



Program Information Documents (PID)

Appraisal Stage | Date Prepared/Updated: 10-May-2019 | Report No: PIDA188421



BASIC INFORMATION

A. Basic Program Data

Country Tajikistan	Project ID P168211	Program Name Tajikistan Power Utility Financial Recovery	Parent Project ID (if any)
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 25-Apr-2019	Estimated Board Date 20-Jun-2019	Practice Area (Lead) Energy & Extractives
Financing Instrument Program-for-Results Financing	Borrower(s) Ministry of Finance	Implementing Agency Barqi Tojik, Ministry of Energy and Water Resources	

Proposed Program Development Objective(s)

The program development objectives are to improve the financial viability, increase the reliability of electricity supply, and strengthen the governance of BT, transmission, and distribution companies.

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	1,508.59
Total Operation Cost	479.10
Total Program Cost	479.10
Total Financing	479.10
Financing Gap	0.00

FINANCING (USD Millions)

Total World Bank Group Financing	130.00
World Bank Lending	130.00
Total Government Contribution	309.10
Total Non-World Bank Group and Non-Client Government Financing	40.00



Multilateral and Bilateral Financing (Concessional)

40.00

B. Introduction and Context

Country Context

- Tajikistan is a landlocked country located in southeast Central Asia. It has a population of 8.5 million and a Gross National Income per capita of US\$990 (current US\$, Atlas Method, 2017).** After a period of reduction in economic growth in 2014-2015 due to spill-over effects from Russia's economic deceleration, growth has resumed. Growth was largely supported by heightened public investment in infrastructure projects. On the supply side, the construction of the Rogun Hydropower Plant (HPP), now fully underway, and a strong performance by both industrial and agriculture sectors bolstered overall economic activity.
- The balance of payments situation has marginally improved.** The current account deficit narrowed to 0.7 percent of GDP in the first quarter of 2018 (from 1.1 percent a year earlier) as rising aluminum and cotton prices— together with a further increase in remittance inflows—partially offset a rising import bill (mainly the result of higher imports of machinery).
- Fiscal deficit remains high.** Although narrowing from the year-earlier period, the fiscal deficit remained relatively large at 4 percent of GDP in the first half of 2018. Construction spending on Rogun HPP, largely financed by the remaining balance of Eurobonds issued in 2017, continued to drive the government's expansionary fiscal policy. Annual consumer price inflation stood at a record low of 1.6 percent in June 2018 (down from 9 percent a year earlier), pulled down by strong domestic agricultural production and imports from Uzbekistan.
- Pressure on local currency exchange rate subsided.** The foreign exchange market remains highly regulated by the central bank, which constrains access to hard currency, indirectly limits imports, and stimulates the informal market. In mid-July of 2018 the Central Bank made a one-off adjustment by devaluing the somoni by 2.6 percent against the U.S. dollar thus reducing the pressure on the exchange rate.
- Poverty has followed a declining trend, but still remains a challenge.** Poverty measured at the internationally comparable line (US\$3.2 per person per day at PPP) stood at 20.3 percent of the population in 2015, and is expected to have fallen to 15 percent in 2018. Based on the national definition, the poverty rate fell from 31 percent in 2015 to 29.5 percent in 2017 with urban poverty declining at a faster pace.
- Growth prospects are modestly positive.** Tajikistan's outlook remains positive, building on Russian economic growth, up-trending global prices for major export commodities and further dynamism in the region. Growth is projected to average 6 percent in the medium term, supported by firm private consumption, a gradual rehabilitation of the banking sector, and continued investment in public infrastructure projects. Barring external shocks, the central bank's inflation targeting framework is expected to keep inflation in the single digits. Based on the international measurement, the poverty rate is expected to fall to 12.5 percent by 2020.
- Loss-making SOEs are a drag on the government budget and the private sector activity.** Barqi Tojik (BT) accounts for over 80 percent of total SOE debt to Ministry of Finance (MOF). BT's debt to MOF is comprised of: (a) TJS7.9 billion long-term debt under subsidiary agreements with the MOF, which were signed to on-lend to BT



the resources received by MOF from various development partners for investment projects; (b) TJS2.5 billion¹ current portion of long-term debt; and (c) TJS2.2 billion interest payable for loans from MOF.

Sectoral and Institutional Context

8. **The power sector is comprised of the vertically integrated energy company, Barqi Tojik (BT), three independent power producers (IPPs), and a concession in Gorno-Badakhshan Autonomous Oblast (GBO) combining power generation and distribution.** BT is fully owned by the Government. It owns and operates most of the electricity generating plants and is also responsible for electricity transmission, dispatch, and distribution services to around 8 million people in all regions of the country except for GBO. Two of the IPPs – Sangtuda-1 and Sangtuda-2 hydropower plants (HPPs) – were constructed with investments from Russian and Iranian state-owned companies, and supply electricity to BT under 20-year power purchase agreements (PPAs). Third IPP – Rogun HPP – is under construction. Pamir Energy Company (PEC) generates and supplies electricity to around 200,000 people in GBO under 25-year concession agreement.

9. **Electricity supply mix is comprised of hydropower and thermal generation.** The total installed generation capacity is 6,100 MW and HPPs account for 90 percent. The 3,000 MW Nurek HPP, with a seasonal reservoir, is the largest generating plant in operation. HPPs account for 94 percent of the total annual energy generation in the country. The thermal power plants are operated in winter to supply electricity and heat given: (a) high winter electricity demand, which accounts for 60 percent of annual demand, and (b) limited generation by HPPs due to hydrology conditions. The bulk of thermal energy-based generation comes from the new 400 MW coal-fired Dushanbe-2 combined heat and power plant (CHP), which was completed in 2016. BT also operates about 50 MW of the available capacity (200 MW) of the old and inefficient Dushanbe-1 CHP, which is run on heavy fuel oil (HFO).

10. **Demand is highly seasonal, with a winter peak driven by reliance on electricity-based heating.** BT has been struggling to fully meet this winter electricity demand given reliance on hydro and unfavorable hydrology conditions in winter. On the contrary, there has been significant electricity surplus in the summer given the abundant hydropower resource. The winter peaks have reduced since resumption of district heating (DH) supply to some parts of the capital city of Dushanbe after commissioning of Dushanbe-2 CHP and gradual rehabilitation of DH network.

11. **Electricity exports are increasing, and regional connectivity is improving.** Currently, BT exports around 2,500 GWh of electricity per year, including to Uzbekistan, but exports could be significantly increased with synchronization of Tajikistan with the Uzbek network and expected commissioning of 1,000 MW Central Asia South Asia (CASA-1000) Project in 2022. BT is currently implementing two important projects aimed at improving regional connectivity and increasing its participation in regional electricity trade.

12. The power system is currently facing the key challenges below, which need to be addressed to ensure adequate and reliable electricity supply, and financially sustainable power sector.

13. **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) limited opportunities for electricity exports; (f) non-competitive procurement of portion of heavy fuel oil (HFO) required for CHPs; and (h) depreciation of TJS vs US\$. This has led to significant deterioration of financial standing of BT with severe cash flow shortages.

¹ As of Dec. 31, 2017. For all financial data as of Dec. 31, 2017, the following exchange rates were used US\$1 = TJS8.82; €1 = TJS10.58; 1P = TJS0.15; and 1XDR = TJS12.53.



14. **BT has a sizeable cash deficit because tariffs are below cost recover levels and there are operational inefficiencies.** The significant increase in cash costs, which were not fully passed through to end-user tariffs, coupled with operational inefficiencies, resulted in significant cash deficit of BT, which is estimated TJS2.2 billion (US\$246 million) as 2018. This cash deficit can be eliminated only in case the Government implements gradual tariff increases coupled with financial measures and operational efficiency improvements on BT side.

a. **BT's revenues grew by 36 percent in 2015-2017 due to tariff increases, but expected positive impact was negated by low collection rates for billed electricity and significant increase in main costs.** In 2017, BT earned TJS2.1 billion (US\$240 million) from sales of electricity. The Company supplied 13,562 GWh of electricity to domestic consumers at an average tariff of 15.92 diram/kWh (USc 1.8/kWh), VAT inclusive, and exported 1,421 GWh to Afghanistan and Kyrgyzstan at weighted average export tariff of US\$0.035/kWh.

b. **Despite some improvement since 2015, the collection rate for billed electricity at 85 percent (2018) remains below 95 percent, the threshold level for well-functioning energy companies.** Collection rates have improved for TALCO, state budget financed organizations, and pumping stations. There has been significant progress with improvement of collections from TALCO. In particular, TALCO has been paying almost in full for electricity consumed since 2016 and even settled some of the outstanding old payables for electricity. As of end-2018, BT's receivables from TALCO stood at TJS400 million (US\$43 million).

c. **TJS denominated main costs of BT significantly increased since 2015.** The largest costs of BT – energy purchased from IPPs, debt service, and fuel costs – significantly increased since 2015 due to an increase of commercial debt and depreciation of local currency to US\$.

d. **Non-competitive purchase of Heavy Fuel Oil (HFO).** In 2015-2017, BT purchased about 67,000 tons of HFO each year for its Western Boiler House and Dushanbe-1 CHP. The fuel is needed to supply district heating to the parts of the Dushanbe city. However, not all of the fuel is purchased using competitive process, which results in above-market prices.

15. **Challenge #2: Reduction of electricity supply reliability.** The financial distress of BT impacted the reliability of electricity supply. BT has 450 transmission and distribution substations, which require urgent rehabilitation of key equipment. Most of those substations were constructed in 1960-70s and have not undergone any major capital upgrade. This has resulted in increased number of outages, which, often times, resulted in black-outs for consumers. BT was able to finance only the most critical expenditures and investments to replace the most critical assets where deferral of spending was not feasible due to significant technical risks and severe consequences in terms of end-user supply reliability. Specifically, the number of equipment failures in transmission and distribution networks increased from 2,237 in 2014 to 2,417 in 2017.

16. **Challenge #3: Weak Governance of BT.** The financial distress of BT is also caused by a lack of planning of investments and expenditures and gaps in accounting and financial reporting. BT needs to introduce proper planning of investments and expenditure into generation, transmission, and distribution. Currently, there is no generation expansion plan, which is prepared consistent with the principles of least economic cost planning. BT does not have a transmission and distribution investment program that draws upon the planned generation investments and takes into account the need for replacement of ageing and unreliable assets.

PforR Program Scope



17. The Program will be supporting the following key measures from the broader government program on financial recovery of BT.

<p>Results Area 1: Achievement of Financial Viability</p> <ul style="list-style-type: none">• Implementation of cost-recovery tariff methodology and further optimization of end-user tariff structure would increase BT's operating cash flows;• Ensuring BT does not have excessive debt service costs under loans received from MOF;• Installation of advanced billing and metering systems in the cities of Istaravshan, Isfara, and Konibodom.
<p>Results Area 2: Ensuring Electricity Supply Reliability</p> <ul style="list-style-type: none">• Purchase of electricity from Sangtuda-1 IPP would help to avoid supply shortages;• Implementation of the rehabilitation and upgrade of electricity transmission and distribution assets is essential for reduction of frequency of equipment failures and resulting electricity supply interruptions.
<p>Result Area 3: Strengthening of Governance and Improvement of Transparency</p> <ul style="list-style-type: none">• Continued implementation of good corporate governance principles;• Economically justified and financially feasible power sector investments;• Disclosure of key quarterly operational and financial data.

C. Proposed Program Development Objective(s)

Program Development Objective(s)

18. The program development objectives are to improve the financial viability, increase the reliability of electricity supply, and strengthen the governance of BT generation, transmission, and distribution companies.

19. The following outcome indicators will be used to measure achievement of the PDO:

- **PDO Level Outcome Indicator 1 (Custom):** Elimination of cash deficit of BT generation, transmission, and distribution companies (% reduction of cash deficit).
- **PDO Level Outcome Indicator 2 (Custom):** Annual electricity supply by Sangtuda-1 HPP to domestic consumers (GWh).
- **PDO Level Outcome Indicator 3 (Custom):** Reduction of equipment failures in electricity generation, transmission, and distribution (Number of equipment failures).
- **PDO Level Outcome Indicator 4 (Custom):** New generation and T&D capital investment decisions are made by BT generation, transmission, and distribution companies considering sound economic, technical, and financial principals (Yes/No).

D. Environmental and Social Effects

20. **Environmental.** The Program supports some civil works, such as construction of distribution lines and rehabilitation/upgrading of electricity transmission and distribution substations, which are likely to generate some negative environmental impacts. Besides, other Program activities may require removal and disposal of PCB-based oil from old transformers and circuit breakers and disposal of old equipment.

21. The draft ESSA concludes that adequate legislation is in place in the country for environmental



management, including systems for project-level environmental impact assessment, however, adequate rules and regulations to manage hazardous waste will need to be developed. BT, as the implementing agency, developed and adopted corporate level environmental policy in 2006. In-house capacity at BT for project level environmental risk management and hazardous waste management is weak. In the absence of adequate procedures for removal, handling, storage, transportation, and disposal of PCB based used oil, BT did not report any large-scale soil and water contamination or negative impacts on human health. This risk is partially mitigated through current practice to handling of oils containing PCB. BT stores all used transformer and other oils in the specially equipped warehouses on the territory of multiple substations. There is significant spare capacity to store large volumes of oil for the next ten years until adequate disposal mechanisms become available.

22. Based on the capacity gaps, the ESSA recommends to:

- a. Create an Environmental and Social Services Group (ESSG) within BT to provide necessary guidance and compliance with environmental management under the national laws.
- b. Ensure PMU ES provides environmental management services to BT under the Program until ESSG is created within BT. After management contractors for transmission and distribution are selected, then the Government will need to ensure they establish relevant E&S units and follow the requirements of the local legislation applicable to Program activities.
- c. Adopt environmental policies and corporate level guidelines and SOPs for hazardous waste management. BT will hire a consultant to prepare Environmental Policy and corporate level guidelines and standard operating procedures (including emergency plans for oil spills) for the hazardous waste management, including PCBs. This is required given the current deficiencies observed in the corporate policies related to hazardous waste management, including PCBs. The management contractors will also be required to follow the requirements of the environmental policies and corporate guidelines.

23. **Social:** The Program is expected to have overall positive social impacts as the interventions will improve the reliability of electricity supply and improve customer responsiveness of BT, which needs significant improvement considering the results of surveys, including the survey conducted by the Consumer Union within the framework of Electricity Governance Initiative (EGS). Specifically, rehabilitation and upgrade of T&D assets and scale up of AMI to cover the cities of Istaravshan, Isfara, and Konibodom are expected to lead to increase reliability of supply. These improvements are also expected to be pro-poor as those facing unreliable electricity supply are overwhelmingly the poor and vulnerable households in the country's rural areas.

24. The main negative social impact of the Program is the gradual tariff increases, which, coupled with other measures in the Program, are planned to improve the financial standing of BT. Tariff increases would impact the poor households as they will have to devote an increasingly larger share of their household budget to electricity. Other adverse impacts related to construction activities are likely to be negligible given that the Program primarily includes rehabilitation and upgrade of existing power transmission and distribution assets, which mainly include existing substations.

34. The impact of increasing electricity tariffs on vulnerable consumers will be mitigate through combination of Targeted Social Assistance (TSA) program and lifeline tariff structure. The Government should complete the roll-out of TSA to include the remaining 40 districts of the country and increase the coverage to 200,000 households or 15 percent of the total. Additionally, the coverage should be expanded to include largest number of households. The additional fiscal costs can be covered from:

- (a) Savings in debt service costs under sovereign-guaranteed loans and credits. Currently, BT pays only negligible amount of debt service to MOF under subsidiary agreements, which were used to



on-lend the international financiers’ resources to BT. With improvement in financial standing of BT, it will be able to make timely payments, which will free up some resources at the state budget.

- (b) Increased tax revenues from BT given larger revenues due to tariff increases.

35. The Ministry of Health and Social Protection (MHSP) should estimate the poverty impacts of tariff increases by July of each year of the Program implementation. This will allow to provide timely inputs to MOF during preparation of the annual state budget in order to program for TSA allocation. The Program would provide the required support to MHSP in carrying out poverty impact assessment of tariff increases and estimation of the cost of mitigation.

36. The mitigation through TSA program should be completed with introduction of lifeline tariffs for electricity. The main advantage of lifeline tariff structure, as poverty impact mitigation measure, is the it does not lead to additional fiscal costs. Specifically, the end-user tariffs may be structured in a way to allow for lower tariff for consumption until specified threshold volume (e.g. 250 kWh per month). BT will recover the revenue shortfall by charging higher tariff to consumers with larger monthly consumption because larger consumption is apparently associated with higher income levels. The decision on introduction of lifeline tariff structure will be made in 2020 because it requires the following prerequisites to take place: (a) the new tariff methodology is being implemented and detailed cost allocation is done to determine the tariff for all categories of consumers; and (b) optimal level of lifeline tariff is determined based on various factors, including summarized consumption data from BT. The ongoing ESMAP financed activity on Improvement of Electricity Tariff Setting and Mitigation of Impacts on the Poor will help to complete this analysis and provide recommendations regarding the lifeline tariff mechanism by the end of 2019.

E. Financing

Program Financing (Template)

Sources	Amount (USD Million)	% of Total
Counterpart Funding	309.10	64.52
Borrowing Agency	309.10	64.52
International Development Association (IDA)	130.00	27.13
IDA Grant	130.00	27.13
Cofinancing - Other Sources (IFIs, Bilaterals, Foundations)	40.00	8.35
Asian Infrastructure Investment Bank	40.00	8.35
Total Program Financing	479.10	



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