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# Project Information Document (PID)

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Appraisal Stage | Date Prepared/Updated: 01-Oct-2024 | Report No: PIDA0261



**BASIC INFORMATION**

**A. Basic Project Data**

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Tajikistan, Tajikistan	EUROPE AND CENTRAL ASIA	P181029	Sustainable Financing for Rogun Hydropower Project
Financing Instrument	Estimated Appraisal Date	Estimated Approval Date	Practice Area (Lead)
Investment Project Financing (IPF)	04-Oct-2024	17-Dec-2024	Energy & Extractives
Borrower(s)	Implementing Agency		
Republic of Tajikistan	Rogun HPP Open Joint Stock Company, Rogun Project Management Group for the Power Plant Construction under the President of the Republic, Directorate of the Flooding Zone		

Proposed Development Objective(s)

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

**Components**

- Component 1: Construction activities
- Component 2: Project supervision support
- Component 3: RAP and LRP implementation
- Component 4: Hydro meteorological activities

**PROJECT FINANCING DATA (US\$, Millions)**

**Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)?	No
Is this project Private Capital Enabling (PCE)?	No

**SUMMARY**



<b>Total Operation Cost</b>	<b>6,290.00</b>
<b>Total Financing</b>	<b>6,290.00</b>
<b>of which IBRD/IDA</b>	<b>350.00</b>
<b>Financing Gap</b>	<b>0.00</b>

**DETAILS**

**World Bank Group Financing**

International Development Association (IDA)	350.00
IDA Grant	350.00

**Non-World Bank Group Financing**

Counterpart Funding	3,390.00
Borrowing Agency	1,250.00
Borrower/Recipient	2,140.00
Other Sources	2,550.00
OPEC FUND	100.00
KUWAIT: Kuwait Fund for Arab Economic Development	100.00
ABU DHABI: Abu Dhabi Fund for Arab Economic Development	100.00
SAUDI ARABIA: Saudi Fund for Development	100.00
Asian Infrastructure Investment Bank	500.00
Islamic Development Bank	150.00
EC: European Investment Bank	550.00
Foreign Multilateral Institutions (unidentified)	500.00
Bilateral Agencies (unidentified)	450.00

Environmental And Social Risk Classification

High

Decision

The review did authorize the team to appraise and negotiate



Other Decision (as needed)



## B. Introduction and Context

### Regional and Country Context

- 1. 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 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.
- 2. 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 through the use of a share of revenues that will finance a Benefit Sharing Program (BSP) and to augment the social safety nets in the country. Overall the Rogun HPP is expected to contribute to accelerated economic growth, strengthening economic and social resilience, and promoting the financial viability of the energy sector.
- 3. The Rogun HPP is expected to contribute to the development of a regional electricity market through a complementary program under an 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.

### Sectoral and Institutional Context

- 4. Central Asian countries are prioritizing reforms to ensure financially sustainable and creditworthy utilities, essential for maximizing regional electricity trade benefits.** Uzbekistan and Kazakhstan have advanced their energy reforms,



with Uzbekistan establishing an independent energy regulator and unbundling its power transmission company, and Kazakhstan focusing on private sector involvement and investment promotion. Both countries aim for full-cost electricity recovery by 2026, with current tariffs at 75 percent and 85 percent cost recovery, respectively. These reforms support the Rogun Hydro Power Plant (HPP) and reduce off-taker risks in Power Purchase Agreements (PPAs).

5. **Tajikistan is also reforming its electricity sector to improve financial viability, crucial for the Rogun HPP's success.** Reforms include tariff increases, unbundling of the state electricity company, debt restructuring, loss reduction, and corporate governance improvements. The government is committed to achieving full cost recovery by 2027 and has taken steps to improve payment discipline and transparency, particularly with its largest electricity consumer, the Tajikistan Aluminum Company (TALCO).
6. **The completion of the Rogun HPP is guided by sustainability principles, including macro-fiscal sustainability, dam safety, environmental and social standards, commercial frameworks through PPAs, and water flow management.** The Tajik government is seeking coordinated support to finance the project sustainably, with a financing plan comprising state budget funds, project revenues, and grants and loans. This financing is critical for maintaining the country's debt sustainability and allowing for social spending.
7. **The project is expected to significantly impact job creation, with the construction phase creating numerous direct and indirect jobs.** The development of transmission assets for electricity evacuation and regional connectivity is progressing, with the potential to benefit from projects like CASA-1000, enabling electricity exports to Pakistan. Increased regional energy trade is becoming a key agenda for Central Asia, with Tajikistan resuming electricity exports to Uzbekistan and contributing to the region's energy resources.

### C. Proposed Development Objective(s)

#### Program Development Objective and key outcomes

8. The PrDO is to increase the supply of clean, affordable, and climate resilient hydroelectricity for consumers in Tajikistan and the Central Asia region. The key Program outcome indicators, which will be measured across all Program phases, include:
  - (a) **Indicator One (Core):** Renewable energy capacity enabled (baseline: 0.04 GW; end target 3.78 GW);
  - (b) **Indicator Two (Core):** People with enhanced resilience to climate risks (baseline: 0; end target 9.75 million);
  - (c) **Indicator Three (Core):** People with access to electricity (baseline: 0; end target 9.75 million);
  - (d) **Indicator Four (Custom):** Project electricity exports to Central Asia region (baseline: 0; end target: 6 TWh);
  - (e) **Indicator Five (Core):** Net GHG emissions reduction per year (baseline: 0 MtCO<sub>2</sub>/year; end target 1.14 MtCO<sub>2</sub>/year).



#### Project Development Objective and key outcomes

9. The PDO is to increase supply of clean, affordable, and climate resilient hydroelectricity for consumers in Tajikistan and the Central Asia region by 2 TWh.

#### PDO Level Indicators

10. The key outcome indicators of the proposed Project (i.e., Phase 1 of the MPA), include:

- (a) **Indicator One (Core):** Renewable energy capacity enabled (GW);
- (b) **Indicator Two (Core):** People with enhanced resilience to climate risks (Number);
- (c) **Indicator Three (Core):** People with access to electricity (Number);
- (d) **Indicator Four (Custom):** Electricity exports to Central Asia region (TWh);
- (e) **Indicator Five (Core):** Net GHG emissions reductions per year (MtCO<sub>2</sub>/year).

#### D. Project Description

11. **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).
12. The Project (i.e., Phase 1 of the Program) will have four main components as described below.
13. **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.
14. **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, and implementation support.
15. **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.



16. **Component 4: Hydro meteorological activities** to finance activities in three sub-components (i) upper Vakhsh Hydro meteorological instrumentation; (ii) lower Vakhsh Hydro meteorological instrumentation; and (iii) technical assistance to support the Basin Water Organization (BWO) “Amudarya” in Tajikistan reporting both to the Ministry of Energy and Water Resources (MEWR) 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 MEWR and shared with riparian countries.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Area OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

17. The project is rated High for both Environmental and Social (E&S) risks and impacts. Key E&S risks and impacts are related to (i) water resource management; (ii) dam safety; (iii) Occupational Health and Safety (OHS); (iv) large-scale resettlement; (v) labor management; (vi) gender issues, including social inclusion and management of gender based violence, sexual exploitation and abuse and sexual harassment risks; (vii) waste and material management; (viii) air and water quality; (ix) soils and geology; (x) traffic and transport; (xi) noise and vibration; (xii) stakeholder engagement and grievance management; (xiii) community health and safety; and (xiv) cultural heritage. Stakeholder consultations have been ongoing since 2008, focusing on resettlement and key environmental impacts. The project has been managing E&S issues through instruments that were initially prepared by the Government and then updated and enhanced through the Bank’s support of the 2014 Techno-Economic Assessment Studies. The E&S instruments are being updated as part of the ongoing Rogun TA Project, with the updated ESIA already published.

18. OP 7.50 is triggered since the location of the Rogun HPP is on the Vakhsh, a tributary of the Amu Darya, and thus on an international waterway. In accordance with the Policy, other riparian countries were notified (Afghanistan, Kazakhstan, Kyrgyz Republic, Turkmenistan and Uzbekistan) and the OP 7.50 process was duly followed.





## E. Implementation

### Institutional and Implementation Arrangements

19. Rogun OJSC, through the PMG, and Directorate of the Flooding Zone (DFZ) will be the Project Implementation Entities. Rogun PMG will implement components 1, 2 and 4; and will also manage all procurements under the Project for all four components. DFZ will implement Component 3. Rogun OJSC will be responsible for technical aspects of Component 1, and BWO Amudarya and Hydromet will be responsible for technical aspects of Component 4. A project implementation agreement will be signed between entities involved in project implementation, to define roles and responsibilities.

### CONTACT POINT

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**APPROVAL**

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