, migrate to Russia or Dushanbe for employment. Vulnerable households, other than the very poor, may be found with women headed households or elderly. However, the women-headed households are often

the result of worker migration and would receive remittances while elderly citizens live with family members and therefore not considered vulnerable.

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

The borrower prepared an ESIA report for the project under the old safeguard policies. This report has been revised and updated to account for the risks and impacts under the 10 Environmental and Social Standards. The potential environmental risks and impacts identified under the ESIA for the Phase-1 remain valid for the proposed Phase-2 as the scope of Phase-2 is a scale-up of rehabilitation activities. Rehabilitation of Nurek bridge has been included in the proposed Phase-2. The proposed works for the bridge, at the existing location, include replacement and repair of abutments and piers; repair of reinforced concrete end span; slope protection of embankments; replacement of concrete deck and superstructure; and replacement of the entire steel substructure. Since no new construction is involved for the proposed bridge rehabilitation works, a stand-alone ESMP for the bridge has been prepared to assess and mitigate the environmental and social risks and impacts.

Major environmental impacts as identified in the ESIA for the project are:

(i) Asbestos is present in equipment that is to be refurbished. Removal of and working in closed environment where Asbestos is present represents a major health risk for the workers and other people in the area. There is absence of necessary guidelines and standard operating procedures (SOPs) for hazardous waste management at BT. Current practices for the disposal of some hazardous waste include collection at the designated storage points operated by BT and sold to licensed operators for proper disposal.

(ii) The dismantling, installation and testing of large scale equipment (turbines and auto-transformers) in a limited work space poses health and safety risks (electrocution) for the workers and personnel; and

In addition to the above, potential health and safety risks for workers associated with working in deep waters, road safety, safety of communities, water contamination due to leakage of industrial and construction waste, excessive noise levels, working with and around heavy machinery, and exposure to EMF are some other key impacts and risks identified in the updated ESIA report. The ESMP prepared for Nurek bridge screens environmental risks and impacts related with and during the construction of bridge. These include traffic disruption, excessive noise and dust levels, water contamination and road safety etc.

BT has awarded construction supervision consultancy contract to an international firm (PMC) and major Work contracts are also won by reputable international firms. Contractors have included dedicated HSE staff to implement contractual obligations. Since the Works are an early stage of implementation therefore no serious compliance issues have so far been reported. The environmental risks for the project in the latest ISR have been rated as 'Moderate' and safeguards compliance as 'Moderately Satisfactory'. Based on the fact that both the supervision consultants and contractor are reputable international companies and so far have generally been compliant with the OHS, and environmental mitigation and management, it is expected that the project safeguard performance will remain satisfactory and compliant to the E&S requirements required under the contractual obligations.

Carbon emissions resulting from the project, including the construction phase, will be insignificant and could have no role in future climate change. Carbon emissions avoided as a result of the entire project are 63 million tonnes of CO2-equivalent (tCO2e). For Phase 2 the avoided emission are estimated at about 49 million tCO2e. The estimation of

avoided CO2 was done by estimating the need for substitute power generation capacity that would need to be constructed to replace the supply from Nurek HPP.
Phase-2 ESIA report presents analysis on cumulative impact assessment. The conclusion of the assessment are that no significant adverse cumulative impacts have been identified with regard to the identified Valued Environmental and Social Components for the Nurek HPP Rehabilitation Project. The assessment identified 8 VECs in consultation with stakeholders.
As this is rehabilitation with limited labor influx, the social risk is moderate. Mitigation measures will be put in place to further reduce risks for both communities and workers. Included in the mitigation is that all workers will be required to follow Codes of Conduct which require acceptable behaviors be followed.
The E&S performance of the Recipient has been adequate during implementation of the Phase 1 of the Project. The implementing entity, BT, with the support of the Project Management Consultant (PMC) ensured supervision of the performance of the main contractor hired for rehabilitation of three generating units of the plant covered under Phase 1. Based on the monthly project progress reports from PMC, the contractor has been following good-practice standards during construction and activities were mostly compliant with the requirements of the Nurek ESIA and the ESMP. Those include matters related to OHS. For example, the contractor introduced a procedure for works at the site in early April even prior the guidance from the Bank on civil works procedures under COVID-19. The BT, as an implementing entity, is well prepared to implement the requirements of ESF under Phase 2 considering that it hired an experienced in-house E&S specialist to help with supervision of the activities under the Project. The E&S capacity will be strengthened further considering the need to strengthen the internal Environmental and Social Management Systems consistent with the agreements in the Program Action Plan for Power Utility Financial Recovery PforR supported by the Bank.
The risks would be further mitigated through development of Dam Operation and Maintenance Plan being developed under Phase 1. The Plan will cover the reservoir operation procedure during floods, including sedimentation monitoring/management plan, as well as regular surveillance, instrumentation data analysis/reporting, periodic inspection procedure, etc. The client has already developed and put into operation advanced flood forecasting system.

ESS10 Stakeholder Engagement and Information Disclosure

Stakeholder consultations for the 2017 ESIA were conducted in April 2016 by the Public Organization Kuhiston, on behalf of Barqi Tojik (BT), in accordance with the World Bank (WB) procedures and the requirements of the national regulations for a project of this scale. In Nov. 2017, the LLC Infrasokhtor Mushovir conducted the second round of consultations to obtain feedback on the original ESIA. On Sept. 16, 2019, LLC Infrasokhtor Mushovir conducted a third round of consultations. The objective of these consultations was to inform the wider public and key stakeholders about the progress of the project and its future plans, as well as to incorporate the comments and recommendations received during public consultations into the final ESIA. In addition, the consultation was intended to build the capacity of employees of the Nurek HPP and representatives of the BT Project Implementation Unit (PIU) through training on the procedures and methods for conducting public hearings and meetings for sharing the public information.
Stakeholder consultations, during the scoping for the current ESIA 2020 update report, have been carried out by BT's consultant and a synopsis of the consultations is provided in a SEP, along with the summary reports of previous consultations. Finally, project details, including the scope and focus of the Phase 1, were also shared with the riparian governments as required by the WB's OP 7.50. Specifically, at the request of the GoT, the WB sent a letter, dated

Dec. 12, 2016, signed by the Country Director for Central Asia to representatives of countries in the Amu Darya River basin. The letter contained a description of the project development objective, project components, estimated cost of the project, and key conclusions from the ESIA regarding the downstream water releases. Additionally, following the request from the GoT, the WB also sent another notification to riparians on April 29, 2020 to inform about the details of the Phase 2 of the project.

Stakeholder identification - listed below- remained consistent for all Nurek HPP Rehabilitation Project consultations (April 2010, Nov. 2017, Sept. 2019, and Feb.y 2020). Stakeholders were identified at the National, Regional and Local levels. Each stakeholder was categorized based on: (i) their level of interest in the project (i.e., the extent the project would impact their lives); (ii) their ability to influence the project (positively or negatively); and (iii) the extent to which project managers needed to engage each group of stakeholders, i.e., from monitoring their interest and keeping them informed to managing their interests closely and ensuring that they are satisfied with project management's responses. The purpose of this classification is to allow outreach and consultation to be tailored to the interest and influence. Participation in each of the consultations was relatively consistent: the participants represented different ethnic groups, including Tajik, Uzbek, Russians, and Turkmen. Hence, the languages used for the consultations were Russian and Tojik. The age composition of the participants also varied, including elderly and youth. Representatives of the youth committees participating at the events reported they will be circulating the information among their peers during various events and meetings. Participants at all the regional and local level included representatives of the diverse stakeholders, such as heads of the mahalla (communities), heads of women committees (informal and formal), healthcare workers, including Sanitary and Epidemiological Services, environmentalists, heads of educational facilities, representatives of the Housing and Utilities companies, private entrepreneurs, unemployed, disabled persons, road and transport department representatives, farmers, NGOs, employment departments, financial department, Nurek HPP personnel, and eventually representatives of local authorities at district and oblast (region) level, as well as jamoat.

The meetings were also attended by elderly representatives from both Nurek and Dukoni jamoat. Consultations were held in an environment that enabled free and unintimidated exchange of ideas, concerns and recommendations, so everyone had a chance to speak. This was evidenced by the fact that women presented their concerns and shared their recommendations for managing the projects impacts. The national level consultation participants represented NGOs, academia, including the Academy of Science, and universities, donor agencies, Institute of Water Problems, private consulting companies, Assoc. of Hunters, Committee on Env. Protection and the Int'l Committee on Water Coordination.

Following disclosure of ESIA and the SEP, BT held additional consultations, again to convey information on the project and to receive information and concerns from stakeholders, summarized in the final ESIA. BT will continue the same practice of consultations at least annually, with additional consultations if needed to communicate with stakeholders. Consultations will be conducted in such a way as to eliminate the risk of spreading viruses (ie. COVID-19). Consultations will be conducted electronically and via phone, especially targeting any persons or households directly impacted by the project.

A final SEP has been prepared. Stakeholders were identified and consulted including:

Stakeholders at national level:

Min. of Energy and Water Resources

OJSHC Barqi Tojik

Nurek HPP

Committee on Env. Protection

State Investment and State Property Management Committee

Min. of Health and Social Protection of Population
Min. of Labor, Migration and Employment
Min. of Econ. Dev. and Trade
Min. of Ag.
Committee on Emergency Situations
Agency on Land Reclamation and Irrigation
Bilateral and multilateral agencies
TajCnet
Institute of Water Problems, Hydropower Engineering and Ecology under the Academy of Science of Tajikistan
Private Sector
Regional Level Stakeholders:
Tigrovaya Balka Natural Reserve
Community based natural resource management organizations, WUAs, farmers
Local Level Stakeholders:
Communities of Nurek: Nurek City, Dukoni and Puli Sangin jamoats
All relevant local authorities
Local groups: as heads of the mahalla (communities), heads of women committees (informal and formal), healthcare workers, including Sanitary and Epidemiological Services, environmentalists, heads of educational facilities, representatives of the Housing and Utilities companies, private entrepreneurs, unemployed, disabled persons, road and transport department representatives, farmers, NGOs, employment and financial departments, Nurek HPP personnel, and eventually representatives of local authorities at district and oblast (region) level and area jamoats.
Stakeholders identified for project consultations during implementation:
Local population in the Project Area of Influence
NGOs and CBOs
Gov. agencies
Related businesses
Project Employees
Consultations during implementation: Since the 2017 SEP, consultations have been held annually. As project implementation enters Phase 2, additional consultations will be organized at least once a year. Each consultation, as needed, will include a feedback consultation or communication to respond to issues that were not resolved in the consultations. It is expected that groups listed above cover all potentially impacted groups, including anyone who may be considered a vulnerable group. If a vulnerable group is identified, and not included in the existing stakeholder groups listed above, then measures will be put in place to ensure active stakeholder participation.
Phase 1 has an established GRM at both BT, national level, and at power plant site. The GRM has not received complaints and has been used for asking questions.

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

As much as possible, labor will be sourced locally, either from Nurek City or other nearby communities. The project will continue to use current workers already engaged in works and operations.

Current staffing and additional project worker estimates include:

- OSHC "Barqi Tojik's" Project Realization Group employs 52 workers, 17 of them will be directly related with the Project implementation. An International Project Management Consultant supports PRG. The Group currently has staff environmental specialist and will also appoint a consultant environmental, social, and health and safety (ESHS) specialist who will be on-site at least half the time in support of the Project Management Consultant.
- The Project Management Consultant employs 6 full-time employees (3 foreign and 3 Tajik nationals) and 1 part-time (two days per month) ESHS specialist (Tajik national).
- One contractor is currently implementing Phase 1 works and there will be 4 others, all of which may have 1 or more subcontractors. Total employment could reach about 650, including about 450 for Phase 2 works. The main contractors will complete the following project components, the first of which is being completed as Phase 1 and the remainder as part of Phase 2:

- Electromechanical equipment and penstocks phase 1. A total of 202 workers are currently employed for these Phase 1 activities, about 20 percent of which are unskilled and the remainder semi-skilled or skilled. Of the 202, 180 are Tajik nationals and 22 are expatriates; 6 employees are women. Employment will remain approximate the same during Phase 2.
- Geotechnical investigations and dam monitoring. About 50 workers will be employed, about 20 % unskilled.
- Civil works including bridge. About 150 workers will be employed, about 40 % unskilled. Of the workers, about 100 will be involved in bridge rehabilitation.
- Hydromechanical equipment. About 150 workers will be employed, about 20 % unskilled.
- Switchyard. About 100 workers will be employed, about 20 % unskilled. This is being financed by Eurasian Fund for Stabilization and Development (EFSD).

A large influx of outside labor is not expected and therefore the risk posed is low. Power plant workers are already in place and will remain the same, as well as PIU staff which serve primarily an admin function. Primary supply workers are not known at this time, however, it is likely to be aligned with existing Phase-1 contractors. A Labor Management Plan has been prepared and Workers Codes of Conduct (CoC) drafted. The final CoC will be completed in cooperation with contractors once identified and in-country. The ESIA report for the project includes sections on OHS and Community Safety.

In accordance with the ESIA for the Rehabilitation project and ESMP for Nurek bridge, the signed contracts for power plant rehabilitation works procured in Phase 1 of the project included requirements for Health, Safety and Environmental (HSE) plan in line with World Bank Group Environment, Health and Safety (EHS) Guidelines. The additional contracts to be signed under Phase 2 of the project, including those for rehabilitation of the Nurek bridge and other smaller scale civil works for rehabilitations of buildings/structures at Nurek site, would also include such requirements. A specific Worker Health and Safety Plan will also be developed to cover site-specific job hazards, provision of preventive and protective measures for all hazards; information about safe working methods; and road safety measures. The plan will also include procedures on incident investigation and reporting, recording and reporting of non-conformance, emergency preparedness and response procedures and continuous training and awareness to workers. Civil works contracts will incorporate environment and social mitigation measures. Although there is no anticipated risk for discrimination, the ESIA has outlined mitigation measures to address discrimination, especially with regards to gender.

Barqi Tojik will consider labor management policies in its hiring and operation which includes gender non-discrimination policies, codes, and laws. Barqi Tojik will require contractors to establish and achieve realistic goals for

hiring women in a variety of positions. Additionally, there is no expected risk of child or forced labor. Contractors will be required to follow labor laws, as well as WB guidance, which will forbid the use of child or forced labor.
The Task team has shared with BT Bank developed Advisory Notes on COVID-19 pandemic prevention and control at construction sites. Tajikistan has only recently started reporting COVID-19 cases. There has been no reported COVID-19 case from the work sites. As such, no national guidelines have been issued. The project, however, will follow WB guidance with regards to pandemics (currently COVID-19) as well as any national guidelines that may be issued by government authorities.

ESS3 Resource Efficiency and Pollution Prevention and Management

During the rehabilitation process, the main hazardous waste will include large volumes of asbestos that is contained in old equipment and structures and oils contained in turbines or other devices of the powerhouse and substation. BT level regulations and practices for hazardous waste management are not adequate. Specifically, BT does not have any standard procedures to manage asbestos containing material in an environment friendly manner. In addition, there could be spills of fuels, oils, or chemicals that enter the reservoir or the downstream river. Pollutants in industrial wastewater entering into river or reservoir may include acids or bases, soluble organic chemicals, nutrients (phosphorus, nitrogen), heavy metals (e.g. cadmium, chromium, copper, lead, mercury, nickel, zinc), cyanide, toxic organic chemicals, oily materials, petroleum compounds, and volatile materials. Any or all of these materials may be present on site in lubricants and solvents, spent solvents and oily rags, paint and empty paint cans, chemicals and their containers; used lubricating oils, and diesel and other petroleum-based products.
The project would contribute to increased efficiency of water utilization. Specifically, the rehabilitated units would allow to generate on average 2.74% more electricity by using the same amount of water.
Carbon emissions resulting from the project, including the construction phase, will be insignificant and could have no role in future climate change. Carbon emissions avoided as a result of the entire project are 63 million tonnes of CO2-equivalent (tCO2e). For Phase 2 the avoided emission are estimated at about 49 million tCO2e. The estimation of avoided CO2 was done by estimating the need for substitute power generation capacity that would need to be constructed to replace the supply from Nurek HPP.

ESS4 Community Health and Safety

Rehabilitation works are associated with exposure risks to asbestos containing material, hazardous waste, dust/noise, soil disturbances, temporary road blockades, traffic management, waste disposal, labor influx and associated disturbance to local communities and workers' camps management. Addressing these issues demands detailed mapping of the communities likely to be affected and an assessment of the impacts thereof. In particular, the ESIA and ESMP evaluate and put in place a mechanism to manage potential hazardous waste risks, health and safety risks when working in deep waters, road safety risks, and risks to workers, nearby communities and other road users. The ESIA has been updated to include the assessment of the potential scale and risk of the Phase 2 due to; natural hazards associated with earthquakes, landslides, and avalanches; and labor influx on safety of local communities, availability of basic needs and services. The ESMP prepared for the Nurek bridge rehabilitation works indicates that the design of the rehabilitation works will ensure principles of universal access; that the bridge is safe and accessible for all users including children, elderly and persons with disabilities.

A significant portion of the rehabilitation project is intended to improve dam safety. The specific improvements to be undertaken will depend on the results of ongoing and planned studies and could include structural improvement measures like rehabilitation of spillway tunnels and installation of flood forecasting/warning system. The independent panel of experts comprising of dam safety specialist, geologist, and an electro-mechanical expert is in place on matters related to dam safety, its appurtenant structures, the catchment area, the area surrounding the reservoir and downstream areas, and other important matters. The panel works on stand-by to guide and advice BT on any issues and are engaged almost constantly. These actions will significantly improve dam safety and its operation. Phase 2 will not have additional security risks. As this is a dam and a power plant, security measures were put in place, and the area secured, prior to WB's involvement in Phase 1 and will remain in place. Persons entering the Nurek HPP site are require to have authorized clearance which is checked at entry and again once inside the main entrance at a secondary check point. The social risks from hiring of any new security personnel that may need to be hired by Nurek HPP or the contractor for rehabilitation of generating units would be mitigated through specific rules, which include the following: no armed private security; (b) contractor/subcontractors and guards checked for licenses, past abuses; and (c) guards trained in appropriated use of force. The Bridge rehabilitation contractor may involve security personnel during rehabilitation works for protection of camps, storage areas, equipment, and property. To mitigate the social risks associated with use of security personnel, the contractor for bridge rehabilitation and its subcontractors would ensure they establish rules for selection and use of such personnel consistent with the rules described above for security personnel for Nurek HPP.

The risk of gender-based violence (GBV) under this project is assessed to be low given the size of Nurek City and the relatively small number of workers from outside, and because there have been no incidents during Phase 1 of the Project. Nevertheless, a number of mitigation measures will be taken to prevent risks due to GBV or sexual harassment, such as sensitization for project employees and communities and the adoption and monitoring of Codes of Conduct for all project workers. This should reduce the potential impact even further.

As part of the mitigation of risks on community safety, the Recipient will prepare an Emergency Preparedness Plan (EPP) covering the entire Vakhsh cascade of HPPs where Nurek HPP with 10 km3 and Rogun HPP (upstream of Nurek) with bigger reservoir (about 14 km3) are located. The EPP will be based on a dam break analysis, including failure mechanism (breach geometry, duration, etc.), downstream topographic survey, and flooding simulation. It will cover risk categorization, roles/responsibilities of key entities, notification/ warning procedures, etc.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

This project is a rehabilitation. The rehabilitation of generators will be within existing structures. The rehabilitation of bridge will require temporary use of land, but land use will entail un-occupied, un-used land within right-of-way of existing bridge. There will be no changes in downstream livelihood activities and therefore, economic displacement is not expected. Bridge rehabilitation will not restrict the movement of people who utilize the bridge, which is primarily used to access Nurek plant facilities, and rarely used by the general public.

In order to ensure access of community and Nurek HPP staff (to some facilities of the power plant), the bridge rehabilitation is planned to be carried in a way that the bridge can always be partially/fully used for traffic and pedestrians with some limitations on weight of vehicles (primarily heavy-weight vehicles).

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

Downstream of the Nurek HPP, the floodplain of the Vakhsh River and riparian vegetation are particularly important. The ecosystems of the Tigrovaya Balka floodplain, near the border with Afghanistan, depend on a meandering river and its dynamics. Both amphibian species and five reptile species can be found in the overall floodplain area. The Vipera lebetina (Blunt-nosed viper) is categorized as an endangered species by IUCN. Just nine species of mammals have been identified for the floodplain. Lutra seistanica (Eurasian otter) is one of the key species in the floodplain habitat and is categorized by IUCN as near threatened. However, its presence in the floodplains downstream of Nurek HPP has not been confirmed. Forty-four bird species are found in the floodplain, 26 of them nest in the floodplain. Eighteen species of birds, mainly water birds (ducks, goose, little egret, grey heron etc.), can be considered as migratory species for spring or autumn, as stated in the ESIA report. The Phase 1 or Phase 2 of the project do not alter the flow regime and therefore do not have any direct impact on the biodiversity downstream in the floodplain area or the ecosystems of the Tigrovaya Balka floodplain.
Any accidental spill of sanitary waste from the construction site into the river will have localized impact, and necessary mitigation measures like sanitary waste management plan will be prepared and got approved from the Engineer. BT and supervision engineer will ensure adequate implementation of sanitary waste management plan. Immediately downstream of the dam (the construction site), there is no fish or other aquatic life.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

ESS7 based on current information is not relevant.

ESS8 Cultural Heritage

This project is rehabilitation and will not impact outside of current footprint and right-of-way that does not contain cultural heritage.

ESS9 Financial Intermediaries

The project does not involve any FIs as defined in the Standard.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways Yes

OP 7.50 is applicable to the project since the Nurek dam is located on the Vakhsh River in western Tajikistan. The Vakhsh River is one of the main tributaries of the Amu Darya River, which is considered an “international waterway” for purposes of the Policy. The other riparian states to the Amu Darya are Afghanistan, Uzbekistan and Turkmenistan, all three being downstream riparians.

The policy applies, inter alia, to hydroelectric projects that involve the use or potential pollution of international waterways. Therefore, at the request of the Republic of Tajikistan, the Bank sent a notification letter (on April 29, 2020) to riparians informing about the ongoing Phase 1 of the Project, the planned Phase 2 of the Project and its components. No responses were received by the Bank from the concerned riparian states.

OP 7.60 Projects in Disputed Areas	No

III. BORROWER'S ENVIRONMENTAL AND SOCIAL COMMITMENT PLAN (ESCP)

DELIVERABLES against MEASURES AND ACTIONs IDENTIFIED	TIMELINE
ESS 1 Assessment and Management of Environmental and Social Risks and Impacts	
ORGANIZATIONAL STRUCTURE: Maintain Environmental and Social (E&S) staff/consultants with clear accountabilities to implement all commitments stated in the project ESIA, ESMP, SEP, and LMP satisfactory to the Bank.	12/2030
Ensure the Project Management Consultant (PMC) has at least one full-time specialist responsible for supervising contractor environmental, social, and health and safety performance. Specialist must have training and expertise in occupational health and safety. (Note: specialist may be employed by Barqi Tojik and seconded to PMC, or employed by PMC.)	12/2021
MANAGEMENT OF CONTRACTORS: Ensure that the existing civil works contractor for rehabilitation of nine generating units updates its existing C-ESMP, including Materials and Waste Management Plan, Hazardous Waste Management Plan, Occupational and Safety Plan and the Labor Management Procedure (LMP). The works for rehabilitation of six units under the Project can commence only after the update was completed to the satisfaction of the Bank.	08/2022
Management of Contractors Ensure that the civil works contractors for rehabilitation of Nurek bridge and buildings at Nurek HPP site develop C-ESMP, including a detailed Materials and Waste Management Plan, hazardous waste management plan, Occupational Health and Safety (OHS) Plan,Traffic Management Plan, and Contractor's Labor Management Procedure (C-LMP) to the satisfaction of the Bank.	12/2020
Management of Contractors Ensure that the civil works contractors for rehabilitation of Nurek bridge and buildings at Nurek HPP site develop C-ESMP, including a detailed Materials and Waste Management Plan, hazardous waste management plan, Occupational Health and Safety (OHS) Plan,Traffic Management Plan, and Contractor's Labor Management Procedure (C-LMP) to the satisfaction of the Bank.	12/2021
MANAGEMENT TOOLS AND INSTRUMENTS: Include into bidding documents for civil works requirement for bidders to submit their Management Strategies and Implementation Plans (MSIP) as required by Nurek HPP ESIA and Nurek bridge ESMP. Include environmental, social, health and safety (ESHS) specialist on proposal evaluation team and include ESHS past performance and information in proposal as evaluation factors for award.	12/2020

ESS 10 Stakeholder Engagement and Information Disclosure	
SEP IMPLEMENTATION Implement the SEP. Announce and hold consultation meetings with local communities as per SEP. Require bridge contractor/Project Management Consultant to consult with community leaders to communicate schedule of bridge closure.	12/2030
ESS 2 Labor and Working Conditions	
LABOR MANAGEMENT PROCEDURES: Submit to the Bank's approval the Labor Management Procedure (C-LMP) of the existing civil works contractor for rehabilitation of nine generating units, including six under the Project.	12/2021
The C-LMP shall cover all nine generating units, including the three units under Phase 1.	12/2021
No activities requiring LMP will be conducted in relation to rehabilitation of six units under the Project (Phase 2) until the updated LMP is approved. Until approval of updated LMP, the rehabilitation of three units under Phase 1 will be carried out	12/2021
GRIEVANCE MECHANISM FOR PROJECT WORKERS: Implement the workers' grievance redress mechanism that is part of Barqi Tojik's Labor Management Procedure.	11/2020
Ensure that the existing contractor for rehabilitation of nine units under the Project (Phase 2) updates the GRM for its employees as per updated C-LMP, or implements the Barqi Tojik GRM, and that it requires the same of its subcontractors.	12/2021
Ensure that the contractors for rehabilitation of Nurek bridge and buildings at Nurek HPP site develop and implement their GRM for their employees as per C-LMP, or implement the Barqi Tojik GRM, and that contractors require the same of their subcont.	12/2021
OHS MEASURES: Require the existing contractor for rehabilitation of nine units to update and submit for PMC review and approval OHS Plan that covers all nine units and meets applicable OHS requirements of the updated Nurek HPP ESIA. The existing OH.	12/2021
Require contractors for rehabilitation of Nurke bridge and buildings at Nurek HPP site to develop and submit for Project Management Consultant's review and approval OHS Plan that meets applicable occupational, health and safety (OHS) requirements.	12/2021
Require Nurek HPP to update OHS Plan to include provisions for working alongside civil works contractors during the construction period, and monitoring implementation of the Plan.	12/2020

PROJECT WORKERS TRAINING: Require the contractors to deliver training of Contract Workers to raise awareness about their contractual rights and obligations, the Code of Conduct, and how to do their jobs safely.	12/2021
ESS 3 Resource Efficiency and Pollution Prevention and Management	
MANAGEMENT OF WASTE AND HAZARDOUS MATERIALS: Require Barqi Tojik to review and approve the Materials and Hazardous Waste Management Plans of the contractors for rehabilitation of Nurek bridge and other buildings at Nurek HPP site and enforce comp.	12/2021
Enforce compliance of the existing contractor for rehabilitation of nine generating units with its Materials and Hazardous Waste Management Plans, including the Asbestos Management Plan that was approved in Phase 1.	12/2030
ESS 4 Community Health and Safety	
TRAFFIC AND ROAD SAFETY: Require the bridge rehabilitation contractor to submit for Barqi Tojik review and approval a Traffic Management Plan and to enforce compliance. Plan by bridge contractor to include requirements for notifying public of closur	12/2020
COMMUNITY HEALTH AND SAFETY: Require training of all workers in Code of Conduct requirements concerning interactions with communities, consult with community leaders as needed to identify issues associated with worker interactions with community mem	12/2030
Ensure Nurek bridge construction does not interfere with water line that crosses the bridge. If temporary interruption is necessary, ensure Nurek authorities are notified in advance	12/2030
DAM SAFETY: Adoption of Emergency Preparedness Plan (EPP), Dam Operation and Maintenance (O&M) Plan, and the Instrumentation Plan. Installation of dam safety monitoring equipment and completion of repair works to improve dam safety.	12/2025
Maintaining a dam safety panel as may be needed by the Project. Implementation of EPP and O&M Plan.	12/2030
SECURITY PERSONNEL:	12/2020

The hiring and use of any security personnel by Nurek HPP or any other contractor for rehabilitation of Nurek HPP would need to be compliant with the requirements of ESS4.	
Ensure the Nurek bridge rehabilitation contractor develops and implements measures and actions to assess and manage risks to community and to workers from the use of security personnel.	12/2030
Those should include, but not limited to application of the principles of proportionality, the law, verification of contracted workers records to ensure they are not implicated in past abuses, investigate incidents, report unlawful acts to authori.	12/2030
ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	
ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	
Sanitary Waste Management Plan BT and its PMC to review the existing Sanitary Waste Management Plan of the contractor for rehabilitation of nine generating units and require updates if necessary.	12/2021
Ensure the contractors for rehabilitation of Nurek bridge and the buildings at Nurek HPP site prepare sanitary waste management plan to prevent leakage of sanitary waste from the work sites into river waters.	12/2021
Supervise implementation of the Sanitary Waste Management Plan with support from PMC.	12/2030
ESS 7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	
ESS 8 Cultural Heritage	
CHANCE FINDS: Chance find procedures will be part of all civil contracts involving any works under the project.	12/2030
ESS 9 Financial Intermediaries	

B.3. Reliance on Borrower's policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework? No

Areas where "Use of Borrower Framework" is being considered:

Given the environment and social risk profile of the project, Borrower's E&S Framework will not be used for the Project in whole or for any of its parts.

IV. CONTACT POINTS

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Borrower: Ministry of Energy and Water Resources

Implementing Agency(ies)

Implementing Agency: Barqi Tojik

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VI. APPROVAL

Task Team Leader(s):	Artur Kochnakyan
Practice Manager (ENR/Social)	Kseniya Lvovsky Cleared on 23-May-2020 at 16:41:25 EDT
Safeguards Advisor ESSA	Nina Chee (SAESSA) Concurred on 24-May-2020 at 11:39:32 EDT