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Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 17-Nov-2022 | Report No: PIDA34298

**BASIC INFORMATION****A. Basic Project Data**

Country Tajikistan	Project ID P178819	Project Name Technical Assistance for Financing Framework for Rogun Hydropower Project	Parent Project ID (if any)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 27-Oct-2022	Estimated Board Date 20-Dec-2022	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Project Management Group for Energy Facilities Construction	

Proposed Development Objective(s)

The project development objectives are to strengthen Rogun HPP Project's financial and commercial frameworks, enhance its environmental and social sustainability, improve the transparency, and support establishment of Rogun HPP Project's benefit sharing program

Components

Component 1: Development of macroeconomically sustainable financing plan and a commercial framework for Rogun HPP project

Component 2: Improvement of the dam safety

Component 3: Strengthening of E&S framework and benefit sharing aspects of Rogun HPP Project

Component 4: Strengthening of institutional capacity of Rogun PMG and Rogun JSC

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

Total Project Cost	20.00
Total Financing	20.00
of which IBRD/IDA	15.00
Financing Gap	0.00

DETAILS



World Bank Group Financing

International Development Association (IDA)	15.00
IDA Grant	15.00

Non-World Bank Group Financing

Other Sources	5.00
Asian Infrastructure Investment Bank	5.00

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

Country Context

- 1. Background and key challenges.** Tajikistan is a land-locked country in southeast Central Asia. It has a population of about 9.5 million and 2021 per capita income (Gross National Income, Atlas method) of about US\$1,100 - slightly above the lower-middle-income threshold. The poverty rate fell from 17.8 percent in 2015 to about 13.9 percent in 2021. Tajikistan's economy relies heavily on primary commodity production and exports, with limited economic diversification. Domestic investment and consumption depend on migrant remittances, which are about a third of Gross Domestic Product (GDP), thus leaving the economy highly vulnerable to external shocks.
- 2. Recent developments.** Real GDP growth rebounded to about 9.2 percent in 2021, after slowing to 4.5 percent in 2020 due to COVID-19. A sharp increase in precious metal exports, recovery in remittance inflows, and a pickup in private investment and consumption supported this rebound. Tajikistan's external position improved considerably from higher export prices for metals and mineral products and remittance inflows. The current account was in surplus of about 1 percent of GDP in 2021, compared to a surplus of 4.1 percent in 2020.
- 3. The National Bank of Tajikistan is undertaking efforts to reduce inflationary pressure.** In response to rising food and fuel price inflation, the National Bank of Tajikistan increased its policy rate four times from 10.75 at end-2020 to 13.25 percent by the end-2021. Nevertheless, average annual inflation rose from 8.6 percent in 2020 to 9 percent in 2021. Amidst lower remittances and a weakening ruble following Russia's invasion of Ukraine, the authorities allowed the somoni to depreciate by 13 percent against the US dollar in March 2022. Financial sector performance improved in 2021 - primarily due to liquidation being initiated for four insolvent banks (including two state-owned banks).



4. **Economic outlook.** Russia's invasion of Ukraine is expected to lead to a contraction of Tajikistan's economy. The main driver of this contraction is a projected fall in remittances, which is expected to lead to lower private consumption and investment. Other factors, including high prices and disruptions to trade, are also expected to contribute to the contraction. High global food and fuel prices are projected to lead to increase in inflation in 2022. The contraction of economic activity due to the war in Ukraine and a new tax code introduced at the beginning of the year are expected to lower tax revenues in 2022. This, along with an anticipated anti-crisis spending increase, is projected to increase the fiscal deficit to about 3.4 percent in 2022.

5. **Macroeconomic difficulties impacted construction of Rogun Hydropower Plant (HPP) Project.** The total project cost of Rogun HPP completion, as per current construction schedule, is estimated at US\$4.8 billion.¹ In 2007-2020, the Government spent about US\$3 billion on the project, which was entirely financed by the government budget. However, starting from 2020, the Government has been struggling to finance the construction of the project from the state budget given the macroeconomic impacts of COVID-19 and the economic implications from Russia-Ukraine conflict given significant reliance of Tajikistan on Russian economy.

Sectoral and Institutional Context

6. **The power sector is comprised of two state-owned electricity generation companies, two independent power producers (IPPs), electricity transmission and distribution companies, and a concession in Gorno-Badakhshan Autonomous Oblast (GBAO) combining electricity generation and distribution.** Barqi Tojik Open Joint Stock Company (BT) is the state-owned generation company which owns and operates all utility-scale generation plants in the country except for GBAO. Rogun Joint Stock Company (JSC) is responsible for construction and operation of the 3,780 MW Rogun HPP project. Two Independent Power Producers (IPPs) – Sangtuda-1 and Sangtuda-2 HPPs – were commissioned in 2006 and 2011 respectively to help the country address the issue electricity supply shortages. Both IPPs have 20-year Power Purchase Agreements (PPAs) with BT. In June of 2019, the Government established the new state-owned electricity transmission and distribution companies - Shabakahoi Intiqoli Barq (SIB) Open Joint-Stock Company (OJSC) and Shabakahoi Taqsimoti Barq (STB) OJSC respectively. Pamir Energy Company (PEC) generates and supplies electricity to around 245,000 people as well as public and commercial sector consumers in GBAO under a 25-year concession agreement, which expires in 2027.

7. **Electricity supply mix is dominated by hydropower.** The total installed generation capacity of Tajikistan is 6,058 MW and HPPs account for 88 percent. The 3,000 MW Nurek HPP, with a seasonal reservoir and average annual generation of about 11,000 GWh, is the largest operating plant and accounts for about 50 percent of the total annual electricity supply. The 3,780 MW Rogun HPP is the largest project under construction and, once its completed and the reservoir reaches the fully supply level in 2035, its annual average generation is expected to be around 14,400 GWh, which would be about 50 percent of total projected electricity demand.

Main Challenges in the Electricity Sector

8. **The electricity sector in Tajikistan will continue playing a major role as an important pillar of an export-oriented economy.** It is not only a service essential for social development and economic activity in the country but also an important building block of the Government's objectives to develop an export-oriented economy consistent with the National Development Strategy 2030. In particular, the power sector is well-

¹ Updated by the World Bank as part of the Rogun Financing Options Study (November 2021).



positioned to further expand exports of clean and affordable electricity to the broader Central Asia region where several countries are substantially dependent on fossil fuels for their electricity generation. Thus, the Government of Tajikistan would need to continue its efforts to address the main challenges facing the sector.

9. Challenge #1: Financial distress of BT. BT has been in financial distress due to: (a) below cost-recovery tariffs; (b) unsustainable and increasing debt levels; (c) low collection rates for billed electricity; (d) operational inefficiencies; (e) lack of opportunities for realization of full export potential; and (f) depreciation of TJS vs US\$ in 2015-2021. This has led to significant deterioration of financial standing of BT.

10. Challenge #2: Reduction of electricity supply reliability due to dilapidation of electricity generation, transmission and distribution (T&D) assets. The financial distress of electricity sector impacted the reliability of electricity supply, which deteriorated due to obsolescence and under-maintenance of main power generating plants and T&D networks. Specifically, only 77 percent of the generation capacity of Nurek HPP is operational because generating units require refurbishment given the age and technical condition.

11. Challenge #3: Lack of electricity access for about 43,000 people (0.5 percent of population) in GBAO and Khatlon regions. In parts of Khatlon, bordering Afghanistan, there are 74 settlements with total population of 31,500 without access to electricity. Those settlements could not be connected to the grid due to severe financial difficulties of BT. There are 61 settlements with 11,600 people in GBAO region without access to electricity. This was due to prohibitively high cost of connection to PEC network because the settlements are small and scattered over large geographical territory.

12. Challenge #4: Financing completion of the Rogun HPP project. The Government has increasingly been struggling to finance the project, which has significant financing needs relative to the size of the economy. While the Government has been spending around US\$300-US\$600 million per since 2016, the macro-fiscal implications of COVID-19 and the ongoing conflict between Russia and Ukraine conflict would most likely require the Government to limit the annual capital expenditures on the project at US\$375 million in 2022-2028. This was confirmed by the joint International Monetary Fund (IMF) – World Bank debt sustainability analysis (DSA) from end-2021. There have been no other sources of financing for the project thus far.

Project Snapshot and Background

13. The Project is located on the Vakhsh River upstream of the Nurek HPP. It is a Project with a large reservoir capable of providing seasonal regulation (the details are presented in Annex 1). Therefore, it can supply firm energy during winter months when demand for electricity is the highest and allow for exports of clean and affordable electricity to the Central Asia region and beyond. The project, together with Nurek HPP, could play the role of a balancing plant for Tajikistan and broader Central Asia region to help reliably integrate into network significant new solar PV and wind generation capacity, which are intermittent sources. The generation from the project will also provide a significant source of export revenues for many years to come, as it would allow for exports of clean firm energy both during peak and off-peak hours and facilitate easier integration of intermittent renewable sources (solar photovoltaic and wind) into the electricity networks of all Central Asian countries.

14. The Government proceeded with construction without the Bank or other development partners' support. Rogun JSC used the technical specifications developed as part of TEAS and relied on standard terms and conditions of EPC contracts of the International Federation of Engineering Consultants (FIDIC) – the industry standard. Three out of four main Engineering, Procurement, and Construction (EPC) contracts for the Project have already been signed. There is an experienced international consultant (Tractebel-ELC/France-



Italy) supporting Rogun JSC with technical supervision of works under some of the contracts as well as management of the interface among the various contractors.

Estimated Project Completion Cost and Financing Scenarios

15. **At the request of the Government, the Bank prepared the Rogun Financing Options Study (Study), which was completed in November 2021, and which estimated the project completion cost at US\$4.8 billion.**² This estimation was derived assuming the current construction schedule that envisages the construction to be completed by 2029 and the reservoir to be filled to fully supply level by 2036.³ Out of this amount, a total of US\$3.8 billion would be required up to 2025 with annual needs ranging between US\$500 million and US\$1 billion driven by the construction schedule. The current construction schedule requires substantial parts of the civil works, related to the main dam as well as right bank and left bank structures, to be carried out in 2022-2025 and therefore the annual financing requirements are quite large in those years. The annual financing requirement reduces starting from 2026 due to lower remaining volumes of civil works and equipment contracts.

16. **While the Study concluded that the project could provide significant economic and social benefits to Tajikistan and Central Asia, the current construction schedule is not macroeconomically sustainable and therefore the Government will need to prepare an updated schedule considering a realistic macro-fiscal scenario.** The Bank Study prepared a preliminary revised schedule, which assumes an overall 3-year extension of the project completion date to 2032 and the reservoir would be filled to the full supply level by 2039.⁴ The timeline would be possible with the following in place: grants and concessional loans from development partners as well as commercial financing once the public debt is sustainable. As agreed between the Government and development partners, more detailed update of the schedule will need to be prepared to ensure it reflects the macro-fiscal of the countries while ensuring the project is not exposed to excessive safety risks.

17. **The projection completion could possibly be financed with sequenced public and private financing, consisting of combination of state budget spending, grants, concessional loans, and commercial debt.** This scenario seeks to coalesce a broad range of resources and stakeholders considering debt sustainability. This scenario would result in a revised construction completion schedule of 2032 to match financing flows with expected revenues (which is an extension of three years from the current schedule), which increases the project construction completion cost from US\$4.8 billion to US\$4.9 billion exclusive of financing costs. The estimated annual concessional borrowing amounts under this scenario would pass the concessionality test with the grant element of 56 percent.⁵ Under this scenario, revenues would come from secured PPAs from domestic anchor customers as well as exports, which would represent about 62 percent of the total energy generated in 2022-2040.

Current Discussions on Financing of the Project Completion

² All Project completion cost estimates are as of June 30, 2021 and do not include the costs incurred prior to this date. This number excludes the financing cost.

³ It should be noted that even after completion of construction, about seven years would be required to fill the reservoir consistent with the water-sharing arrangements in place between the riparians.

⁴ Additional water withdrawals from Vakhsh by Tajikistan are expected within the limits of Tajikistan's allocation consistent with the water sharing agreements with riparian countries. However, as these withdrawals would be above and beyond current usage, an assessment to evaluate impacts would be needed during update of ESIA, and subsequent discussions with riparian countries may be required to resolve any issues that may arise.

⁵ Typically, debt with grant element of at least 35 percent is considered to be concessional.



18. **Development partners expressed their interest in the project during a high-level roundtable organized by the Government on December 7, 2022.** The Government and the Bank team presented the findings from the Study. The outcomes and conclusions were endorsed by the potential financiers including the list of issues that need to be addressed to increase the likelihood of the project to secure financing. There was a general consensus that the project: (a) remains economically viable as an export-oriented project with 62 percent of energy generated by 2040 to be exported; (b) holds significant potential for contributing to decarbonization of power systems of Central Asia countries given the cost-competitiveness of electricity it would generate and significant reliance on gas and coal in those systems; (c) should be completed in a macroeconomically sustainable manner without creating macro-fiscal risks; (d) operated under a sustainable commercial framework; and (e) should ensure that environmental and social performance is consistent with international good practice.

19. **The development partners highlighted the importance of having a coordination mechanism** and a common approach to conduct a joint assessment of the project to understand its technical, environmental and commercial aspects. This would enable an agreement on further steps and actions needed to finalize the required assessments so that each development partner can process its financing package. The Government proposed that the Bank take lead in coordination of the activities aimed at addressing the identified challenges outlined in the Study, and this proposal was supported by the development partners.

Relationship to CPF

20. **The proposed Project is fully aligned with World Bank Group’s Country Partnership Framework (CPF) for Tajikistan for FY2019-23 (Report No. 135875-TJ).** Specifically, the Project will contribute directly to the achievement of objectives under the following CPF Focus Areas:

- *Focus Area I (Human Capital and Resilience).* Reliable electricity supply is an essential prerequisite for enhanced educational, social and healthcare services. It is not possible to ensure quality delivery of educational, social and healthcare service if there are frequent electricity outages and supply interruptions. This creates not only significant additional costs for public and social facilities, but also significantly impacts the quality of the services.
- *Focus Area III (Enabling Private-Sector Growth and Creating Markets).* Reliable electricity supply is an important precondition for improved economic opportunities and, thus, private sector led economic growth. The Project would also contribute to the expansion of electricity export opportunities.

C. Proposed Development Objective

Development Objective(s) (From PAD)

The development objectives are to improve the financial and commercial frameworks of the Rogun hydropower project, enhance its environmental and social sustainability, improve transparency, and contribute to improved benefit sharing mechanism.

Key Results

- **Indicator One (Custom):** The Government adopts a macroeconomically sustainable and financially viable plan for completing construction of Rogun HPP Project (Yes/No). This indicator will measure the progress towards development and adoption of a macroeconomically sustainable financing plan. The macroeconomic sustainability means that the financing plan would not create risks of debt distress for the country taking into account the proposed annual capital expenditures and financing terms for those expenditures. The plan may be updated from time to time as the macroeconomic situation changes.



- **Indicator Two (Custom):** PPAs are signed for sale of Rogun HPP Project's electricity in the amount to make the financing plan viable (Yes/No).
- **Indicator Three (Custom):** Rogun HPP Project has functioning dam safety as well as environmental and social POEs (Yes/No).
- **Indicator Four (Custom):** The environmental and social instruments of Rogun HPP Project comply with the requirements of the World Bank's Environmental and Social Framework (Yes/No).
- **Indicator Five (Custom):** The summary information on existing and future contracts and financing plan for completion of construction of Rogun HPP Project are publicly disclosed (Yes/No).
- **Indicator Six (Custom):** Rogun HPP Project's community benefit sharing program is launched (Yes/No).

D. Project Description

21. **Component 1: Component 1: Development of a macroeconomically sustainable financing plan and a commercial framework for Rogun HPP Project.** This component will finance:

- a. Revision of the Rogun HPP Project construction completion schedule taking into account the existing and projected macro-fiscal framework of the country.
- b. Preparation of the Rogun HPP Project financing plan taking into account the updated construction completion schedule.
- c. Transaction advisory services to help the Government draft, negotiate, and sign long-term PPAs for sale of Rogun HPP electricity.
- d. Update of the economic analysis of Rogun HPP Project.
- e. Preparation of additional economic and financial assessments and studies that may be required for the needs of the Rogun HPP Project.
- f. Development of tariff reform program for electricity sector.
- g. Implementation of energy efficiency audit(s) of large industrial consumers and development of energy efficiency program with the objective of reducing the energy consumption without material impact on competitiveness.

22. **Component 2: Improvement of the dam safety.** This component will finance:

- a. Dam safety POE.⁶ The dam safety POE will carry out due diligence of existing design and project solutions, provide high level and professional independent advice and guidance to support objectivity and credibility in the development and implementation of designs and in the construction of the Rogun HPP Project, and share technical expertise and knowledge and so contribute to dialogue amongst the various stakeholders.
- b. Review of existing contracts and preparation of procurement documents.
- c. Additional technical and engineering studies and consultancy services that may be required for various technical aspects of the Rogun HPP Project and preparation of procurement documents. The

⁶ The Government committed to finance the dam safety POE cost after the completion date of the proposed TA Project.



scope of those studies will be developed after dam safety POE completes its due diligence on existing designs and project solutions.

23. **Component 3: Strengthening of E&S framework and benefit sharing.** This component will finance:

- a. Update of E&S instruments for Rogun HPP Project to align them with the requirements of the World Bank’s ESF.
- b. Assistance to Rogun PMG in developing a Contractor Management Plan that will include the details of how Rogun PMG will supervise the E&S performance of its contractors; and development of recommendations on ensuring compliance of contracts with E&S standards and requirements.
- c. E&S POE⁷ with a mandate to provide professional advice and guidance on E&S aspects of the Rogun HPP Project.
- d. Design of community benefit-sharing program that would contribute to equitable development and sustainable socio-economic growth at the local and national levels, which would allow to use part of the Rogun Hydropower Project revenues from electricity sale for various economic and social activities and initiatives.
- e. Implementation support to benefit sharing program and other E&S studies and assessments that may be required for Rogun HPP Project.

24. **Component 4: Strengthening of institutional capacity of Rogun PMG and Rogun JSC.** This component will finance:

- a. Corporate governance review of energy SOEs, including Rogun JSC, and development of recommendations to align those with best international practices.
- b. Capacity building, including trainings, for the Rogun PMG and Rogun JSC staff in dam safety, operation and management of hydro facilities, and project management.
- c. Public communication support to the Government, Rogun PMG and Rogun JSC.
- d. Purchase of information and communication technologies and office equipment for Rogun PMG and Rogun JSC.
- e. Incremental operating costs of Rogun PMG.

25.

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

Summary of Assessment of Environmental and Social Risks and Impacts

⁷ The Government committed to finance the E&S POE cost after the completion date of the proposed TA Project.



26. The environmental and social risk ratings are both High making the overall ESF risk rating High as well. 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.

27. The Environmental and Social Management Plan (ESMP) and first phase of the Resettlement Action Plan (RAP) have provided some lessons learned for the project. Key challenges 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 Operational Health and Safety (OHS); a lack of surveys of natural habitats, which could require a biodiversity offset plan; and, a lack of surveys on tangible and intangible cultural heritage impacts.

28. While this Project only involves support for institutional capacity building to strengthen the implementation of the Rogun HPP, the HPP itself does involve a series of potentially adverse, significant, and long term environmental and social risks and impacts due to the construction of the dam which will cause permanent inundation and creation of a reservoir, headrace tunnel, powerhouse and required transmission line and ancillary facilities such as access roads and workers camps. Social risks and impacts would include land acquisition, resettlement, labor influx, occupational and community health and safety, gender, sexual exploitation and abuse/gender-based violence. Environmental risks and impacts will involve permanent inundation of the reservoir area and permanent changes in landscapes, impacts on river flows, quality and morphology; terrestrial and aquatic ecosystems, ecosystem services and biodiversity; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in hydrology of the Vakhsh river, potential cumulative environmental and social impacts, etc. The assessment of cumulative impacts in the updated ESIA will include impacts to both upstream and downstream project affected peoples (PAPs), environmental flows, sediment transport and management, ecosystem services, and the potential need for biodiversity offsets (and, if needed, a biodiversity offset strategy).

E. Implementation

Institutional and Implementation Arrangements

29. Rogun PMG will be responsible for the implementation of the Project. PMG staff consists of 34 persons. In its procurement activities, it is guided by the Public Procurement Law of the Republic of Tajikistan, and the Rules for International Tender for Construction of Rogun Project. Rogun PMG has experience in implementing projects funded by the state budget including preparation of bidding documents for works and goods contracts, evaluation of bids, contract negotiations, and contract management.

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APPROVAL

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