



Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 10/01/2024 | Report No: ESRSA03723



I. BASIC INFORMATION

A. Basic Operation Data

Operation ID	Product	Operation Acronym	Approval Fiscal Year
P181029	Investment Project Financing (IPF)	Rogun HPP 1	2025
Operation Name	Sustainable Financing for Rogun Hydropower Project		
Country/Region Code	Beneficiary country/countries (borrower, recipient)	Region	Practice Area (Lead)
Tajikistan	Tajikistan	EUROPE AND CENTRAL ASIA	Energy & Extractives
Borrower(s)	Implementing Agency(ies)	Estimated Appraisal Date	Estimated Board Date
Republic of Tajikistan	Directorate of the Flooding Zone, Rogun HPP Open Joint Stock Company, Rogun Project Management Group for the Power Plant Construction under the President of the Republic	01-Oct-2024	17-Dec-2024
Estimated Decision Review Date	Total Project Cost		
14-Feb-2024	6,290,000,000.00		

Public Disclosure

Proposed Development Objective

The project development objective is to increase supply of clean, affordable and climate resilient hydroelectricity for consumers in Tajikistan and Central Asia region.

B. Is the operation 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 Activities

The Rogun Hydropower Plant Project (HPP) is an export-oriented green energy project, which once completed, will bring significant domestic and regional welfare benefits, contribute to the decarbonization of regional power grids in Central Asia (CA) and potentially transform the Tajik economy. The proposed US\$650 million Rogun Hydropower Program under Multi-Phase Approach (MPA) (with Phase 1 for US\$350 million) would support the completion of the Rogun HPP, which



has been under construction since 2017, and crowd-in grants and concessional funds from ten International Financial Institutions (IFIs). With a planned installed generation capacity of 3,780 megawatt (MW), the Rogun HPP epitomizes the World Bank efforts to help address climate change at scale. About 70 percent of the energy generated is expected to be exported, thus helping to replace fossil-fired generation in Kazakhstan and Uzbekistan, whose economies have a high fossil fuel intensity, while increasing the resilience of water resources regionally. This financing package would also contribute to a sustainable macro-economic framework, which will help free up space for expenditures in the social and other priority sectors, and to significant spillovers on energy and structural reforms in the broader economy. The Rogun HPP is a transformative clean and green domestic and export-oriented energy project that aims to become the main pillar of Tajikistan's electricity system and an anchor for a regional electricity market in Central Asia. The project will ensure reliable electricity supply to meet growing domestic demand at an affordable cost, help address electricity shortages, and enhance energy security in Tajikistan. At the regional level, the Rogun HPP will play a crucial role in underpinning the development of a regional electricity market and providing reserve and balancing services conducive to the integration of intermittent solar photovoltaic (PV) and wind capacity in Central Asia. The project will also improve the resilience of the entire Vakhsh cascade of HPPs, accounting for 95 percent of total hydro generation in Tajikistan, through mitigation of flooding risks. Additionally, the large reservoir of Rogun HPP will provide significant economic benefits to the region in terms of energy supply, flood mitigation, and enhanced reliability of water supply for irrigation and domestic uses. The project will also finance priority social needs and augment the social safety nets in the country, contributing to accelerated economic growth, strengthening economic and social resilience, and promoting the financial viability of the energy sector. The Rogun HPP is expected to contribute to the development of a regional electricity market through a complementary program under MPA on Regional Electricity, Market, Integration and Trade (REMIT). The purpose of REMIT is to establish market and commercial principles in regional cooperation in Central Asia, including piloting short-term trading and supporting the gradual evolution of the pilot market to a modern market structure with a wide range of market products, such as day-ahead, intraday, balancing services, over a 2024-2035 timeframe. The Rogun project will also support the Government to achieve its development vision of accelerating economic growth, strengthening economic and social resilience to shocks, and promoting the financial viability of the energy sector. The Rogun HPP has benefited from a multi-donor platform, and the Government has committed to reforms to unleash the development potential of Tajikistan to help promote a more competitive and private sector-driven economy, as well as an ongoing Program-for-Results operation to improve the financial viability of the electricity sector. The Program is structured in two phases. The phasing takes into account macro-fiscal sustainability considerations. (i) Phase 1 includes achieving by 2029: (i) dam height of 1,185 masl; and (ii) installed capacity of 1,660 MW (400 MW for units 5/6, 1,260 MW for Units 3/4). (ii) Phase 2 includes achieving by 2035: (i) dam height of 1,300 masl.; and (ii) installed capacity of 3,780 MW (630 MW in all six Units). The Project (i.e., Phase 1 of the Program) will have four main components as described below. Component 1: Construction activities. IDA financing will support (i) the design, supply, and installation of electro-mechanical equipment for generating units 3 and 4 including turbines, generators, frequency governor, excitation system, electrical systems, unit-related monitoring system, cooling water system; compressed air system for the governor, fire detection and suppression system; and (ii) design, supply and installation of replacement runners for Units 5 & 6 and other turbine rehabilitation works and control system integration; (iii) discharging structures on the right bank including the construction of diversion tunnels and spillways, carrying out investigations for the atypical zone, excavation and lining of grouting galleries, and grouting of the right abutment. Other activities include completion of the main dam, completion of the left bank structures, and construction of a control room. Component 2: Project management and supervision support. This component will support Rogun Open Joint Stock Company (OJSC) and Rogun Project Management Group (PMG) with the management and supervision of the Project and would cover the supervision of all main large construction contracts and other smaller early works contracts. There are four sub-



components including the Project Management Consultant (PMC), Employer costs, implementation support, and the Lenders Technical Advisor (LTA). Component 3: Implementation of Resettlement Action Plan (RAP) and Livelihood Restoration Plan (LRP). This component will finance the implementation, evaluation and monitoring of RAP and LRP requirements, including costs related to: (i) stipends for apprentices; (ii) payment of compensation and other assistance to project affected people. This component will also finance roads on the left bank necessary to ensure villages maintain connectivity after reservoir filling. Component 4: Hydro meteorological activities to finance activities in two sub-components: (a) Purchase and installation of hydro meteorological instrumentation and consultancy services required for the Project, including: (i) key monitoring investments in the upper Vakhsh river basin to support the operation of Rogun HPP and mitigate future climate risks, such as construction and equipment of in-situ stations; (ii) development of an operational monitoring and forecasting system integrating in-situ observations with satellite monitoring of seasonal snow cover extent and other variables; and (iii) modernization of selected hydroposts located in the Vakhsh river basin including sensors and telemetry equipment; and (b) Technical assistance to support the Basin Water Organization (BWO) “Amudarya” in Tajikistan reporting both to the Ministry of Energy and Water Resources and the headquarters of BWO Amudarya in Urgench, Uzbekistan and fulfill the mandated tasks of the Intestate Commission on Water Coordination for information management and water accounting. Real-time water level data transmitted continuously from the hydroposts will be integrated into the national Water Information System at Ministry of Energy and Water Resources.

D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings

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

Tajikistan is a landlocked country in southeast Central Asia. The Amu Darya, Central Asia’s largest river, is formed by the confluence of the Panj (40%) and Vakhsh (26%). Flow pattern is highly seasonal, high in summer due to snow and glacier melt and low in winter. The Rogun Hydropower Project (HPP) is located on the Vakhsh river, 70 km upstream of the Nurek HPP, which has operated since the 1980s. The site is about 110 km northeast of Dushanbe. The area of the Rogun HPP is in the administrative region called “Districts of Republican Subordination” and is predominately rural, depending on subsistence agriculture. The poverty rate was 13 percent in Tajikistan in 2022 and it is typically higher in the mountainous regions.

Rogun HPP was intended to be the furthest upstream of a series of HPPs to provide regional irrigation and hydropower that benefits all of Central Asia. The Vakhsh is characterized by a high sediment load due to intense erosion in its catchment and water quality characterized by high salinity levels. Poor water quality has influenced the quality of fish habitats and, according to the 2014 Rogun HPP Environmental and Social Impact Assessment (ESIA), no long-range fish migration takes place.

Rogun Dam, which is designed to be 335 m high, will be the highest rock-filled dam in the world. It will be the largest HPP in Central Asia, with a 3,780 MW generation capacity and average annual generation of about 14,400 gigawatt hour. Rogun dam is expected to have a useful life of 115 years, and, by intercepting sediment, will also extend the life of Nurek HPP. Rogun will entail permanent inundation of a reservoir with gross storage of 13.3 cu km with the reservoir surface area of about 110 sq km.



Tajikistan has reiterated that Rogun HPP operation will be consistent with existing regional water allocation arrangements concluded among Central Asian countries. The Interstate Coordinating Water Commission meets twice annually to set surface water withdrawal quotas, taking into account the main river’s water flow prognosis for the October–March and April–September seasons. Once the Rogun dam reaches the full supply level, it will become the regulating HPP for the entire Vakhsh cascade. It will also provide flood protection against the Probable Maximum Flood (the estimated daily Probable Maximum Flood (PMF) is 7,770 cubic meters per second (m³/s), with an instantaneous peak PMF of 8,160 m³/s) to the entire downstream Vakhsh cascade, which is designed for a lower extreme flood. The Rogun reservoir is expected to be filled by taking into account the water withdrawal principles under the existing water-sharing arrangements.

D.2 Overview of Borrower’s Institutional Capacity for Managing Environmental and Social Risks and Impacts

Tajikistan established the Rogun Open Joint Stock Company (OJSC) to construct, own and operate the Rogun HPP and the Projects Management Group (PMG) for Energy Facilities Construction under the President of the Republic of Tajikistan. Rogun PMG is also responsible for and supervising environmental and social compliance and performance of all contractors and sub-contractors engaged in the construction of Rogun HPP. The PMG is being supported by the State Enterprise Directorate of the Flooding Zone of the Rogun HPP (DFZ), which is responsible for implementation of the resettlement activities under the Project.

Under the ongoing Technical Assistance for Financing Framework for Rogun HPP (P178819), Rogun PMG is undertaking an update of the environmental and social instruments of the Rogun HPP, ensuring compliance with national environmental and social legislation, the World Bank’s ESF, and relevant environmental and social requirements of other potential financiers.

The ESIA and Environmental and Social Management Plan (ESMP) for the Rogun HPP, in line with the then applicable Safeguards Policies, was prepared with World Bank financing between 2011 and 2014. Following the disclosure and Tajikistan’s approval of the ESIA, the Rogun OJSC committed to implementing the mitigation measures specified in the ESMP and to meeting international environmental and social standards during construction and operation. This included appointment of contractors to continue construction of the dam, tunnels and underground works, and associated facilities. Three Engineering, Procurement, and Construction (EPC) contractors have been appointed for electromechanical works and for the dam and tunneling (with one EPC contractor for some tunneling works yet to be appointed). A number of non-EPC contractors to prepare the site for major works and support ongoing operation of the partially completed HPP have also been appointed.

In 2020, the World Bank completed an audit of the resettlement program and observed the site at the time of public consultations on the ESIA. In 2021, the World Bank reviewed the ongoing construction to evaluate the adequacy of the mitigation measures in the ESMP to reduce the potential impacts to acceptable levels and comply with the ESF, and also to evaluate the extent to which Rogun OJSC and its contractors were implementing the requirements of the ESMP. The updated draft ESIA and ESMP were disclosed on December 22, 2023 in-country (energyprojects.tj) and at the World Bank’s external website. The final ESIA/ESMP will be disclosed by the Effective Date of the project. In addition, several environmental management plans and the second Resettlement Action Plan/Livelihood Restoration Plan (RAP 2/LRP 2) will also be finalized and disclosed by the Effective Date.



In 2021, a site visit to assess the environmental and occupational health and safety performance of the contractors on site was conducted. The site visit revealed that ESHS performance for Lot 2 was very good, especially for the country and region, but that the other lots would need substantial improvement, as would supervision of their activities. The contracts for all the lots are being amended to ensure ESF requirements for all lots are reflected. In addition, the ESCP stipulates that its relevant aspects, including, inter alia, the relevant E&S instruments, the Labor Management Procedures, and code of conduct, be incorporated into the ESHS specifications of the procurement documents and contracts with contractors and supervising firms. Currently, a consulting firm (Tractebel) is in place to support the project implementation. An EOI has been launched to hire the dedicated international Project Management Consultant (PMC), which is expected to be in no later than November 30, 2024 or six months after the Effective Date, whichever comes first.

The Rogun OJSC’s and PMG’s capacity for delivering the Rogun HPP Project has been strengthened. Specifically, the team of the existing PMG has been expanded to include experienced environmental, social, and Occupational Health and Safety (OHS) specialists to allow for improved supervision of E&S performance of the Rogun HPP construction works. Moreover, Rogun PMG has hired international and local environmental specialists, including an international OHS specialist to coordinate with PMC and ensure timely resolution of all issues. The Directorate of the Flooding Zone of the Rogun HPP (DFZ), which is overseeing the resettlement, has also strengthened its capacity to handle the current second phase of resettlement , which is scheduled to be completed in 2025, but will likely be concluded in 2026. At present, the Director and Assistant Director are overseeing the resettlement process, along with six resettlement specialists; they plan to hire additional resettlement, ESHS, livelihood and engagement and other specialists to complete the resettlement by 2032.

To further strengthen the overall E&S compliance of the Rogun HPP Project, Rogun PMG has already engaged Independent Dam Safety and Environmental and Social Panels of Experts (PoEs), based on terms of reference approved by the Bank. They have submitted several reports, providing guidance on managing environmental, social and health and safety risks and impacts.

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

A. Environmental and Social Risk Classification (ESRC)

High

A.1 Environmental Risk Rating

High

The environmental risks are High. The Rogun HPP involves significant civil works related to the completion of the dam; right bank structures and spillways; left bank structures, headrace tunnel, and powerhouse; and access roads and camps. Rogun will entail permanent inundation of a reservoir with gross storage of 13.3 km³ with the reservoir surface area of about 110 km². These are expected to have potentially significant adverse and long term risks and impacts on the biophysical and cultural environment. Risks and impacts due to Associated Facilities, like transmission lines and access roads, also add another set of environmental issues that would need careful planning for appropriate environmental management measures during design and construction as well as operation phases. Occupational and community health and safety risks and impacts are also expected to be adverse and significant considering the large number of workers to be deployed at the site during construction. Risks and impacts of pollution of local air and



water would be significant during construction, given the scale of construction, need to remove cut material from hillside, and significant movement of labour and vehicles. Rogun HPP also requires substantial security measures to protect the large site. The works and inundation of the reservoir area are expected to have potential adverse risks and impacts on both terrestrial and aquatic ecosystems and biodiversity, including potential cumulative and transboundary impacts. The assessment and proposed management of said environmental risks and impacts are addressed in the updated environmental and social instruments, including the ESIA/ESMP. Subsequent, site-wide guidelines and sit-specific management plans will be prepared and will be ready by the project Effective Date. These include the waste management guidelines/templates, traffic management plan, security management plan, and cultural heritage management plan. Furthermore, a Rapid Cumulative Impact Assessment (CIA) was prepared, while a detailed CIA will be completed by the Effective Date of the project. Furthermore, one month after the signature of the loan agreement, a consultant will be hired based on terms of reference acceptable to the Association to conduct an investigation of all areas used for construction, past and present, to identify legacy wastes and contaminated lands, including asbestos and polychlorinated biphenyl compounds, and propose remedial measures in a written report.

High

A.2 Social Risk Rating

The Technical Assistance for Financing Framework for Rogun Hydropower Project (P178819) is financing the updating and preparation of E&S instruments for the Rogun HPP. Given the complexity of the social risks and impacts to be assessed, the social risk rating is High. Key challenges include: (a) stakeholder and citizen engagement in a project that will have profound socio-economic impacts on project-affected people – including vulnerable groups – due to economic and physical displacement, establishment of new communities, restoration of livelihoods (e.g. agriculture, fisheries, light manufacturing, service occupations, etc.) and opportunities for benefit-sharing; (b) large resettlement with critical requirements to address the impacts of physical and economic displacement. At present, the estimate is over 50,000 people, but it could end up being around 60,000. Approximately 7,400 have been resettled under RAP 1 and the current second phase of resettlement, with another 12,200 in the process of being resettled during the second phase); (c) an effective grievance mechanism for handling a potentially large volume of complaints, with systems for recording complaints and outcomes; (d) labor management challenges, including working terms and conditions, OHS, the establishment of safe and effective work camps and eventual retrenchment; and (e) community health and safety issues, including labor influx, with attendant risks related to social conflict, gender-based violence, sexual exploitation and abuse/sexual harassment, transmission of disease and security issues. Mitigation measures: The management of social risks and impacts is being addressed in the updated environmental and social instruments, namely the ESIA/ESMP, Resettlement and Livelihood Restoration Framework (RLRF), Phase 2 Resettlement Action Plan (RAP 2), Phase 2 Livelihood Restoration Plan (LRP 2), as well as the Labor Management Procedures (LMP), Stakeholder Engagement Plan (SEP), Gender Action Plan, a Cultural Heritage Management Plan and other social plans and studies, as necessary.

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

B.1 Relevance of Environmental and Social Standards

ESS1 - Assessment and Management of Environmental and Social Risks and Impacts

Relevant

Both environmental and social risks are rated High making the overall ES risk rating High. ESS's 1, 2, 3, 4, 5, 6, 8, and 10 are considered relevant and will be applied to identify mitigation measures required for the overall Rogun HPP.

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Key potential risks and impacts to be managed going forward include: lack of E&S requirements in construction contracts; insufficient staffing for E&S supervision; lack of supervision of labor management practices; inadequate management of solid, liquid, and hazardous waste; inadequate reporting on E&S performance, including OHS; a lack of detailed surveys of natural habitats, which might require a biodiversity offset strategy/plan; and, a lack of surveys on tangible and intangible cultural heritage impacts. PMG will recruit additional qualified ESHS staff and resources to support management and supervision of ESHS risks and impacts of the Project. The assessment of cumulative impacts in the updated ESIA will include impacts to both upstream and downstream PAPs, environmental flows, sediment transport and management, ecosystem services, and the potential need for biodiversity offsets (and, if needed, a biodiversity offset strategy). Social risks and impacts would include major land acquisition and resettlement, labor influx, occupational and community health and safety, gender, GBV/SEA/SH, etc. The project has prepared an updated draft ESIA/ESMP, which was disclosed in-country and at the World Bank’s external website on December 22, 2023; the final ESIA/ESMP will be disclosed by the Effective Date of the project. Accompanying management plans for key issues will be prepared and disclosed during project implementation, as indicated in the project’s environmental and social commitment plan (ESCP) and the project environmental and social management plan (ESMP). Associated Facilities are also being constructed to ensure that project infrastructure delivers the services it is designed for. At this stage, these include two under-construction transmission lines to evacuate power from Rogun HPP. The updated draft ESIA/ESMP has identified the Associated Facilities, explaining that the necessary management measures are in line with ESF requirements.

ESS10 - Stakeholder Engagement and Information Disclosure

Relevant

Extensive stakeholder engagement commenced in 2008 for the resettlement process and was carried out for the 2014 ESIA, a process which continues to the present. A SEP has been prepared and consulted upon. Through a thorough review of Project plans, objectives, and potential impacts, stakeholders have been categorized based on direct and indirect effects, considering both environmental and social aspects. Project stakeholders have been categorized into two main groups: (a) Project’s Affected Parties – Individuals and groups, including local communities, who may be affected by the Project due to actual impacts or potential risks to their physical environment, health, safety, cultural practices, well-being or livelihoods, and (b) Other Interested Parties – Persons, groups or organizations with an interest in the Project, which may arise from the location of the Project, its characteristics, impacts, or issues of public interest. The SEP defines in detail the risks and impacts on all parties that may be affected by the Project. It outlines the commitments of the PMG and DFZ relating to stakeholder engagement, consultation, and disclosure for the entire Project, throughout construction, operation and resettlement activities. The SEP also includes measures for citizen engagement and sets out the procedures for the project grievance redress mechanism (GRM). The GRM has been operating in the communities at and near the dam site, as well as at the offices of PMG and DFZ since 2014. In the last year, PMG and DFZ have updated and revised the GRM’s procedures to better align it with good international industry practice. The GRM includes procedures for the receipt, acceptance, investigation, resolution, and closure of operational issues, concerns, problems, or grievances. The GRM process follows a two-tiered process: Tier 1 is the initial process where the grievances are addressed and resolved directly by the Rogun HPP in consultation with the grievant; grievances are moved up to Tier 2 if no mutually satisfactory resolution is found. This second tier involves third parties, where the participants agree on the process, the parties involved, and the remedies available. Participation in the GRM does not prevent or hinder a complainant’s right to other judicial, administrative, civil, or traditional remedies. Grievances related to workers and Contractors are addressed under ESS 2. The final SEP has been disclosed prior to Negotiations, but will continue to be updated as more consultations are undertaken. The

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Project will develop a SEA/SH sensitive grievance mechanism to enable communities to confidentially and anonymously reports sensitive grievances. The requirement for the SEA/SH grievance mechanism will be included in the ESCP. SEA/SH prevention measures are elaborated in the Gender Action Plan.

ESS2 - Labor and Working Conditions

Relevant

The project will involve direct, contracted and primary supply workers. Direct workers include: (i) employees of PMG Rogun and DFZ assigned to work directly on the project; (ii) individual technical consultants engaged to support project implementation. Contracted workers include: (i) workers engaged by the construction contractors and sub-contractors in 4 Lots to construct the Rogun HPP. While the Bank will co-finance works in Lot 1, Lot1A and Lot 3A, the other Lots are also part of the project and hence ESS2 requirements will apply; (ii) workers engaged by firms hired by PMG Rogun to provide various technical, engineering and consulting services. Contracted workers include both Tajik and foreign workers. Primary supply workers include workers of primary supplier firms, who on an ongoing basis, provide goods or materials essential for the core activities of the project. Overview of the current situation: The Rogun HPP involves a large labor force. It is estimated that at its peak there will be a total construction workforce of between 15-20,000 workers. Currently there are approximately 14,735 people working on the Project with 23% sourced from within 50km of the Project. Women currently comprise 5.2% of the workforce for the Rogun HPP, primarily undertaking domestic types of work such as cleaning, preparing food for workers and washing dishes. There are also a small number who work as nurses, engineers, or in administrative roles. Whilst Tajik legislation prohibits women from working in heavy, underground, and hazardous works, the collective agreements may allow for women to work in professions, and some exceptions have been granted. Sexual harassment in the workplace is prohibited by law. Training on gender-based harassment, and strict enforcement of code of conduct will reduce risks, although this still remains relatively high. The labor audit which was carried out in March 2023 revealed that some working conditions (e.g., accommodation) require improvement to meet good international industry practice. These included provision of drinking water, medical facilities for all workers and sanitary facilities. Following discussions with PMG, the Contractors have provided drinking water, medical facilities and sanitary facilities to the relevant workers' camps. New accommodation facilities will be developed which will comply with international standards, and substandard accommodation demolished. These will be in place by end 2024 under the management of PMG. Currently accommodation and food are provided and are not deducted from workers' salaries. The minimum working age is 18 years and the workers have contracts. The risk of child and forced labor has not been identified during the labor audit. Tajikistan has ratified 50 ILO conventions, including 9 fundamental conventions. The Labor Code is to large extent aligned with ESS2 requirements. Key OHS risks include: hazardous work, such as working at heights and in confined spaces, use of heavy machinery, use of hazardous materials, dust, noise, exposure to chemical, fumes, electrocution; fatigue due to long working hours leading to injuries or fatalities; lack of adequate rest period during the week; overtime work and payment for overtime work; lack of workers' awareness on occupational health and safety requirements such as the use of PPE and safe workplace practices; presence of migrant workers and issues related to their terms of employment; labor influx; sexual harassment in the workplace. These risks have been addressed by the measures proposed in the labor management procedures (LMP), which will also be included in the contracts with EPC contractors. Requirements for OHS and workers accommodation will be included in both LMP and ESMP and will include general and sector specific WBG Environmental Health and Safety Guidelines. Labor influx is associated with the migration of foreign workers into the Project area. Currently, the majority of Project workers are from Tajikistan, with expatriates, predominantly from India, Iran and Italy, comprising approximately 5.1% of the workforce. Key risks associated with labor include influx where the increase in construction workers from outside the

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local area bring potential for increased pressure on services, increase in disease (sexually transmitted), decreases in community cohesion and potential conflict. The project is well known and has been under construction for many years. Existing communication routes with local communities are well established and many measures to reduce the impacts of labor influx have been implemented; in cases where there are complaints about labor influx impacts in communities, local labor influx plans will be prepared and consulted upon. A LMP has been adopted by PMG which sets out the measures around working conditions, terms and conditions of employment, conduct, grievance mechanism and other measures to improve working conditions. A grievance mechanism is available to all project workers. The LMP also includes a Code of Conduct workers and mandatory trainings on SEA/SH prevention. The Project has been working on a SEA/SH sensitive grievance mechanism to enable workers to confidentially and anonymously reports sensitive grievances. The requirement for the SEA/SH grievance mechanism is included in the ESCP, and is further elaborated in the Gender Action Plan.

ESS3 - Resource Efficiency and Pollution Prevention and Management

Relevant

The Rogun HPP involves significant civil works and generates large volume of hill cutting waste for disposal. It will also require large volume of resources and construction materials and will generate air and water pollutants during construction. Project sites are also source of pollutant discharges from storage and use of hazardous chemicals and wastes like fuel oils and lubricants. All risks and impacts relevant to ESS 3 were assessed in the updated ESIA/ESMP and relevant measures and plans will be developed accordingly and as stipulated in the ESCP. Specifically, for aspects on resources efficiency and pollution prevention, existing contractors will have to prepare and adopt the requisite plans no later than the Effective Date; while such plans will need to be prepared for new contracts, as part of the preparation of procurement documents and respective contracts. PMG will supervise the Contractors throughout Project implementation.

ESS4 - Community Health and Safety

Relevant

Dam safety is a critical issue for the project. PMG/OJSC has been addressing the required preparation and implementation of the four Dam Safety Plans: (i) plan for construction supervision and quality assurance; (ii) instrumentation plan; (iii) operation and maintenance (O&M) plan; and (iv) emergency preparedness plans (EPPs) as follows: a. It was agreed that a new Project Management Consultant (PMC) will be recruited within three months of project effectiveness for undertaking an integrated construction supervision and quality assurance of the project across components. The Bank has reviewed the TORs, which provides the basis for the detailed CSQAP. The Audit Consultancy of Quality Assurance & Control Systems (December 2023) has also reviewed the current quality assurance mechanism by various entities and found the level of quality assurance varying depending on lots, and recommended an integrated framework for enhanced quality assurance and interface management. It was also agreed that the detailed CSQAP covering all project components is to be prepared by the PMC in coordination with the PMG, OJSC, other relevant entities and the Dam Safety Panel of Experts (DSPoE) by June 2025. b. The Instrumentation Plan has been prepared by the Employer’s Representative (ER) in an integrated manner based on its detailed review of the instrumentation plans under various entities in coordination with the PMG, OJSC, other relevant entities and the DSPoE, which will continue to be upgraded by ER or PMC as additional tendering packages for civil works and equipment are prepared. c. A preliminary O&MP has been shared with the Bank which is sufficient for appraisal, based on which a construction-stage and full-fledged O&MPs will be developed during project implementation in coordination with PMG, OJSC, other relevant entities and the DSPoE. The next construction-stage O&MP will be developed no later than six months prior to any additional filling of the reservoir above 1075 masl and

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will be updated thereafter no later than six months prior to the start of reservoir filling to a new water level. Updates to construction-stage O&MPs will be carried out until the full-fledged O&MP will be developed by December 31, 2030 respectively. d. The construction-stage EPPs have been prepared corresponding to different impoundment levels and will continue to be updated for higher impoundment levels along with relevant dissemination and training. The next construction-stage EPP for 1100 masl is to be finalized and set in place, including stakeholders consultations, testing, and information dissemination by the end of February 2025 before the next high-flow season begins. The full-fledged EPP will be prepared by PMC during implementation in coordination with the PMG, OJSC, other relevant stakeholders and DSPoE by June 2025. The full-fledged EPP covering the Vakhsh cascade is under preparation under the ongoing Nurek HPP rehabilitation project. The reservoir impoundment plan for 2025 will be shared with DSPOE and Bank by the end of November 2024 for review and Rogun OJSC will enter into an agreement with WeBuild on the implementation of the 2025 impoundment plan prior to Effective Date. Additional studies to update the related design parameters are being undertaken for hydrology and climate change, seismicity and sedimentation. The results of the studies' findings and recommendations will be reflected in detailed design during project implementation under the guidance of the DSPoE. To mitigate legacy risks, the ongoing Rogun TA is supporting an audit including an independent assessment of Discharge Tunnels (DT) 1-3. The assessment has reviewed the design and construction quality to confirm their capacity to handle construction floods as per design. Further detailed inspection using a remotely operated vehicle (ROV) is ongoing, as recommended. The 1100 masl EPP will include the thresholds for flood warnings in its emergency response matrix reflecting the inspection results. Additional mitigation measures to be addressed, if required, under the DSPOE guidance. In terms of local community health and safety, most impacts to the residential areas close to the construction compounds for the Project, and roads used to access these compounds. Impacts include increased noise and reduced air quality impacts on the health of residents; reduced safety and security of local families, women, and children from labor influx; and reduced safety from increased road traffic, including construction vehicles, and increased risk of road accidents. Outcomes from focus group discussion and household surveys highlight poor road conditions that put community safety at risk, and potential restricted access to services and facilities from vulnerable groups. A community grievance mechanism has been established and community liaison officers are being hired to ensure issues can be raised and mitigated. Better roads and services from the project will be developed to improve safety conditions for the communities. The project will prepare by the Effective Date a Community Health, Safety Plan to address community health and safety risks. As a significant vital asset in the country, the Rogun dam is being guarded by the Army. The project will prepare a Security Management Plan by the Effective Date to assess, address and mitigate any risks related to security, including the military's activities at the dam site.

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ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Relevant

The Rogun HPP is expected to affect 50,267 (6,788 households) in 69 villages of Rogun City, Nurobod and Rasht districts through physical and economic displacement. This number could rise to about 60,000 people. Under Resettlement Action Plan 1 (RAP 1), 2,697 people were resettled. Under the ongoing second phase of resettlement, around 4,700 people have been resettled and another 12,200 are in the process of being resettled; it is expected that the timeframe for the second phase will be extended to the end of 2026. The remaining number of PAPs (between 30-40,000) PAPs will be resettled between 2026 and 2032 (RAPs 3-5). The project has prepared, disclosed, consulted upon and finalized a Resettlement and Livelihood Restoration Framework (RLRF) consistent with ESS 5, which is an update of the 2014 Resettlement Policy Framework (RPF) that was prepared with technical guidance by the World Bank, in accordance with Operational Policy 4.12 (Involuntary Resettlement). The 2014 RPF guided the development



of RAP 1, which covered resettlement activities from 2009-2017 and which has been fully implemented. A Completion Audit carried out in 2018 to assess the resettlement program under RAP 1 concluded that the resettlement process met the requirements of World Bank’s OP 4.12 (Involuntary Resettlement), but livelihood restoration measures (e.g. reduction of unemployment, skills acquisition and finding all the required land for productive uses) took some time to resolve. Currently the second phase of the resettlement (2018-2025, with the possibility of an extension to 2026) is being implemented by DFZ without the support of the World Bank or other development partners, drawing upon the initial 2014 RPF to guide the resettlement process, as well as RAP 1. An assessment of the second phase of resettlement to date indicates that while project-affected people (PAPs) have been generally satisfied with replacement housing, some of the PAPs have raised concerns about their compensation being sufficient to address recent increases in the prices for labor and materials, timely compensation of land and community amenities (such as access to water supply, electricity, and social services) and full livelihood restoration. Other key issues include the need for: systematic data collection and management; ongoing outreach and stakeholder engagement in the resettlement process; timely compensation after valuation, including for crops and trees; prompt issuance of land use certificates; continuous monitoring of the resettlement process by an external independent entity, with particular attention to vulnerable groups; and, clearly defined institutional arrangements for livelihood restoration. RAP 2, along with the Livelihood Restoration Plan (LRP 2), is in the process of being prepared; they will meet the requirements of ESS 5. Given that resettlement activities are being carried out in a phased manner, spanning nearly two decades, to correspond to inundation levels of the reservoir as well as the magnitude of people affected by displacement, a framework approach to identify and mitigate adverse impacts on project affected people was considered appropriate. The RLRf is designed to facilitate the implementation of multiple-phase multi-year resettlement. It provides modalities for conducting up-to-date comprehensive socio-economic baseline studies and census surveys and includes mechanisms to establish resettlement cut-off dates for each phase of resettlement. RAP 2/LRP 2 will include an analysis of compensation measures to date and, where necessary, DFZ will provide additional compensation, including in-kind support for PAPs who demonstrate that the compensation resulting from the valuation of their houses and structures was insufficient for them to purchase or build new houses and structures sufficient to restore their living standards. RAP 2/LRP 2 will also include an analysis of livelihood restoration measures to date and, where necessary, DFZ will provide additional livelihood restoration support. Under the RLRf, compensation must be based on the replacement value of fixed assets without depreciation (This is necessary, as depreciation calculations of assets is permitted under Tajik law). Livelihood restoration programs will provide the PAPs with assistance in their efforts to improve, or at least restore, their incomes and standards of living after they have been displaced, including through community social infrastructure, allocation of land for private and communal use, training and apprenticeships. Opportunities for provision of additional resources and services through benefit-sharing will also enhance livelihood restoration. RAPs prepared under the RLRf will pay particular attention to vulnerable groups, including people who by virtue of gender, age, physical or mental disability, economic disadvantage, ethnicity, social discrimination and exclusion may be disproportionately affected by resettlement. RAP 2/LRP 2 will be disclosed by the Effective Date of the project. The subsequent RAPs and LRPs will be consulted upon, disclosed and implemented from 2026 to 2032, prior to impoundment.

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

Relevant

The Rogun HPP is expected to have risks and impacts on terrestrial and aquatic ecosystems and biodiversity resulting from civil works, inundation of the reservoir, and extraction of construction materials, among others. Key impacts on



biodiversity are associated with the loss of natural, but non-critical, habitats including Juniper woodland, River and Floodplain habitats. Some areas for spawning fish will be lost through the creation of the reservoir, and upstream where the reservoir backs up into the rivers and streams feeding into it. It will identify locations for replanting and improving the juniper woodland, and for enhancing any floodplain areas for fish and amphibians in consultation with the project affected people and beneficiaries. The Project will also have Positive effects on mammals and in particular birds especially once construction has finished and the reservoir inundates and stabilizes. It is likely that otters, osprey, egrets and herons with some migrating duck species may benefit from the reservoir. Impacts associate with the beneficial services derived from the environment (plants, water etc.) are associated with the loss of wood and local vegetation/arable land, impacts (temporary) to fishing, and land clearance in general. The offsetting/no net loss measures expected in the biodiversity management plan will indicated means of replacing lost habitats which, once mature, will enable these services to continue. New settlements are providing land and access to these services and effects will be reduced. Additional mitigation measures include conservation of areas, restoration of damaged floodplain habitat elsewhere within the catchment, and the creation of new floodplain habitat upstream of the flooding zone. The Biodiversity Management is a condition of disbursement for all activities to be implemented by PMG.

ESS7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities Not Currently Relevant

There are no people in the project area that the meet the criteria of this standard.

ESS8 - Cultural Heritage Relevant

The project will affect cultural heritage, including several historic assets including fortresses, historic settlements, and fossil remains both directly and through affecting their setting. There are known to be 32 cultural and sacred resources affected during construction including cemeteries, tombs mosques and sacred springs. Intangible heritage such as traditional music, dance crafts, etc. is distinct to the region, and anecdotal evidence from engagement suggests that older generations feel more “attachment” to their villages and heritage. A detailed Cultural Heritage Management Plan (CHMP) has been developed to minimize impacts on both known and unknown heritage assets. This includes: (i) implementing exclusion zones around known assets; (ii) detailed cemetery relocation guidelines; (iii) ongoing engagement to ensure safe access to sacred areas; (iv) recording and identification through investigations of known assets; and (v) a Chance Finds Procedure. The CHMP is a condition of disbursement for all activities to be implemented by PMG.

ESS9 - Financial Intermediaries Not Currently Relevant

This is not a FI operation.

B.2 Legal Operational Policies that Apply

OP 7.50 Operations on International Waterways Yes

OP 7.60 Operations in Disputed Areas No

B.3 Other Salient Features

Public Disclosure



Use of Borrower Framework

No

The Borrower's Framework will not be used.

Use of Common Approach

No

The Bank will not use a common approach with the other financiers.

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required by implementation?

The following E&S instruments have been disclosed in-country and at the World Bank’s external website: ESIA/ESMP; Labor Management Procedures; Gender Action Plan; Stakeholder Engagement Plan (SEP); the Resettlement and Livelihood Restoration Framework (RLRF) and an initial draft of the Environmental and Social Commitment Plan (ESCP). The final ESCP will be disclosed after Negotiations.

The ESIA/ESMP will be finalized prior the Effective Date of the project, along with RAP 2/LRP 2, the Cumulative Impact Assessment (as part of the ESIA), Waste Management Guidelines/Templates and Traffic Management Plan. The Biodiversity Management Plan and Cultural Heritage Management Plan are conditions of disbursement for all activities to be implemented by PMG. One month after the signature of the loan agreement, a consultant will be hired based on terms of reference acceptable to the Association to conduct an investigation of all areas used for construction, past and present, to identify legacy wastes and contaminated lands, including asbestos and polychlorinated biphenyl compounds, and propose remedial measures in a written report.

Public Disclosure

III. CONTACT POINT

World Bank

Task Team Leader: Christopher Philip Trimble Title: Senior Energy Specialist

Email: ctrimble@worldbank.org

TTL Contact: Manuel Berlengiero Job Title: Lead Energy Specialist

Email: mberlengiero@worldbank.org

IV. FOR MORE INFORMATION CONTACT



The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

V. APPROVAL

Task Team Leader(s):	Christopher Philip Trimble, Manuel Berlengiero
ADM Environmental Specialist:	Maged Mahmoud Hamed
ADM Social Specialist:	Alexandra C. Bezeredi