APPRAISAL

of the Preliminary Application

of the Republic of Tajikistan

for an Investment Loan

Financed with the Resources of the Eurasian Fund for Stabilization and Development

for the Nurek HPP Rehabilitation (Phase 1) Project

in the amount of US $40 million

June 2017
Republic of Tajikistan
Fiscal year: 1 January – 31 December

Currency and equivalent units
As at 1 June 2017

<table>
<thead>
<tr>
<th>Currency unit</th>
<th>Equivalent to 1 Somoni</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Russian ruble</td>
<td>0.1533</td>
</tr>
<tr>
<td>1 Kazakhstani tenge</td>
<td>0.0283</td>
</tr>
<tr>
<td>1 US dollar</td>
<td>8.8200</td>
</tr>
<tr>
<td>1 Euro</td>
<td>9.8960</td>
</tr>
</tbody>
</table>

Abbreviations

CIS – Commonwealth of Independent States
EAEU – Eurasian Economic Union
EDB, the Manager – Eurasian Development Bank
EFSD, the Fund – Eurasian Fund for Stabilization and Development
GDP – Gross domestic product
GNI – Gross national income per capita
IFOs – International Financial Organisations
RT – Republic of Tajikistan

The document has been prepared by the following officers of the Eurasian Development Bank:

Director of the Project Group for Investment Loans, EFSD A. Cherekaev
Director of the Project Group for Financial Credits, EFSD A. Mirzoyev
Senior Manager, Project Group for Financial Credits, EFSD T. Kostanyan
Senior Project Manager, Project Group for Investment Loans, EFSD A. Raschikov
Senior Manager, Project Group for Investment Loans, EFSD Ye. Aliyaskarov
Project Manager, Project Group for Investment Loans, EFSD A. Mironenkov
Chief Specialist, Monitoring and Planning Division, EFSD O. Sosnina
Table of Contents

1. Recommended Terms of Investment Loan ................................................................. 4
2. Manager’s Appraisal of Preliminary Application of the Republic of Tajikistan .......... 5

APPRAISAL SUBSTANTIATION ........................................................................ 7
3.1. General Part .................................................................................................. 7
3.1.1. Overview of Social and Economic Situation in the Republic of Tajikistan .... 7
3.1.2. Overview of Power Sector of the Republic of Tajikistan .......................... 9
3.1.3. Foreign Economic Relations of the Republic of Tajikistan with EFSD Member Countries .... 10
3.1.4. Effect of EFSD Loan on Economic Situation in Tajikistan .................. 10
3.2. Project Details ............................................................................................ 11
3.2.1. Project Objectives ................................................................................. 11
3.2.2. Project Description (Project Components) ........................................... 12
3.2.3. Project Financing Needs ....................................................................... 13
3.2.4. Expected Integration, Social, Economic, and Environmental Effects of Project Implementation 13
3.2.5. Project Compliance with EFSD Objectives and Project State Support .......... 14
3.2.6. Project Financing Arrangement, Terms of Financing, and Allocation of Responsibilities between Participants ................................................................. 15
3.2.7. Application of Environmental and Social Safeguard Policies and Procedures during Project Implementation ................................................................. 16
3.2.8. Preliminary Project Risk Assessment ...................................................... 18
Annex No. 1 Matrix of Project Compliance with EFSD Mission Statement ................. 20
Annex No. 2 Preliminary Application of the Republic of Tajikistan ............................ 21
Annex No. 3 Nurek HPP Location, Layout, and Technical Specifications .................. 24
Annex No. 4 Key Economic Indicators of the Republic of Tajikistan ........................ 27
Annex No. 5 Calculation of Grant Element Based on International Monetary Fund Methodology .28
1. RECOMMENDED TERMS OF INVESTMENT LOAN

<table>
<thead>
<tr>
<th>Borrower</th>
<th>Republic of Tajikistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible government body / organisation</td>
<td>Ministry of Finance of the Republic of Tajikistan</td>
</tr>
<tr>
<td>Project Company</td>
<td>Open joint-stock holding company “Barki Tojik”</td>
</tr>
<tr>
<td>Sector</td>
<td>Power generation (hydropower)</td>
</tr>
<tr>
<td>Project</td>
<td>Nurek HPP Rehabilitation (Phase 1)</td>
</tr>
</tbody>
</table>

**Project type**
Financing the purchase, supply, installation, and commissioning of six single-phase 10.5 kV / 500 kV / 220 kV autotransformers to replace the autotransformers installed at the HPP transformer substation that have reached the end of their service life and are in an unsatisfactory technical condition.

**Amount and financial terms**
- Total Phase 1 cost: US $350 million (the total Project cost is to be updated in the process of its development);
- Total EFSD project cost: US $50 million;
- Amount of requested financing (investment loan) financed using EFSD resources: US $40 million;
- Co-financing of the EFSD Project by the Borrower: at least US $10 million, or 20.0 % of the total EFSD Project cost in the form of exemptions from mandatory payments (duties, taxes, and fees) under contracts financed with the proceeds of the EFSD investment loan;
- Loan currency: US dollars;
- Interest rate: 1.00 % per annum;
- Front-end fee: 0.5% of the investment loan amount;
- Maturity of the investment loan, including the grace period: 20 years;
- Grace period for investment loan principal repayment: 8 years;
- Grace period for interest payment: not applicable;
- Principal repayment: semi-annually in equal instalments;
- Grant element of the EFSD investment loan: 39.04 % (the calculation of the grant element is available in Annex No. 5).

**Operation type**
Investment loan

**Main objectives**
- Improved HPP reliability and safety in general and, thus, uninterrupted power supply of the country;
- Lower operation and repair costs; and
- HPP capacity recovery.

**Key performance indicators**
- Nurek HPP capacity recovery to the level of its installed capacity of 3,000 MW; and
- No failures, shutdowns, and frequent repairs of the autotransformers.

**Key risks and their mitigation**
The project is characterised by fiduciary, project, construction, social, and environmental risks. The ways to mitigate them are to be developed in the process of further preparation of the project.
2. MANAGER’S APPRAISAL OF PRELIMINARY APPLICATION OF THE REPUBLIC OF TAJIKISTAN

This Appraisal concerns the Preliminary Application of the Ministry of Finance of the Republic of Tajikistan (hereinafter referred to as the Applicant) for an investment loan financed with the resources of the EFSD (hereinafter referred to as the Loan) in the amount of US $40 million\(^1\) (hereinafter referred to as the Application). The main objective of the Loan is to finance the Nurek HPP Rehabilitation (Phase 1) Project (hereinafter referred to as the Project).

The second section of this document presents a substantiation of the Preliminary Application appraisal prepared by the EFSD Resources Manager (hereinafter referred to as the Manager).

Having considered the Application, the Manager offers the following recommendations and Appraisal to be considered by the EFSD Council:

1) The Application is consistent with the Fund’s objectives, directions for provision of financing, the procedure and terms for Fund resource provision set out in the Treaty on the Establishment of the Fund, the Fund Statute, the Regulation on the Use of the Fund’s Resources for Providing Investment Loans, and decisions of the EFSD Council.

2) The Application is formalised in line with the requirements of the Fund. The level of the Application preparation—from the point of view of availability of the information needed to perform the appraisal (formulate the preliminary opinion about the Project), and availability of justification documents needed for making a preliminary decision on the level of Project preparation—is satisfactory.

3) The Project is consistent with the EFSD mission statement. The National Development Strategy of the Republic of Tajikistan until 2030 envisages the development of the energy sector as a priority strategic objective, with electricity generation by the country’s HPPs growing from 16.8 billion kWh in 2015 to 37.6–41.6 billion kWh in 2030\(^2\). If implemented, the Project will promote better energy security and independence of the Republic of Tajikistan, enable greater electricity generation in summer and reduce electricity shortages in winter, recover the HPP capacity and reduce its operation and repair costs. The Project has got potential integration effects as:

- The producers and suppliers of the autotransformer equipment are expected to be the core Russian enterprises, while the customer will be Barki Tojik OJSHC (Republic of Tajikistan); and
- Under certain scenarios, the project implementation—followed by the commissioning of the CASA 1000 electricity transmission line and connection of the Nurek HPP to that line—may result in higher electricity supplies to Kyrgyzstan and other countries (Uzbekistan, Afghanistan, and Pakistan via Afghanistan).

4) The Manager has developed the Matrix of Project Compliance with EFSD Mission Statement (Annex No. 2 to the Appraisal), according to which the Project complies with 10 criteria under all the categories (anti-crisis, integration, and sustainable development).

5) The Republic of Tajikistan has complied with all the commitments set out in the Treaty on the Establishment of the Fund, the Fund Statute, and decisions of the Fund Council. The commitment to pay in the initial contribution in cash was fully met; according to the information available to the Manager, the country has no unsettled debt to the EFSD member states or to the core international financial organisations. Relevant justification letters will have been received by the date the EFSD Council adopts a decision on extending the Loan. The level of the debt sustainability of the Republic of Tajikistan allows to draw the conclusion on the Borrower’s sufficient capacity to pay.

---

\(^1\) Letter of the Ministry of Finance of the Republic of Tajikistan No. 5/5-19/953 of 16 November 2016


5
The amount of US $40 million requested under the Project is within the access limit of the Republic of Tajikistan to the EFSD resources (in view of the current liabilities under loans, the country’s access limit to the EFSD resources is US $67 million).

6) **To ensure adequate control over the quality of the Project documentation the Manager recommends to develop the Project with relevant independent expert reviews made and activities held to verify the existing and prepare the necessary Project documentation using the EFSD resources.**

In accordance with the practice of preparing EDB investment loans, in order to prepare the Project, independent consulting services will be required in the field of technical, legal, and environmental aspects, as well as procurement and monitoring of the targeted use of the funds. According to some preliminary estimates, the total amount of such costs will be about US $500,000.

7) **The Manager recommends making procurement under the Project components financed with the EFSD resources following the World Bank procedures:**
   - The World Bank Procurement Regulations for IPF Borrowers, 1 July 2016.

8) **The Manager recommends making disbursements of the EFSD resources following the World Bank procedures:**
   - The Disbursement Handbook for World Bank Clients dated May 2006, with subsequent additions and revisions; and

9) **The monitoring procedures will entail on-going collection of information and reports on the Project implementation, regular visits of the Manager’s officers to the Project implementation site.**

10) **The Manager recommends being guided by the World Bank’s safeguard policies in the process of the Project implementation.**

Since the remaining components of the Project are to be financed by the World Bank and the Asian Infrastructure Investment Bank being guided by the World Bank’s safeguard policies, to harmonise the approaches to the Project implementation, the Manager recommends being guided by the operational policies of the World Bank on environmental assessment and safety of dams.

In the process of further development of the Project, the Manager plans to cooperate with the World Bank on issues of getting Social and Environmental Impact Assessment Reports and Social and Environmental Action Plan Implementation Reports.
APPRAISAL SUBSTANTIATION

3.1. General Part

3.1.1. Overview of Social and Economic Situation in the Republic of Tajikistan

The rate of economic growth in Tajikistan has averaged at about 7.2 % for the past 20 years, being mainly supported with remittances and external government borrowing. After the end of the civil war (1991-1997), the Government actively borrowed short-term commercial loans to promote the economic recovery, thus, its external debt had reached 132 % of GDP by 2000. The successful restructuring³, combined with economic growth, helped reduce the external debt to 56 % of GDP in three years. Starting from the mid-2000s, the rapidly growing inflow of remittances became the main driver of economic growth. Due to the impacts of the global and regional crises, the amount of remittances fell sharply in 2009-2016. However, during the periods of lower remittances, the trade balance deficit was partly covered with external borrowings and foreign direct investments.

The structure of the country’s economic growth is characterised by a significant contribution of consumption, combined with low private investments. In 2010-2013, the contribution of investments in economic growth was less than one percentage point of the GDP growth. In that period, the main source of economic growth was consumption of households, whose share in GDP exceeded 100 %. As a result, the household consumption accounted for 38 percentage points in 2010-2013, while the growth was 32 % (cumulative).

The poverty reduction is also largely due to remittances. In 1999-2014, the poverty headcount (using the “global poverty line” of US $1.9 in PPP terms) dropped from 54.4 % to 19.5 %. One of the main reasons for the rapid poverty reduction was migrant workers’ remittances, since those are aimed at supporting the consumption of the most vulnerable. During the period under review, there was also an improvement of such social indicators as the education attainment, gender equality, mother and child welfare. According to the World Bank’s latest estimates, despite a sharp drop in the inflow of remittances, the extreme poverty rate continued to decline to 14 % in 2016 amid continued increases in wages⁴.

The steady inflow of foreign investments supported high growth rates in 2014-2016, and in 2017 the economic growth is also supported by the recovering positive rates of remittance inflows. In the crisis years of 2014-2015, the continued inflow of foreign investments in the capital of mining enterprises, mainly from China, as well as foreign loans under the Public Investment Programme, offset the dropping remittances. Owing to their greater multiplier effect on the economy, the foreign direct investments contributed positively to the increase in exports, mainly due to the sale of ores of ferrous, non-ferrous, and rare-earth metals. External loans stimulated the growth of public investments in construction, transport, and energy infrastructure. Despite the drop in their amount, remittances were important for the RT’s economy, accounting for 36.2 %, 25 %, and 25.6 % of the country’s GDP respectively in 2014-2016. In January-March 2017, the economy grew by 6.5 %, which is equivalent to growth in the same period of 2016. That growth was accompanied by a positive growth rate of remittances (+ 40 % against January-March 2016) and the accelerated growth of investments in fixed capital (+ 20 % against 18.3 % in January-March 2016). In the medium term, the economy of Tajikistan will continue to have an environment conducive to high growth rates, provided that the inflow of foreign direct investments and the recovery of remittances are sustainable. Based on some official statements, the Chinese government plans to invest in the RT over US $500 million in the near future, which, based on the track record of Tajik-Chinese cooperation, can be disbursed within 3-5 years.

The inflation, which remained at 5.8 % in 2014-2016, accelerated to 8.1 % in April 2017. Against the background of declining world food and fuel prices, the region as a whole faced a lower

³ US $100 million were written off under the Multilateral Debt Relief Initiative
⁴ World Bank ECA Economic Update May 2017
inflation, with deflation observed in some countries. This means that Tajikistan’s inflation was a result of internal factors. However, it should be noted that the impact of the somoni depreciation (by 48.9 % in 2014-2016) was limited.

**In recent years, the health of the banking system in Tajikistan deteriorated sharply.** With the onset of the crisis, the depreciation of somoni, combined with the widespread practice of foreign currency lending, a significant increase in directed lending and the poor quality of risk assessment, led to the accumulation of a significant share of non-performing loans in commercial banks. While in late 2014, their share in the total loan portfolio was 25 %, it reached 54 % as at end-2016. The indicators of banks’ profitability – ROA and ROE – were negative or close to zero in those years. The challenges of the banking sector are concentrated in the four largest banks of Tajikistan (Agroinvestbank, Tajiksodirobank, Tajprombank, and Fonon Bank), which did not comply with the prudential ratios and held most of the non-performing assets. In 2017, the liquidation procedure was initiated for Tajprombank and Fonon Bank, which allowed to improve the performance of the banking system: in March 2017, the share of non-performing debts dropped to 50.8 %.

**In 2014-2016, the RT fiscal policies were aimed at promoting economic growth.** During the period under review, the budget deficit increased from 0.6 % to 4.8 % of GDP. At the same time, the budget deficit was mainly generated owing to the capital expenditures financed with external borrowings under the Public Investment Programme (PIP), while in 2016-early 2017, the budget deficit was generated even without taking into account the PIP, which was associated with the expansion of government consumption. The budget deficit expansion in 2014-2016 occurred against the background of a significant slowdown in the budget revenue growth rate, which decelerated from 19 % to 6 %. The drop of revenues was largely due to the loss of tax revenues as a result of lower imports and private consumption. Another factor that explains the slowdown in the tax revenue growth is the on-going practice of granting tax and customs preferences.

**Ensuring debt sustainability calls for a balanced approach to mobilising new borrowings.** External loans have been the source of the budget deficit financing: in 2014-2016, the external public debt grew from 22.7 % of GDP to 32.7 % of GDP. The key risk is the low rate of recovery of the Russian economy, which is the main source of foreign exchange inflows in the form of migrant workers’ remittances. If the current levels of oil prices and Russian ruble exchange rate remain unchanged in the medium term, the growth of remittances is likely to be insignificant in dollar terms. According to the final Project Concept Note, the source of repaying the loan to support the Nurek HPP rehabilitation is the proceeds from electricity sales, which is a positive factor in terms of the public finance sustainability. However, in order to prevent the emergence of quasi-fiscal risks in this case, it is essential to implement systematic reforms aimed at improving the rate of recovery of the costs of electricity generation, transportation, and distribution, as well as the collection of electricity bill payments.

**The existing structural problems limit the prospects of economic growth.** The latest available data show that the situation remains complicated in terms of political and institutional indicators, and the level of risks is high. According to the World Bank’s Doing Business 2017 and the World Governance Indicators 2016, Tajikistan’s rankings have improved slightly over the last few years. There were improvements in the areas of paying taxes, getting electricity, dealing with construction permits, and registering property. The institutional environment has improved in terms of political stability and corruption control. At the same time, there are issues with the government performing its regulatory functions, starting a business, and the rule of law. Tajikistan is significantly lagging behind other countries in the region in terms of the quality of the institutional framework and the business climate, which significantly constrains its economic development. Weak institutions result in increased uncertainty in the economy and, thus, in low private investments and high interest rates.

The recent economic indicators of the RT are presented in Appendix No. 4.

---

5 The drop in private consumption was a result of lower remittances.

6 China ExImbank accounts for 90 % of the debt increase
3.1.2. Overview of Power Sector of the Republic of Tajikistan

The overall capacity of the power sector is sufficient to meet the current demand. Following the launch of the new HPPs (Sangtudin HPP-1 and HPP-2) and the CHP in recent years and in view of the energy conservation measures, which contributed to no increase in domestic electricity consumption, the overall electricity shortage in Tajikistan decreased, but its seasonal electricity consumption fluctuations persist: there is a significant surplus in the spring and summer season and a shortage of electricity during the heating season. Thus, there are limitations on electricity consumption introduced in winter in Tajikistan for legal entities and households. Such seasonal fluctuations in the electricity generation and consumption constrain the development of the country’s economy. Moreover, given the nature of the use of water resources of the transboundary Vakhsh River in the country, it is reasonable to sell the surplus electricity available in the spring and summer season to the neighbouring countries – Kyrgyzstan, Afghanistan, and Pakistan.

It should also be noted that with no replacement of Nurek HPP obsolete equipment, the number of accidents can increase and, as a consequence, it can lead to power outages even in the water abundant season.

The underdeveloped institutional environment. The power sector of Tajikistan is almost completely controlled by the national government, both from the point of view of state ownership of its fixed assets and from the point of view of decision-making on tariffs, energy balance, and electricity pricing. There is a single vertically integrated state monopoly in the country, there is neither an electricity market nor a competitive environment. So far, the government has undertaken no active measures aimed at creating a favourable environment for private investments, which could include restructuring of the state monopoly by business lines, privatisation, and introduction of market pricing mechanisms.

At the same time, the National Development Strategy of the Republic of Tajikistan until 2030 was approved in 2016. The government annually revises electricity tariffs upwards. The electricity tariffs were raised last in February 2017 and October 2016. By its Decision No. 259 of 27 May 2017, the Government approved the Conceptual Framework of Tariff Regulation in the RT Electricity Generation Sector, which includes a sequenced Action Plan to implement its first phase.

It is important to note that the Government has initiated the restructuring of Barki Tojik OJSHC, which is aimed at separating the functions of electricity generation, transmission, and distribution.

The difficult financial situation of Barki Tojik OJSHC is explained by its inefficient regulation. Over the last 5 years, Barki Tojik OJSHC has had planned losses due to the low electricity tariff, which does not cover the company’s operating costs. In 2015, Barki Tojik had losses of TJS 2.8 billion (about US $300 million), and its net assets (equity capital) fell below zero. As at end-2015, Barki Tojik’s total debt exceeded US $1.2 billion.

It has been noted above that the RT Government, among other things relying on the World Bank’s support, is restructuring Barki Tojik OJSHC. Thus, the RT Government adopted Resolution No. 42 “On State Support to Barki Tojik OJSHC” of 25 January 2017 (the Ultimate Beneficiary’s debt outstanding to Sangtudin HPP-1 OJSC was reduced), the Action Plan to Improve the Company’s Financial Position (signed by the RT Prime Minister on 5 April 2017) with specific measures to rehabilitate the Ultimate Beneficiary, and the Individual Plan of Barki Tojik OJSHC Restructuring (approved by Resolution of the RT Government No. 431 of 30 August 2011). The Conceptual Framework of Tariff Regulation in the RT Electricity Generation Sector provides for the transition to the market-based tariff regulation, inter alia reflecting the costs of servicing the borrowed loans in the tariff.

During the period of three years (2013-2015), the company’s total balance sheet increased from TJS 11.14 billion to TJS 11.56 billion (3.77 %), while its incomes grew from TJS 1.25 billion to TJS 1.55 billion (by 24 %).

The low ability of consumers to pay limits the prospects of raising the tariffs to an economically sound level. Tajikistan has one of the lowest per capita GDP among the CIS countries
(US $2,750 in terms of 2014 PPP). Although in 2005-2014 the average electricity tariff for end-users increased by the factor of 4.7 in US dollar terms and 7.8 in local currency, it is still one of the lowest in the region (US $23 / MWh in 2014). The Government pursues deliberate policies of curbing the growth of electricity tariffs for households and other consumers.

The Conceptual Framework of Tariff Regulation envisages targeted social support for certain categories of the population and certain industries (for example, agriculture) to accompany the electricity tariff increases.

**There are no mechanisms to ensure return on investment.** The system of the power sector regulation in Tajikistan does not envisage any mechanisms to ensure return on investments associated with the creation of new assets or the modernisation of aging equipment. Moreover, as mentioned above, since the tariffs set for the state monopoly – Barki Tojik OJSHC – do not cover even the current operating costs of the company, it is impossible to speak about any return on investment generated through the tariffs in principle.

At present, the government is financing the Rogun HPP Construction Project at its own expense and is mobilising funds for the Nurek HPP Rehabilitation (the Project under consideration). The obligations of the Republic of Tajikistan under the Project are sovereign ones, and a breach of the country’s obligations under the Loan Agreement would mean a default, which will not allow the RT to mobilise further external financing in future.

It should be noted that the part of the project to be supported by the World Bank was approved by its Executive Board on 3 May 2017, and the part to be financed by the Asian Infrastructure Investment Bank was approved on 15 June 2017.

### 3.1.3. Foreign Economic Relations of the Republic of Tajikistan with EFSD Member Countries

According to official data, the share of the EFSD member countries in the volume of trade of the Republic of Tajikistan is 44.8 % (that of Russia and Kazakhstan is 43.6 %). The RT exports to the EFSD member countries are insignificant and amount to US $0.26 billion. Cotton, food (fruit, vegetables, and dried fruits), as well as re-export of goods of Chinese manufacturers play a large role in exports. The volume of RT imports from the EFSD member countries was about US $1.5 billion in 2016, and those were mainly fuel and energy products, food, and chemical products.

It should be noted that labour migration and migrant workers’ remittances make a significant part of the RT’s foreign economic relations with the EFSD member countries. For instance, in 2016, there were about 0.9 million RT migrants in the EFSD member countries. At the same time, in 2016 the amount of migrants’ net remittances from the EFSD member countries (mainly from Russia and Kazakhstan) dropped by 9.6 % to US $1.8 billion, which led to a general decline in remittances and constrained the economic growth of Tajikistan due to lower private demand. If the current levels of oil prices and the exchange rate of the Russian ruble remain unchanged in the medium term, the growth of remittances is likely to be insignificant in dollar terms.

### 3.1.4. Effect of EFSD Loan on Economic Situation in Tajikistan

The implementation of the first phase of the Nurek HPP Rehabilitation Project will not have a significant effect on the key macroeconomic indicators of the Republic of Tajikistan. The EFSD financing will amount to US $40 million, which, other things being equal, will contribute to a higher share of public investment in the GDP. However, taking into account the fact that the loan will be used to purchase and install 6 new autotransformers to replace the existing physically and morally obsolete ones, there will be an increase in imports of goods by 1.3 % in the same period (in 2016, imports of goods amounted to US $2.9 billion). Improvement of the electricity generation, transportation, and distribution cost recovery with tariffs is one of the main conditions of the Nurek HPP Rehabilitation Project, therefore, some inflationary pressure may be expected in the medium term.
3.2. Project Details

3.2.1. Project Objectives

The project entails the allocation of funds from the Eurasian Fund for Stabilization and Development to the Ministry of Finance of the Republic of Tajikistan in the form of an investment loan to finance the purchase, supply, installation, and commissioning of six single-phase 500 kV / 220 kV autotransformers to replace the autotransformers installed at the HPP transformer substation that have reached the end of their service life and are in an unsatisfactory technical condition. The upgraded equipment will ensure safe and reliable connection of the 220 kV and 500 kV networks in the process of Nurek HPP’s power transmission, will reduce the operation and repair costs, and will be part of a package of measures to ensure the HPP capacity recovery.

The Nurek HPP Rehabilitation Project is the largest in the country. It entails the replacement of all the hydropower units, key elements of the HPP infrastructure, and 6 autotransformers, reinforcement of the dam, reconstruction of 5 transformers, as well as other measures to recover the HPP’s capacity, its efficient and safe operation.

The location and layout of the HPP are presented in Appendix No. 3 to the Appraisal.

Project Background

Nurek HPP is the largest hydroelectric power plant in the Republic of Tajikistan and in Central Asia, and its rock-fill dam is the second largest in the world (300 m high). The power plant is located 70 km South-East of Dushanbe, the capital city of the country, near the town of Nurek, supplying more than 70% of all the electricity generated in the country and being part of the Vakhsh HPP Cascade. The HPP installed capacity is 3,000 MW (8 hydropower units 335 MW each and 1 hydropower unit of 320 MW). The capacity of its reservoir is 10.5 km³ (the working storage is 4.5 km³), its surface area is 98 km², its length is about 70 km (until 2013 it used to be the highest dam in the world). The average annual power generation was over 10,223 million kWh per annum in 2014-2016.

The Nurek HPP design preparation was launched the 1950s, and its construction started in 1961. The project documentation for the hydroelectric unit manufacturing was developed at the Kharkov plant named after Kirov. The first 300 MW hydroelectric unit was put into operation in 1972. After the 9th and the last turbine was commissioned in 1979, the total HPP output reached 2,700 MW. After the reconstruction of the HPP in 1988, the capacity of its 8 hydropower units increased to 335 MW each and that of 1 hydroelectric unit – up to 320 MW.

Since 2010, the HPP has annually made idle water discharge from its reservoir during the summer period, as Tajikistan is unable to export electricity to Kazakhstan and to the South of Russia, since the power system of Tajikistan, previously connected with these countries through the power system of Uzbekistan, withdrew from the Central Asia Integrated Power System in 2009. As a result, Tajikistan is unable to import electricity in the winter season, when there is a severe shortage of electricity in the country and is unable to export large volumes of electricity in summer, when the country’s power system can generate electricity in excess of the RT domestic demand. Excess electricity can reach up to 7 billion kWh, but as there is no market to sell it, idle water discharges (of up to 700 m³/sec) are made. The resulting annual financial losses are estimated at US $200 million.

At present, the HPP can potentially generate only 77% of its design capacity due to its equipment obsolescence and lack of necessary maintenance. One of the obvious indicators of obsolescence is increased vibration and overheating of hydropower units, which makes it necessary to operate the equipment at lower power levels. For instance, unit No. 8 was stopped in 2011 to repair...
its runner and main rotary valve, and then – to fix problems with its transformer, and therefore it has not yet been put into operation. Due to the above reasons, the maximum capacity of Nurek HPP has not exceeded 2,320 MW over the last few years.

3.2.2. Project Description (Project Components)

In late 2016, the EFSD Resources Manager received a Preliminary Application of the Republic of Tajikistan for an investment loan financed with the EFSD funds to implement the Nurek HPP Rehabilitation Project (Phase 1), with the Project Concept Note attached.7

The data presented in the Preliminary Application enable a conclusion that the Project is consistent with the EFSD objectives, its implementation would have significant stabilisation effects and a potential integration one, including:

- Improved energy security and more sustainable operation of the energy system of the Republic of Tajikistan;
- More stable electricity supply to households and legal entities; and
- Potential expansion of trade with the EAEU member states through supplies of equipment and services.

The subsequent letters of the Ministry of Finance of the Republic of Tajikistan8 to the Manager included a package of Project documents, as well as its updated Concept Note, which inter alia reflected the revised terms and object of financing, more detailed information on the Project Company and other materials required for the Project assessment.

The Nurek HPP Rehabilitation Project is conditionally divided into 2 phases: Phase 1 includes 3 components (US $350 million):

- Component 1:
  - Subcomponent 1.1. Rehabilitation of 3 generating units and key infrastructure components of the plant; and
  - Subcomponent 1.2. Replacement of 6 autotransformers.
- Component 2: Enhancement of dam safety.
- Component 3: Technical assistance from the IDA and the AIIB.

Phase 2 (US $350 million) covers the finalisation of the Nurek HPP rehabilitation and involves the purchase of plant equipment to replace 6 hydropower units and rehabilitate 5 auxiliary transformers (US $300 million), as well as the payment of project management fees and the costs of engaging an expert group, the development of an environmental management plan (EMP), technical assistance and contingencies (US $50 million). The detailed structure of Phase 2 will be developed in 2017-2018.

Phase 1 is to be financed by the International Development Association (IDA, World Bank Group), the Asian Infrastructure Investment Bank (AIIB), and the EFSD. The proceeds of the EFSD Investment Loan will be used to finance Subcomponent 1.2.

The existing autotransformers are about 40 years old, and their condition (rusted bodies and structural elements that have outlived their design life) suggests a risk of equipment failure or downtime, which, in turn, can lead to the Nurek HPP being disconnected from the power grid. Tractebel Engineering, the consultant engaged by the World Bank, recommends to replace all the 6 autotransformers within a period of 5-10 years.

The decision to install and commission the six autotransformers should be preceded by the Project appraisal in the context of all the measures taken to rehabilitate Nurek HPP as a whole:

---

It is necessary to update the design and estimate documentation, determine the costs already financed and to be financed to perform the work, purchasing materials and equipment, to investigate the interconnections and mutual influence of the autotransformers and their component equipment with other elements and networks of the plant. To this end, it is expected to engage a consultant on a competitive basis.

At the same time, the preliminary analysis of the available Project documentation shows that the Project is associated with certain potential risks described in Section 3.2.8 of the Appraisal.

3.2.3. Project Financing Needs

In addition to replacing 6 autotransformers, the total cost of Phase 1 of the Project, which covers the rehabilitation of 3 out of 9 hydroelectric units, key HPP infrastructure components, measures to enhance the dam safety, as well as technical assistance to the ultimate beneficiary – Barki Tojik OJSHC – is US $350 million, of which US $225.7 million is provided by the World Bank (IDA funds), and US $60 million – by the Asian Infrastructure Investment Bank (AIIB).

The cost of the proposed EDB project is estimated by the Ministry of Finance of the Republic of Tajikistan at US $50 million, of which 80 % or US $40 million needed to replace the autotransformers are proposed to be financed with the EFSD funds. The Recipient of the investment loan will ensure co-financing of the EFSD Project in the amount of not less than US $10 million or at least 20 % of its value. The co-financing will be provided by the Recipient in the form of exemption from taxes, duties, and other mandatory payments under the contracts financed with the EFSD investment loan.

3.2.4. Expected Integration, Social, Economic, and Environmental Effects of Project Implementation

If implemented, the Project will help:
- improve the economic security and independence of the country of external fuel and electricity supplies;
- ensure more reliable and stable electricity supply to consumers (households and legal entities); and
- reduce the operation and repair costs.

The Project has potential integration effects, as:
- it is expected that specialized Russian companies may manufacture and supply the autotransformers and the auxiliary equipment, while the customer will be Nurek HPP managed by a state-owned company – Barki Tojik OJSHC; and
- under certain scenarios, the Project implementation—followed by the commissioning of the CASA 1000 electricity transmission line and connection of the Nurek HPP to that line—may result in higher electricity supplies to Kyrgyzstan and other countries (Uzbekistan, Afghanistan, and Pakistan via Afghanistan), as well as address the conflict in the hydropower and irrigation sectors between the Central Asian countries located within the Amu Darya River basin.

In line with the EDB environmental and social policies, the Project is classified under category B as a project with potentially significant environmental and local social effects, which are reversible and/or preventable. The World Bank’s independent consultant classified the Project under a similar category.

The direct social impacts of the Project will be minimal – the ESIA results show that the planned rehabilitation activities may result in a temporary decline in the Nurek HPP water discharge potential and electricity generation. If implemented, the Project is expected to have positive effects:
- higher electricity generation in winter and, thus, better economic prospects for households; and
- lower health and safety risks for HPP staff.

Under the baseline scenario, the results of implementation of Phase 1 by all the IFOs (WB, AIIB, and EDB (EFSD)) are expected to be as follows (World Bank staff calculations):

<table>
<thead>
<tr>
<th>Economic analysis for Phase 1</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2023</th>
<th>2027</th>
<th>2031</th>
<th>2035</th>
<th>2043</th>
<th>2047</th>
<th>2051</th>
<th>2055</th>
<th>2059</th>
<th>2063</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPC costs</td>
<td>US $ million</td>
<td>51.7</td>
<td>5.2</td>
<td>5.2</td>
<td>25.8</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Costs of autotransformers</td>
<td>US $ million</td>
<td>7.7</td>
<td>15.3</td>
<td>11.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>PMC costs</td>
<td>US $ million</td>
<td>0.1</td>
<td>0.2</td>
<td>1.1</td>
<td>0.8</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Incremental O&amp;M</td>
<td>US $ million</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Total incremental economic cost</td>
<td>US $ million</td>
<td>59.4</td>
<td>20.7</td>
<td>17.8</td>
<td>29.6</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Winter electricity deficit &quot;with project&quot;</td>
<td>GWh</td>
<td>1.824</td>
<td>1.999</td>
<td>425</td>
<td>0</td>
<td>1.425</td>
<td>3.681</td>
<td>5.145</td>
<td>7.871</td>
<td>11.067</td>
<td>14.815</td>
<td>19.211</td>
<td>22.894</td>
</tr>
<tr>
<td>Avoided CCGT generation to replace Nurek in winter</td>
<td>GWh</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.664</td>
<td>1.865</td>
<td>1.670</td>
<td>1.670</td>
<td>1.670</td>
<td>1.670</td>
<td>1.670</td>
<td>1.670</td>
<td>1.670</td>
</tr>
</tbody>
</table>

Economic analysis for Phase 1:

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2023</th>
<th>2027</th>
<th>2031</th>
<th>2043</th>
<th>2047</th>
<th>2051</th>
<th>2055</th>
<th>2059</th>
<th>2063</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoided economic cost of generation to replace Nurek in winter</td>
<td>US $ million</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>148</td>
<td>166</td>
<td>149</td>
<td>149</td>
<td>149</td>
<td>149</td>
<td>149</td>
<td>149</td>
</tr>
<tr>
<td>Avoided CCGT generation to replace Nurek in summer</td>
<td>GWh</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>928</td>
<td>744</td>
<td>563</td>
</tr>
<tr>
<td>Avoided economic cost of generation to replace Nurek in summer</td>
<td>US $ million</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Avoided revenue loss due to reduction in exports</td>
<td>US $ million</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>193</td>
<td>193</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Economic analysis for Phase 1:

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2023</th>
<th>2027</th>
<th>2031</th>
<th>2043</th>
<th>2047</th>
<th>2051</th>
<th>2055</th>
<th>2059</th>
<th>2063</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV exclusive of CO2 reduction benefits</td>
<td>US $ million</td>
<td>604,538</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERB exclusive of CO2 reduction benefits</td>
<td>%</td>
<td>33.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project emissions</td>
<td>kCO2e</td>
<td>11,248</td>
<td>11,248</td>
<td>12,397</td>
<td>12,303</td>
<td>6,485</td>
<td>4,314</td>
<td>4,314</td>
<td>4,314</td>
<td>4,314</td>
<td>4,314</td>
<td>4,314</td>
</tr>
<tr>
<td>Baseline operation emissions</td>
<td>kCO2e</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>602,401</td>
<td>675,069</td>
<td>604,538</td>
<td>604,538</td>
<td>604,538</td>
<td>604,538</td>
<td>604,538</td>
<td>940,517</td>
</tr>
<tr>
<td>Baseline construction emissions</td>
<td>kCO2e</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50,300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoided CO2 emissions</td>
<td>kCO2e</td>
<td>11,248</td>
<td>11,248</td>
<td>12,397</td>
<td>640,398</td>
<td>668,584</td>
<td>600,225</td>
<td>600,225</td>
<td>600,225</td>
<td>600,225</td>
<td>600,225</td>
<td>936,203</td>
</tr>
<tr>
<td>Social costs of avoided CO2 emissions</td>
<td>US $ million</td>
<td>-0.4</td>
<td>-0.4</td>
<td>-0.4</td>
<td>25.3</td>
<td>30.4</td>
<td>30.9</td>
<td>34.5</td>
<td>38.1</td>
<td>41.7</td>
<td>45.3</td>
<td>48.0</td>
</tr>
<tr>
<td>Net economic inclusive of CO2 reduction benefits</td>
<td>US $ million</td>
<td>-60</td>
<td>-21</td>
<td>-18</td>
<td>144</td>
<td>193</td>
<td>177</td>
<td>180</td>
<td>184</td>
<td>381</td>
<td>384</td>
<td>194</td>
</tr>
<tr>
<td>NPV inclusive of CO2 reduction benefits</td>
<td>US $ million</td>
<td>694</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERB inclusive of CO2 reduction benefits</td>
<td>%</td>
<td>37.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The projections are to be detailed in the context of further development of the Project. As the Project is developed further in future, the Manager recommends looking into the possibility of getting the WB’s Social and Environmental Impact Assessment Reports and Social and Environmental Action Plan Implementation Reports.

3.2.5. Project Compliance with EFSD Objectives and Project State Support

The project is consistent with the National Development Strategy of the Republic of Tajikistan for the period until 2030, which defines the development of the energy sector as a priority strategic
objective. The implementation of the Project will contribute to the enhancement of the energy security and independence of the Republic of Tajikistan, will boost the electricity generation, address electricity shortages, reduce the operation and repair costs, and, combined with other HPP rehabilitation measures, will help recover its capacity.

In accordance with the Regulation on the Use of the Fund’s Resources for Providing Investment Loans, the Project is a national one as:
- the Republic of Tajikistan is the borrower under the Project;
- the Project is implemented by the Project Company, which is a resident of the Republic of Tajikistan;
- the Project is implemented on the territory of one of the EFSD member states; and
- the Project envisages a recovery (an increase compared to the current level) of the HPP capacity.

The Action Plan for Barki Tojik OJSHC Financial Rehabilitation and the Conceptual Framework of Tariff Regulation in the RT Electricity Generation Sector (discussed in the preceding sections of the Appraisal) have been approved, the implementation of the Customised Barki Tojik OJSHC Restructuring Plan is underway.

3.2.6. Project Financing Arrangement, Terms of Financing, and Allocation of Responsibilities between Participants

The EFSD investment loan is provided to the Ministry of Finance of the Republic of Tajikistan and is then used to finance the Project Company – Barki Tojik OJSC. The obligations under the EFSD loan will be sovereign obligations of the Republic of Tajikistan.

The RT will reflect the funds disbursed by the EFSD in its state budget as a source of its budget deficit financing and as budget expenditures to finance the Project and will have budget allocations in the KR state budget in an amount necessary to service and repay the funds borrowed from the EFSD.

The disbursed funds, combined with the RT investments, will be allocated as a budget loan to finance the purchase, supply, installation, and commissioning of six single-phase 10.5 kV / 500 kV / 220 kV autotransformers to replace the autotransformers installed at the HPP transformer substation that have reached the end of their service life and are in an unsatisfactory technical condition. The generated electricity will be sold to consumers—legal entities on the territory of the RT and neighbouring countries (Afghanistan, Pakistan), as well as domestic households. The amounts outstanding for the electricity supplied will be covered with the payments received from consumers that, in turn, will ensure the repayment of the budget and the sovereign loans.

The recommended terms of financing are as follows:
- Loan currency: US dollars
- Amount of financing: US $40 million
- Interest rate: 1.00 % per annum
- Risk premium: it is recommended to define it following the detailed development of the Project
- Front-end fee: 0.5% of the investment loan amount
- Maturity of the loan, including the grace period: 20 years
- Grace period for investment loan principal repayment: 8 years
- Grace period for interest payment: not applicable
- Principal repayment: semi-annually in equal instalments
- Grant element of the EFSD loan: 39.04 %

The amount and the terms of financing will be updated based on the study of the current status of the autotransformers, evaluation of the scale of construction work needed to replace those, as well as updating of the costing of such work and equipment.

The Project financing arrangement is consistent with the Regulation on the Use of the Fund’s Resources for Providing Investment Loans:
3.2.7. Application of Environmental and Social Safeguard Policies and Procedures during Project Implementation

Since the remaining components of the Project are to be financed by the World Bank and the Asian Infrastructure Investment Bank based on the World Bank’s safeguard policies, in order to harmonise the approaches to the implementation of the Project subcomponent financed by the EFSD, it is recommended to use the following World Bank operational policies (OPs):

- OP 4.01. Environmental Assessment. According to the Environmental and Social Impact Assessment (ESIA) prepared by the Ultimate Beneficiary (January 2017)—examined by the State Environmental Agency of the Republic of Tajikistan (Certificate No. 241-15 of 14 March 2017)—the Project implementation should not generate a significant environmental impact due to the limited scale of the work being done as it is a rehabilitation project. The Project is expected to produce no significant adverse or irreversible environmental impacts; its impact
will be limited to the areas where construction works will be carried out, and the potential impact can be mitigated through the implementation of a well-designed Social and Environmental Action Plan. In line with OP 4.01, the Project is classified under category B. In the framework of these policies of the World Bank, the Recipient arranged public hearings to discuss the ESIA in August 2016. The main issues raised covered: the employment opportunities for local communities, the safety of workers and the public, the use of an alternative road in order to avoid the passage of heavy vehicles through the city of Nurek, and the impact of the Nurek HPP magnetic field.

- **OP 4.37. Safety of Dams:** The application of these policies is necessary due to the fact that the implementation of the Project is based on the operating characteristics of the existing dam. For such projects, the Recipient is required to establish an expert panel (EP) in order to: (a) inspect and assess the safety of the existing dam, dam structures, and its operation history; (b) review and assess the operation and maintenance procedures; (c) prepare an internal assessment report and recommendations concerning any rehabilitation work required to upgrade the existing dam to acceptable safety standards. The Recipient has completed the selection of candidates for the EP, including an experienced safety expert on safety of dams, a geologist, and an expert on electromechanical work.

  The application of the World Bank’s selected social safeguard policies is not required.
### 3.2.8. Preliminary Project Risk Assessment

<table>
<thead>
<tr>
<th>Risk group</th>
<th>Risk level assessment</th>
<th>Description</th>
<th>Mitigation measures</th>
<th>Risk level assessment after mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social and environmental risks</td>
<td>Medium - Moderate</td>
<td>The risks are associated with: 1) pollution due to the wastes produced in the process of rehabilitation (hazardous and non-hazardous), 2) health and work safety risks that may affect the workers (disposal of hazardous wastes and risk of electric shock), 3) the security of Nurek HPP (temporary drop in the water discharge capacity owing to the rehabilitation).</td>
<td>Project implementation based on the environmental and social policies of the World Bank, which provide for: 1) the preparation and implementation of an Environmental and Social Management Plan by the Recipient, 2) the establishment by the Recipient of a dam security expert panel, 3) public hearings held by the Recipient at all the stages of the Project preparation and implementation.</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
| Corruption and fiduciary risks    | High                  | In the process of the Project implementation, there may be corruption and fiduciary risks arising due to untargeted use of funds. Corruption Perception Index: in 2016 the RT ranked the 151st of 176 countries. | ▪ Monitoring the targeted use of the loan proceeds.  
▪ Using the procurement and disbursement policies and procedures acceptable for the Manager.  
▪ Using the prior contract review procedure in the cases to be specified in the Agreement.  
▪ Applying the compliance control procedures in line with the Manager’s internal regulations.  
▪ Sanctions applied for non-compliance with the policies and procedures fixed in the Agreement. | Medium-High                                   |
| Macroeconomic risk                | High                  | High vulnerability of the country to external shocks, limited institutional capacity, low gold and | An active dialogue on macroeconomic and structural policies. Technical assistance provided by international financial organisations to strengthen the domestic | Medium                                        |

9 https://www.transparency.org/
| Risk of sector and policy changes | High | The inadequate and unbalanced annual incomes of Barki Tojik OJSHC due to the lack of predictability in the electricity tariff increase policies, potential further somoni depreciation that may affect the financial strength of the Project and the overall performance of the Ultimate Beneficiary. | Implementing the Action Plan (Matrix) to improve the financial strength of Barki Tojik OJSHC (signed by the Vice Prime Minister of the RT Government on 5 April 2017). Implementing the Conceptual Framework of Tariff Regulation in the RT Electricity Generation Sector (Phase 1). Control performed by the World Bank and the Project funding partners over the implementation of actions and provision of adequate advisory and analytical assistance. Mobilising the World Bank’s support in implementing the new tariff methodology, strengthening the finance management efficiency at Barki Tojik OJSHC, and improving the quality of financial accounting and reporting. | High-Medium |
| Institutional capacity to ensure Project implementation and sustainability | Significant | Neither Barki Tojik OJSHC, nor Nurek HPP have got any experience in implementing similar large-scale projects. | Having an operational PIU, including its support with adequate resources and skilled staff, reflected as a separate commitment of the Recipient under the Agreement and a prior condition for the Agreement effectiveness. | Medium-Significant |
| Stakeholder risks | Significant | The World Bank disseminated official letters to notify the governments of Uzbekistan, Afghanistan, and Turkmenistan of the planned Project. No objections have been received. However, the risk of interference of these countries to impede the project implementation persists. | Monitoring the situation and holding consultations with the RT Government, the World Bank, and the AIIB, as needed. | Moderate |
### Annex No. 1
Matrix of Project Compliance with EFSD Mission Statement

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Anti-Crisis</th>
<th>Integration</th>
<th>Sustainable Development</th>
<th>Economic Sustainability</th>
<th>Environmental Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Project implementation in a depression-stricken sector&lt;sup&gt;2&lt;/sup&gt;</td>
<td>• Growth of mutual investments in EAEU member countries</td>
<td>• Creation of new jobs</td>
<td>• Growth of tax revenue (both directly from project implementation, and indirectly, from creating conditions for the development of other industries and/or businesses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Project implementation in a sector exposed to crises</td>
<td>• Growth of mutual trade in EAEU member countries</td>
<td>• Creation of new jobs for disadvantaged groups of the population</td>
<td>• Development of export-driven sectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Funding a project, whose failure may produce adverse social and economic impacts (threats to energy security)</td>
<td>• Growth of product items for trading between EAEU member countries</td>
<td>• Improvement of food security</td>
<td>• Growth of the share of domestic value-added products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Implementation of a project of strategic importance in the context of increasing budget constraints</td>
<td>• Growth of passenger and freight traffic flows in EAEU member countries</td>
<td>• Reduction of the volatility of prices for food and basic services</td>
<td>• Support of the stability of operation of national power supply systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Restoration of a sector in the aftermath of armed conflicts, mass riots, etc.</td>
<td>• Reduced overheads on traffic of passengers and goods between EAEU member countries</td>
<td>• Increased accessibility of basic services (education, health care, etc.)</td>
<td>• Reduction of logistics overheads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Creation of new jobs in the context of growing unemployment</td>
<td>• Reduced time of traffic of passengers and goods between EAEU member countries</td>
<td>• Improved access to higher quality water resources</td>
<td>• Diversification of economy and/or exports</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improved access (reduced costs and time) to key transport hubs (not necessarily located in EAEU member countries) linking EAEU member countries</td>
<td>• Increased access to electric power supply for communities in inaccessible and sparsely populated areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Project implementation with a view to preparation of a country to joining the CU</td>
<td>• Extended coverage of inaccessible and sparsely populated areas with communications services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provision of access to housing utility services (sewerage, gas supply, district heating) for communities in inaccessible and sparsely populated areas</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> The Investment Project accepted for review by the Manager must comply with one or more criteria in each column of the matrix.

<sup>2</sup> The criteria that are met by the Project under review are highlighted in green.
Управляющему средствами Евразийского
фонда стабилизации и развития
Евразийскому банку развития

Республика Казахстан, 050051
г. Алматы, пр. Достык, д. 220
Тел: +7 (727) 244 40 44
Факс: +7 (727) 250 65 70
e-mail: info@eabr.org

Как относительно: Финансирования проекта по реконструкции Нурекской ГЭС

Настоящим Министерство финансов Республики Таджикистан
выражает потенциальную заинтересованность в привлечении
инвестиционного финансирования из средств Евразийского фонда
стабилизации и развития (далее – Фонд) для реализации Фаза I Проекта
реконструкции Нурекской гидроэлектростанции (ГЭС), который будет
осуществляться ОАХК «Барки Толдак».

В связи с необходимостью принятия нами решения о целесообразности
подготовки предлагаемого инвестиционного проекта в соответствии с
процедурами Фонда, предназначенная на рассмотрение
концепции проекта, подготовленную в соответствии с утвержденным
Советом Фонда Порядком предоставления инвестиционного финансирования
из средств Фонда.

Просим проинформировать о решении, принятом Советом Фонда по
результатам рассмотрения концепции, относительно оценки возможности
предоставления инвестиционного финансирования из средств Фонда для
оказания поддержки в реализации предлагаемого инвестиционного проекта.

Настоящим подтверждаем, что прилагаемая Концепция содержит
полную и достоверную информацию о Проектной компании и
инвестиционном проекте, которая может быть подтверждена документально.
Выражаем согласие на проверку достоверности указанных в Концепции
dанных и готовность предоставить необходимую подтверждающую
документацию. Обязуемся своевременно информировать Управляющего
средствами Фонда обо всех изменениях данной информации, а также о существенных изменениях финансового состояния Получателя и представить по Вашему запросу все необходимые для подтверждения представленной информации документы, а также любую обоснованно запрошенную дополнительную информацию.

Приложения:
Концепция Инвестиционного проекта на 11 л. Документы, удостоверяющие полномочия лиц, подписавших Предварительную заявку и Концепцию Инвестиционного проекта на 2 л.

Абдусалом Курфониён
Министр финансов
Республики Таджикистан
Re: Financing Nurek HPP Rehabilitation Project

The Ministry of Finance of the Republic of Tajikistan hereby expresses its potential interest in mobilising investment financing from the Eurasian Fund for Stabilization and Development (hereinafter referred to as the Fund) to support the implementation of the Nurek Hydropower Plant (HPP) Rehabilitation Project to be implemented by Barki Tojik OJSHC.

In view of the need for us to make a decision on the feasibility of preparing the proposed investment project and in accordance with the Fund’s procedures, we first forward for your consideration the Project Concept Note prepared in accordance with the Regulation on the Use of the Fund’s Resources for Providing Investment Loans by the EFSD Council.

Please kindly inform us of the decision taken by the EFSD Council on the results of the Concept Note review with regard to the feasibility of providing the Fund’s investment financing to support the implementation of the proposed investment project.

We hereby confirm that the attached Concept Note contains complete and reliable information about the Project Company and the investment project, which can be documented. We hereby grant our consent for the verification of the data specified in the Concept Note and stand ready to share the relevant supporting documentation. We undertake to inform the EFSD Resources Manager, in a timely manner, about any changes in this information, as well as about significant changes in the financial standing of the Recipient and present, upon your request, all the documents necessary for the confirmation of the information submitted, as well as any other legitimately requested additional information.

Attachments:
Project Concept Note: 11 pages
Credentials of the Preliminary Application and Investment Project Concept Note signatories: 2 pages

Minister of Finance
of the Republic of Tajikistan [signature] Abdusalom Karim Qurbaniyon
Annex No. 3
Nurek HPP Location, Layout, and Technical Specifications

Nurek HPP Location
HPP Layout

a) hydroelectric complex layout

b) vertical section of the HPP headwater pressure tunnel

1. bottom culvert
2. overflow spillway
3. bottom culvert tunnel
4. tier 3 diversion tunnel
5. tier 2 diversion tunnel
6. switchyard (SWYD) 200 kV
7. HPP building and turbine room
8. SWYD 500 kV
9. branching area
10. emergency valves
11. intake house
12 and 13. temporary tunnel and intake house
### HPP Key Technical Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed capacity</td>
<td>MW</td>
<td>2,700</td>
</tr>
<tr>
<td>Improved installed capacity</td>
<td>MW</td>
<td>3,000</td>
</tr>
<tr>
<td>Hydropower units:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--- number</td>
<td>pcs</td>
<td>9</td>
</tr>
<tr>
<td>--- manufacturer</td>
<td></td>
<td>TURBOATOM (Kharkiv)</td>
</tr>
<tr>
<td>--- type</td>
<td></td>
<td>Radial-axial</td>
</tr>
<tr>
<td>--- target speed</td>
<td>rpm</td>
<td>200</td>
</tr>
<tr>
<td>--- runner diameter</td>
<td>m</td>
<td>4.75</td>
</tr>
<tr>
<td>Peak discharge, including</td>
<td>m³/sec</td>
<td>5,400</td>
</tr>
<tr>
<td>--- water discharges</td>
<td>m³/sec</td>
<td>4,040</td>
</tr>
<tr>
<td>--- turbine discharge</td>
<td>m³/sec</td>
<td>1,360</td>
</tr>
<tr>
<td>Operational water head:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--- maximum</td>
<td>m</td>
<td>275</td>
</tr>
<tr>
<td>--- nominal</td>
<td>m</td>
<td>230</td>
</tr>
<tr>
<td>--- minimum</td>
<td>m</td>
<td>207</td>
</tr>
</tbody>
</table>
## Annex No. 4

**Key Economic Indicators of the Republic of Tajikistan¹**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (% change to previous year)</td>
<td>7.5</td>
<td>7.4</td>
<td>6.7</td>
<td>6.0</td>
<td>6.9</td>
</tr>
<tr>
<td>GDP per capita, US $</td>
<td>962.4</td>
<td>1,048.7</td>
<td>1,113.4</td>
<td>925.9</td>
<td>790.5</td>
</tr>
<tr>
<td>Inflation (average annual, %)</td>
<td>5.8</td>
<td>5.0</td>
<td>6.1</td>
<td>5.7</td>
<td>5.9</td>
</tr>
<tr>
<td>Investments (% GDP)</td>
<td>12</td>
<td>14.1</td>
<td>16.2</td>
<td>18.8</td>
<td>20.3</td>
</tr>
<tr>
<td>Consolidated budget revenues (% GDP)</td>
<td>25.2</td>
<td>26.9</td>
<td>28.5</td>
<td>30.1</td>
<td>28.3</td>
</tr>
<tr>
<td>o/w taxes</td>
<td>19.9</td>
<td>21</td>
<td>22.9</td>
<td>22</td>
<td>20.5</td>
</tr>
<tr>
<td>Consolidated budget expenditures (% GDP)</td>
<td>25.1</td>
<td>28.2</td>
<td>29.1</td>
<td>32.5</td>
<td>33.1</td>
</tr>
<tr>
<td>Consolidated budget balance (% GDP)</td>
<td>0.1</td>
<td>-1.3</td>
<td>-0.6</td>
<td>-2.4</td>
<td>-4.8</td>
</tr>
<tr>
<td>Export of goods (% change to previous year)</td>
<td>0.4</td>
<td>-14.4</td>
<td>-7.3</td>
<td>-17.1</td>
<td>0.6</td>
</tr>
<tr>
<td>Import of goods (% change to previous year)</td>
<td>-1.4</td>
<td>7.4</td>
<td>20.2</td>
<td>-29.7</td>
<td>-8.9</td>
</tr>
<tr>
<td>Current account (% GDP)</td>
<td>-3.2</td>
<td>-0.8</td>
<td>2.46</td>
<td>-6.3</td>
<td>-3.8</td>
</tr>
<tr>
<td>External public debt (% GDP, EOY)</td>
<td>28.5</td>
<td>25.7</td>
<td>22.7</td>
<td>27.9</td>
<td>32.7</td>
</tr>
<tr>
<td>External debt service ratio (in % to exports of goods and services)</td>
<td>7.8</td>
<td>11.5</td>
<td>13.9</td>
<td>16.2</td>
<td>18</td>
</tr>
</tbody>
</table>

¹ Sources: Data provided by the authorities of the Republic of Tajikistan and the Manager’s calculations
Annex No. 5
Calculation of Grant Element Based on International Monetary Fund Methodology

The calculation is made electronically using the calculator available at the IMF website at: http://www.imf.org/external/np/pdr/conc/calculator