ASIAN INFRASTRUCTURE INVESTMENT BANK

PD000374-UZB
March 30, 2022

Project Document
of the Asian Infrastructure Investment Bank

Sovereign-backed Financing

The Republic of Uzbekistan
Bukhara Region Water Supply and Sewerage Project Phase II

Currency Equivalents
(As of March 8, 2022)

Currency Unit – Name
USD1.00 = UZS10,904

Borrower's Fiscal year
January 1 – December 31

Abbreviations

ADB	Asian Development Bank
AIIB; the Bank	Asian Infrastructure Investment Bank
BS	Bukhara Suvtaminot; the Regional Water Company of Bukhara
CBA	Cost-benefit Analysis
CFADS	Cash Flows Available for Debt Service
DC	Design Consultant
DSCR	Debt Service Coverage Ratio
EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
ES	Environmental and Social
ESIA	Environmental and Social Impact Assessment
ESP	Environmental and Social Policy
ESMP	Environmental and Social Management Plan
ESMPF	Environmental and Social Management Planning Framework
ESS	Environmental and Social Standard
FS	Feasibility Study
FSM	Fecal Sludge Management
FM	Financial Management
GoU	Government of the Republic of Uzbekistan
GAP	Gender Action Plan
GDP	Gross Domestic Product
GRM	Grievance Redress Mechanism
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFI	International Financial Institution
MDB	Multilateral Development Bank
MHCS	Ministry of Housing and Communal Services
NRW	Non-Revenue Water
OCRR	Operating Cost Recovery Ratio
OHS	Occupational Health and Safety
O&M	Operation and Maintenance
PCU	Project Coordination Unit
PDS	Project Delivery Strategy
PIE	Project Implementing Entity
PAP	Project-affected People

PP	Procurement Plan
PPM	Project-Affected People's Mechanism
RP	Resettlement Plan
RPF	Resettlement Planning Framework
RWC	Regional Water Company
SC	Supervision Consultant
SDG	Sustainable Development Goal
SECO	Swiss State Secretariat for Economic Affairs
USD	United States Dollar
UZS	Uzbek Som
UZST	Uzsuvtaminot Joint Stock Company
VAT	Value Added Tax
WB	World Bank
WDU	Water Distribution Unit
WSS	Water Supply and Sanitation

Contents

1. Summary Sheet

Project No.	000374
Project Name	Bukhara Region Water Supply and Sewerage Project Phase II
Borrower	Republic of Uzbekistan
Project Implementing Entity	Uzsuvtaminot Joint Stock Company (UZST)
Sector	Water and Waste
Subsector	Water Supply, Sewage
Project Objective	The Project Objective is to provide access to safely managed water and sanitation services in the Bukhara region and strengthen the operational performance of the water utility of Bukhara region.
Project Description	**Component 1 - Investment in Water Supply Infrastructure (USD160.7 million)** Construction and rehabilitation of intakes, main water lines, water treatment facilities, pumping stations and distribution networks in three districts of Bukhara region, smart meters for production facilities and distribution network; mechanical meters for households. **Component 2 - Investment in Sewage Infrastructure (USD94.3 million)** Construction of centralized sewage systems in district centers consisting of collectors, pumping stations and biological sewage treatment plants as well as discharge facilities in six district centers of Bukhara region and sewerage network extension in the city of Bukhara. **Component 3 - Project Implementation and Management Support (USD13.9 million)** Project management and implementation support to assist the Project Implementing Entity (PIE) in ensuring seamless coordination, efficient implementation and compliance with the relevant policies.
Implementation Period	Start Date: July 1, 2022 End Date: June 30, 2027
Expected Loan Closing Date	December 31, 2027
Cost and Financing Plan	Total cost USD281.3 million GoU USD32.9 million AIIB loan USD248.4 million including capitalized interest and fees USD12.4 million
Size and Terms of AIIB Loan	Size: USD248.4 million 25-year maturity, including a 5-year grace period
Environmental and Social Category	A

Risk(Low/Medium/High)	High
Conditions for Effectiveness	Establishment of a Phase-II Sub Group within the Project Coordination Unit (PCU) with key experts onboarded. Confirmation that the Grievance Redress Mechanism (GRM) at PCU level established under the Bukhara Region Water Supply and Sewerage Project (Phase I) also applies to this Project.
Key Covenants	Subsidiary Agreement executed within three months of effectiveness. Maintain PCU with adequate staffing throughout the project implementation period. Consult AIIB on any institutional changes, which may affect the implementation arrangements of the project. Quarterly Project Implementation Reports, including reporting on the environmental and social management.
Policy Assurance	The Vice President, Policy and Strategy, confirms an overall assurance that the proposed Bank Financing complies with the applicable Bank operational policies.
Economic Capital (Ecap) Consumption	USD49.1 million (24.6%)

President	Jin Liqun
Vice President	Konstantin Limitovskiy
Director General	Supee Teravaninthorn
Manager	Gregory Liu
Project Team Leader	Zacharias Ziegelhöfer, Senior Investment Specialist – Water & Urban
Project Team Members	Georgi Dzhartov, Social Development Specialist Shodi Nazarov, Financial Management Associate Sunhye Park, Investment Operations Specialist Chitambala John Sikazwe, Senior Procurement Specialist Liu Yang, Counsel Zhixi Zhu, Environmental Specialist Alexander Grieb, Senior Water & Sanitation Specialist (Consultant) Giacomo Ottolini, Senior Procurement Specialist (Consultant) Pulat Zakirov, Water & Sanitation Engineer (Consultant) Yuyou Guo, Project Assistant

2. Project Description

A. Project Overview

1. The **Project Objective** is to provide access to safely managed water and sanitation services in the Bukhara region and strengthen the operational performance of the water utility of Bukhara region.

2. **Project Description.** This project constitutes the second phase of a larger effort to comprehensively address water supply and sanitation in Bukhara. After the conclusion of the second phase, the Bukhara region will be comprehensively covered in terms of piped water supply services with a connection rate of close to 100 percent and all district centers will be covered in terms of centralized sewage infrastructure achieving an overall regional coverage with sewerage network of approximately 45 percent.

3. The **Expected Results** will be monitored through the following indicators:
(i) People provided with improved access to safely managed water supply services in target areas,
(ii) People provided with improved access to safely managed sanitation services through connection to sewage systems in target areas,
(iii) Bukhara Suvtaminot (BS), the water utility of Bukhara region, is operating the water supply and sanitation (WSS) infrastructure in a sustainable manner (Operating cost recovery ratio > 1).

4. **Expected Beneficiaries.** The Project is expected to benefit 1.2 million residents[1] of the project areas in the Bukhara region. In two districts, the households will benefit from both water supply and sewage components. The breakdown is then as follows:

- 500,000 people with new access to safely managed water supply and 160,000 people with improved service quality.
- 400,000 people with new access to safely managed wastewater services and 160,000 with improved access to safely managed wastewater services.

A set of intermediate indicators will be used to track component level outputs and results. The Results Framework including monitoring indicators is presented in Annex 1.

B. Rationale

Strategic fit for AIIB

5. The Project is aligned with the Bank's Corporate Objective of "Financing Infrastructure for Tomorrow"; it contributes to the key priority areas of green infrastructure and technology-enabled infrastructure and fits within the strategic investment focus areas of water services and resource

[1] In the district centers of Vobkent and Shofirkon, beneficiaries will benefit from both water supply and sanitation activities. For this reason, the number of beneficiaries of the subcomponents exceeds the total number of beneficiaries, which has been adjusted for beneficiaries receiving both water and sanitation improvements to avoid double counting.

management of the Bank's water sector strategy. The investments under this project will increase access to safe drinking water and sanitation services in a comprehensive and integrated approach. The infrastructure is expected to be technically sustainable, environmentally safe and financially viable, also by strengthening the capacity and business practices of BS in effective service provision and by involving end users to pay for the improved services.

Value addition by AIIB

6. **Quality project preparation and implementation.** The Bank team has provided substantial technical advice during project preparation on engineering, environmental and social (ES) management and cost-effectiveness of the investments. To achieve a high quality of project implementation, clear roles and responsibilities for effective implementation were defined building on the existing modalities of the Phase I Project. During the implementation period, the Bank team will closely monitor the progress to provide for quality, safety and cost-effectiveness through appropriate design. The Bank team will also monitor adherence to high ES standards during project implementation with reference to cultural heritage and sites of historical significance. A Gender Action Plan will be implemented to enhance participation of, and project benefits to women.

7. **Digital-enabled infrastructure to strengthen financial sustainability.** AIIB's close engagement contributes to the development of digital-enabled infrastructure to strengthen financial sustainability of the water utility of Bukhara. Smart meters for water production and distribution will be installed, which will enable the water company to establish a water balance and conduct water loss reduction campaigns. The installation of mechanical meters for residential users supports the transition to the billing and collection of water tariffs on a volumetric basis. Together, the reduction of technical losses and commercial losses is expected to significantly decrease Non-Revenue Water (NRW) and improve the financial performance of the water company.

8. **Integrated and comprehensive approach.** AIIB is supporting the balancing of water supply investments with the related sewage system expansion and improvements to cover the entire water cycle taking into consideration the impact on water resources. The need for financing in the water and sanitation sector in the Bukhara region and beyond is enormous, and AIIB will play a pivotal role in addressing the WSS infrastructure gap. To maximize economic and health benefits and provide for a safe environment, it is essential that the investments in water supply and sewage services are carried out as an integrated approach.

9. **Adopting lessons learned.** AIIB is drawing lessons learned from similar projects implemented by other Development Finance Institutions in Uzbekistan and AIIB projects in other countries and taking steps to reflect them in the project design, implementation arrangements, Project Delivery Strategy (PDS), risk assessment and mitigation measures. Based on those lessons, the Project has adopted a phased approach, including a prioritization of project areas according to technical readiness and needs, to expedite project preparation and implementation readiness and to manage the complexity of implementation. The lessons learned considered for

the project design and implementation arrangements are further described in Annex 2, paragraph 10.

Value addition to AIIB

10. The Project is of high priority to the Government of Uzbekistan (GoU); it is the AIIB's second standalone project in the water sector in Uzbekistan with further water and sanitation activities under preparation with Special Fund support in the Republic of Karakalpakstan and Khorezm regions. This project is an opportunity to consolidate AIIB's position as a partner of choice to assist the Government to modernize the water and sanitation sector in Uzbekistan.

11. As this is AIIB's second investment in the water sector in Uzbekistan and Central Asia Region, and includes technology-enabled infrastructure, the Project is a good opportunity for AIIB to gain experience in supporting technology-enabled infrastructure in the water and sanitation sector, address new challenges and find solutions, which can then be replicated in other countries having similar conditions. The close interface with the Swiss State Secretariat for Economic Affairs (SECO) further allows AIIB to explore future cooperation with bilateral development partners in mobilizing grant financing to support the Government to strengthen the capacity of water utilities.

Alignment with Country priorities and ongoing WSS reform

12. In October 2018, Uzbekistan adopted the UN Sustainable Development Goals 2030 (SDG 2030). The Project is expected to directly contribute to the achievement of SDG 6 to "ensure access to water and sanitation for all", in particular targets 6.1 "achieve universal and equitable access to safe and affordable drinking water for all" and 6.2 "achieve access to adequate and equitable sanitation and hygiene for all and end open defecation".

13. The National Development Strategy of Uzbekistan for 2017-2021 prioritizes investments in social infrastructure, specifically focusing on targeted programs to improve utility services and provide clean drinking water in urban and rural areas through construction of piped water supply systems. The GoU sets the following two long-term targets[2] for water supply and sanitation:

(i) Full coverage (from 64.8 percent in 2017 to 100 percent in 2035) of the population with access to piped water supply, and

(ii) Increased access (from 14 percent in 2017 to 42.5 percent in 2035) to the centralized sewerage network.

14. The Bukhara region, which covers approximately 39,400 km^2 and hosts a population of 1.9 million people, has been identified as a priority region in terms of developing water and sanitation infrastructure as well as tourism. The GoU is committed to increasing access to water supply and sewage services in the region to 100 percent, from the current levels of 52 percent for water supply. Centralized sewerage services are currently only accessible for the residents of

[2] Development Strategy Framework of the Republic of Uzbekistan by 2035.

Bukhara and Kagan cities with access rates of 55.6 percent and 27.6 percent respectively. The Project is strongly aligned with the GoU vision to provide water supply and sanitation to all in the Bukhara region.

Water sector reform

15. The GoU is implementing a comprehensive reform program to modernize the water supply and sanitation sector, strengthen its financial sustainability and improve water resource management. Key elements include the separation of the regulator and operator of WSS services, the consolidation of the responsibility for project preparation, implementation and operation in one organization, a national tariff reform, a national metering strategy, the modernization of water utilities and introduction of innovative technologies ("Digital Vodakanal"), and a systematic approach to the accounting and reporting of water usage. The roles and responsibilities in the sector and ongoing reform is described in detail in Annex 4. The below-described investment project supports the Government to implement key aspects of the comprehensive national reforms into the operations of the water utility of Bukahra region (e.g. smart meters, improved quality of service provision, improved financial performance through reduced technical and commercial water losses). The investments complement the reforms and are expected to improve access to services, service quality and strengthen the financial performance of BS.

C. Components

16. The GoU, through its Ministry of Investments and Foreign Trade, has requested AIIB to finance a comprehensive water supply and sanitation program covering investments in water supply and sewage systems in all districts of Bukhara region. The Bank and GoU have agreed on a phased approach to project preparation and implementation; each phase constitutes an individual project financed under a separate Sovereign-backed Loan to the Republic of Uzbekistan. The proposed project consists of the second phase of this larger governmental effort to extend water supply and sanitation services to all in the Bukhara region. The geographical prioritization of the phasing was undertaken by the Ministry of Housing and Communal Services (MHCS) together with the water company of Bukahra region based on selection criteria prepared in consultation with the Bank (see Annex 2, section D).

17. The proposed Phase II Project builds on the early project implementation experience of the Phase I Project and incorporates lessons to accelerate early implementation. With the Project Coordination Unit (PCU) already established under the Phase I Project and the anticipated use of advance procurement for key consulting services, the proposed Project is expected to achieve an accelerated early implementation progress as compared to the Phase I Project. The Phase I Project was approved by AIIB's Board of Directors in April 2020. The loan was signed on September, 2020 and was declared effective in November, 2020, with the first disbursement processed in December 2020. The implementation performance is assessed as satisfactory, despite the delays in implementation progress, considering the external factors (COVID-19 related impact, delayed Government approval, difficulty in attracting qualified experts to PCU and

water sector reform, see paragraph 46 for implementation progress and lessons for project delivery).

18. The proposed Phase II Project will comprise the following components (a detailed description of activities is presented in Annex 2, section B):

19. **Component 1 — Investment in Water Supply Infrastructure (USD160.7 million)**: Construction and rehabilitation of main water lines, well fields and intakes, associated electric facilities, water treatment plants, pumping stations, water reservoirs, distribution networks in the districts Gijduvon, Vobkent and Shofirkon, house connections, and equipment.

20. **Component 2 — Investment in Sewage Infrastructure (USD94.3 million):** Construction of centralized sewage systems in district centers consisting of house connections, collectors, pumping stations and mechanical-biological sewage treatment plants as well as discharge facilities, optionally tertiary treatment for reuse purposes. The sewage component covers the Gala-Osiyo district center of Bukhara district, Jondor, Shofirkon and Vobkent districts centers, the Yangibozor district center of Peshku district and Kogon city (with conveyance of waste water to Bukhara city sewage treatment plant) as well as the extension of the sewerage system of the city of Bukhara, including the sewerage network and pumping stations.

21. **Component 3 — Project Implementation & Management Support (USD13.9 million)**: Project management and implementation support will be provided to assist the Implementation Entity in ensuring seamless coordination, efficient implementation and compliance with the relevant policies and standards. The component includes incremental operating costs for the PCU. Based on the feasibility study (FS), the detailed design for phase II, including the required ES studies for site-specific activities, will be prepared through the consulting services under this component. As part of the detailed design, this component will support the client to translate the requirements of the national metering strategy to the local context and define an adapted approach to rolling out smart bulk meters for water production and distribution, which will be interconnected with the utility's IT systems, and cost-effective mechanical consumer meters. The consulting services will also include construction supervision during implementation and third-party ES monitoring.

22. The SECO is currently piloting capacity building activities in some district branches of BS. The Bank team is in a dialogue with SECO whether some of the measures that are currently piloted could be tailored to maximize synergies between the investments and the capacity building and allow BS to translate further reform objectives to the local circumstances. The envisaged areas of capacity building currently include Asset Management, Operation and Maintenance, Client Management and Complaint Handling, and Billing and Collection. In a second step, building on newly defined business processes, BS could be supported to digitize its business processes in line with the Government's vision "Digital Water Company" and realize further efficiency gains.

D. Cost and Financing Plan

23. The indicative project cost and financing plan for the Phase II Project is shown in Table 1 below. The total project cost is estimated at USD281.3 million, including a provision for capitalized fees and interest. The estimated cost for construction and services is USD268.9 million. The counterpart contribution by the GoU is USD32.9 million corresponding to 12 percent of the cost for construction and services.

24. **Loan size**. The proposed loan size is USD248.4 million, including capitalized fees and interest during the construction period.

Table 1: Indicative Project Cost and Financing Plan

Project Components	Cost (USD million)				
	AIIB	**Share**	**GoU**	**Share**	**Total**
Component 1: Investments for Water Supply Infrastructure	140.0	87%	20.7	13%	160.7
Component 2: Investments for Sewage Infrastructure	82.1	87%	12.2	13%	94.3
Component 3: Project Implementation and Management Support	13.9	100%	0.0	0%	13.9
Project Cost	236.0	88%	32.9	12%	268.9
Capitalized fees and interest during construction	12.4	100%	0.0	0%	12.4
Total Cost, including capitalized fees and interest	248.4	88%	32.9	12%	281.3

25. **Retro-active Financing.** The loan includes the possibility of retro-active financing for planned services, works and incremental costs for the PCU to enable the client to achieve implementation readiness earlier. Retroactive financing will be allowed up to 20 percent of the loan amount, for eligible costs incurred up to 12 months prior to loan signing.

26. **Financing Terms.** The loan will have a 25-year maturity, including a 5-year grace period, with capitalization of fees and interest during the grace period. The interest rate is determined in line with the standard terms for the Bank's Sovereign Backed Loans.

27. **Legal Arrangements.** The Bank will sign a Loan Agreement with the Republic of Uzbekistan (as the Borrower), and a Project Agreement with the Joint Stock Company Uzsuvtaminot (UZST), as the Project Implementing Entity (PIE). A Subsidiary Agreement ensuring that the proceeds of the loan will be made available for the Project will be signed by the Borrower and the PIE, the regional government of Bukhara region and water utility of Bukhara region.

E. Implementation Arrangements

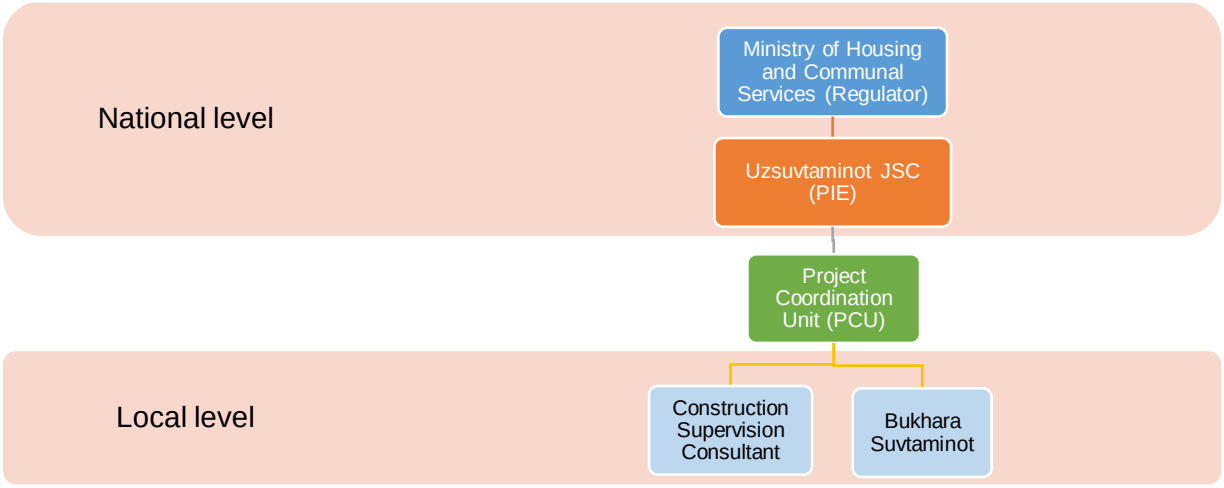
28. As per last year's reform decision[3], the UZST, a Government-owned national water company, is responsible for the project preparation of IFI- and Government-financed water projects in Uzbekistan, and serves as the main counterpart for the Bank. Previously, the Department of Cooperation with IFIs under the MHCS had led and concluded all aspects of project preparation, including the preparation of the FS, and ES instruments. After a review of the FS and other relevant project documents[4], the UZST has taken over the responsibility for the Project and has continued the process of Government project approval. The FS has been reviewed and approved by a scientific technical council, chaired by the Minister of MHCS and comprising representatives of the departments as well as external experts, that reviews and approves technical aspects of the project. The project is then submitted to other Ministries and eventually the Cabinet of Ministers for review and approval.

29. **Project Implementing Entity.** After formal Government approval of the project, the UZST will be responsible for the implementation of the project (PIE), including tendering for works, goods and services, construction monitoring and supervision, ensuring quality controls, approval of payment certificates for works contracts, authorizations for payment supervision and preparation and implementation of site-specific ES studies and management plans. Within the UZST, the PCU, which had been created to coordinate and oversee all implementation activities for the Phase I Project, will also be responsible for the project implementation of the Phase II Project.[5] To cope with the increased scope of work, the PCU will be strengthened with additional experts in the required disciplines for overseeing the Phase II Project implementation (effectiveness condition). The implementation arrangements are illustrated in Figure 1.

30. **Project Coordination Unit (PCU).** Within the PCU, the Project Coordinator has the overall responsibility for project implementation. The PCU for the Phase I Project has been established and staffed with key experts. For the Phase II Project, the PCU will be strengthened with additional experts in the requisite disciplines forming a sub-group dedicated to support the Phase II implementation. This sub-group for Phase II will comprise of one full-time Deputy Project Coordinator, and personnel with specialization in requisite disciplines such as water and sanitation engineering, procurement, financial management, and ES. The experts shall have experience in MDB-financed projects. The PCU experts will regularly participate in on-site supervision and monitoring. The PCU will be responsible for: (i) preparation of tender documents as per Project Delivery Strategy; (ii) selection of consultants, (iii) tendering of works, and (iv) oversight of all implementation activities, including but not limited to tendering, contract management, construction monitoring and supervision and ES implementation. The PCU members will be assisted by experienced consultants in their respective field of activity.

[3] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan Nr. 169 dated March 30, 2021.
[4] While the project cost, scope, and activities remained largely the same, the changed implementation arrangements had to be reflected in all relevant project documents, including the Feasibility Study and the ES documents.
[5] The PCU, including its personell, has been transferred from the Kommunkhizmat Agency under MHCS, the previous Project Implementing Entity under the Phase I Project as part of the reform. The Kommunkhizmat Agency under MHCS has been dissolved and all assets and liabilities have been transferred to UZST.

Figure 1: Project Implementation Arrangements



31. **Design and Supervision Consultants (DC, SC).** The DCs and SC (separate contracts respectively for design and supervision) will report to the PCU and will support the PCU in all aspects of the project management: the DCs support the PCU regarding the revision of the technical approach during the detailed design phase, quality check of technical solutions (fit for purpose), preparation of the detailed design and ES documents for site-specific activities and the SC supports the PCU in finalizing the tender documents, supporting the tender process and evaluation of tenders, implementation monitoring, including construction supervision, progress monitoring, quality control checks of the works, ensuring full compliance with ES implementation and periodical reporting. The Terms of Reference of the Consultants (separate for water supply and sewage) are currently under preparation by the UZST and will be reviewed by the Bank prior to the start of the selection process, which will be conducted according to the Bank's policy. To achieve early implementation progress, the PCU agreed to prepare the required documents to start the selection process for the Detailed Design after Board approval. The advance procurement for the consulting services is expected to run in parallel with the Government approval process prior to loan signing.

32. **Implementation period**. For this Project, the tendering of contracts will be staggered in four batches with a spacing of three months each to provide that the Project can be managed adequately by the PCU and will deliver high quality outputs and within time based on the agreed implementation arrangements. Each batch of contracts is estimated to be completed in four years. The Project is expected to be implemented over a five-year period from July 2022 to June 2027.

33. **Hand-over of assets for Operation and Maintenance (O&M) after completion**. After completion of construction of the water supply and sewage schemes under the supervision of the UZST, the systems will be handed over for Operation and Maintenance to the BS which is responsible for the provision of water supply and sanitation services to the end-users. During the initial operation period of two years, the contractor will provide assistance to strengthen the capacity of BS staff to adequately operate and maintain the new infrastructure, such as sewage treatment plants and pumping stations.

34. **Procurement**. The Bank's procurement policy and its associated procurement instructions for recipients for public sector apply to the Project. The PCU has prepared a Project Delivery Strategy (PDS) and a Procurement Plan (PP) in accordance with the Bank's requirements. These documents are considered acceptable to the Bank, however, it is anticipated that refinements will be agreed during the detailed design phase for the optimal number of contracts based on size, scope, risk, complexity and market context. During the preparation phase the experience of the PIE in similar projects funded by MDBs has been assessed in terms of capacity to cope with the expected workload. The PCU will be strengthened with additional procurement experts, as needed.

35. **Financial Management.** The existing PCU will be responsible for the overall project financial management. The PCU for Phase I has been staffed with a qualified Finance Manager and an Accountant-Cashier; the PCU will be strengthened with one additional finance staff for Phase II.

36. The PCU has adopted a Financial Management (FM) Manual acceptable to the Bank. The FM Manual describes the project financial management arrangements for Phase I and is also applicable to the project financial arrangements for Phase II. A cash basis accounting will be followed for project accounting and the PCU will maintain separate project accounts and have custody of supporting documents. As part of the government approval, the custom duties will be exempted by the GoU, and the VAT would be covered either by the PIE or the GoU as part of the counterparty contributions, which is a customary practice for other MDB operations. The financial progress of the Project will be reported on a quarterly basis through Interim Unaudited Financial Reports to be submitted within 45 days from the end of each quarter. The project audited financial statements for each year of project implementation will be submitted within six months from the fiscal year-end.

37. The disbursement of Loan proceeds will be made using the direct payment, reimbursement and advance methods. The Disbursement Letter will detail out a format for the authorized signatories, ceiling of DA, process of submitting claims and other terms and conditions of disbursements related to the Project. The disbursement forecast is reported in Table 2.

Table 2: Expected Disbursements (USD million)

Fiscal Year	2022	2023	2024	2025	2026	2027
Annual	2.4	11.7	37.4	93.6	84.3	19
Cumulative	2.4	14.1	51.5	145.1	229.4	248.4

38. **Monitoring and Evaluation.** Project progress and performance will be monitored based on the outcome indicators and intermediary outcome indicators, which are further defined in the Results Framework in Annex 1.

39. **AIIB's Implementation Support.** The Bank team will conduct regular supervision missions, the frequency of which will depend on implementation progress and complexity (at least two times per year). As long as travel is not possible due to the ongoing COVID-19 pandemic,

implementation support and supervision missions will be carried out virtually, including construction progress supervision using satellite imagery. Physical site visits may be carried out by one of the project teams' engineering experts, who is based in-country and has previous experience in implementation supervision.

3. Project Assessment

A. Technical

40. **Project Design.** The Project will use groundwater (from Damkhodja water supply system and Kukcha groundwater deposit in Duoba site, located in Gijduvon and Shofirkan districts) as sources. Source sustainability has been verified based on an existing hydrological assessment; a hydrogeological survey will be carried out during the detailed design phase to confirm this finding. The current concept design is based on a FS for the proposed water supply and sewage sub-projects approved by the GoU and is therefore sufficiently documented in technical and financial aspects. The design and construction of water supply and sewage infrastructure will comply with the national standards for safe drinking water and environmentally adequate discharge of effluent, which are considered to be adequate.

41. **Integrated solution.** For public health and environmental considerations and in line with national policies, the Project has been structured so that the investments in water supply will be accompanied by investments in sewage infrastructure to provide for an integrated solution. The targeted substantial increase in water supply will correspondingly lead to a proportionate increase in wastewater. At present, sewerage systems exist only in Bukhara and Kogan cities, no sewerage network exists in the targeted district centers, which are served by septic tanks or latrines. The construction of a sewerage network requires high capital investments, so that initially, sewerage will only be implemented in the district centers, since this is where wastewater increase is most significant. The GoU policy for sanitation services as a three-level-concept is presented in paragraph 69.

42. **Interface between activities.** The water supply activities can generally be considered on a stand-alone basis as they provide water to a defined supply area. The water supply activities of the Phase II Project have two distinct water sources (see Figure A2.1 in Annex 2): The new Jilvon well field will supply water for the Northern districts of Bukhara and the Damkhuja water facility, which is conveying water from the Samarkand region, will provide water for Gijduvon, Vobkent and Shofirkon districts in the North East of Bukhara region.

43. The sewage activities can also be considered on a stand-alone basis in each district with one exception: in Kogon, the waste water will be conveyed to Bukhara city to be treated in the plant of adjacent Bukhara district.

44. The recommended option to be assessed during detailed design is a potential use of treated wastewater for irrigation purposes or groundwater recharge to benefit at a maximum from these water resources. Additional treatment by filtration and disinfection would then be required to comply with the relevant standards.

45. The **technical project design** of the infrastructure components is summarized in Table 3. The details are presented in Annex 2 including lay-out schemes of the water supply and sanitation systems.

Table 3: Project Design Summary

No.	Main infrastructure components	Existing Facility (capacity/type)	Project Measure
1	**Component 1**: Water supply investments in Gijduvon, Shofirkon and Vobkent	Water production (from Damkhoja water system), treatment and distribution in North of Bukhara region.	Rehabilitation and extension of existing facilities (Damkhodja intake): 100,000 m^3/day Construction of new facilities (Jilvon wellfield): 25,000 m^3/day
2	**Component 2**: Sewage infrastructure in district centers of , Shofirkon, Vobkent, Yangibazar, Gala-Osiyo and Jandor as well as parts of Bukhara city and Kagan city.	-	Realization of district center sewage systems in prioritized regions to treat total sewage volume of 20,000 m^3/day
3	**Component 3**: Project Implementation & Management Support	-	Support during revision of technical approach of FS, detailed design, tendering, procurement, implementation supervision. Assistance during initial operation period. Assistance to PCU in project management.

N.B. The investment required for the extension of existing facilities of Damkhodja intake to 100,000 m^3/day will be provided by GoU under a separate project.

46. **Phase I Implementation Progress.** The Phase I Project was approved by the Bank's Board of Directors on April 3, 2020, the Government approval was accorded through a Resolution of the Cabinet of Ministers on August 12, 2020, subsequently the legal agreements have been signed on September 30, 2020, and the project became effective on November 26, 2020. The first disbursement has been made on December 10, 2020. Project implementation is progressing, albeit with delays. The delays are due to i) COVID-19 related impacts, ii) delay in Government approval of the project, iii) difficulty to attract qualified experts for the PCU (in particular for Procurement, Engineering), and iv) delays related to a water sector reform decision[6]. The Government decision on reforms in the water sector (see Annex 4) has unblocked critical required actions to advance project implementation. The UZST is committed to accelerate the required

[6] The delayed reform decision led to a stalemate in the first half of 2021 whereby critical decisions on procurement could not be taken as the procurement commission was not convening.

procurement activities to achieve early project implementation progress. The selection process for the consulting services for the detailed design is at the evaluation stage and the contract award is expected shortly. As a lesson learned from the Phase I Project, it was agreed to advance the procurement readiness to achieve early implementation progress. The UZST intends to onboard key additional experts to strengthen the PCU early to accelerate progress and agreed to finalize required documents to start the selection of the consulting services for the detailed design shortly after the Board consideration of the project. The advance procurement for the consulting services is expected to run in parallel with the Government approval process prior to loan signing.

47. **Climate Change Considerations.** The Project contributes to reducing the climate vulnerability of Bukhara region (see paragraph 9 in Annex 4) by improving access to resilient water and sewage services. The Project will adopt smart metering for production and distribution facilities that enables remote reading with automatic data transmission, which enables BS to run regular water loss reduction campaigns, and mechanical household meters, which in turn will help to promote water savings. Furthermore, the Project will reduce water losses through the replacement of obsolete water supply networks. The Project includes an optional tertiary treatment facilities for reuse purposes, which could contribute additional adaptation benefits. Together, these measures will reduce the pressure on scarce water resources. The Project also contributes to climate change mitigation by adopting energy efficient technologies for the planned water supply and sewage systems (i.e., water and wastewater, pumping stations). The climate co-benefit of the envisaged activities is estimated at 50 percent of the project cost. At detailed design stage, the planned water supply and sewage infrastructure will be further optimized considering climate change mitigation (through energy efficiency technical solutions) and climate change adaptation (e.g. water loss reduction, consideration of water reuse) and the climate co-benefit will be confirmed.

Operational sustainability. After the completion of the construction works and trial runs, the assets will be handed over to BS for operation and maintenance. The water supply and sanitation infrastructure will partly include facilities and technology that are new to BS and it has been agreed that the contractors will operate and maintain the main water and sewage facilities (sewage treatment plants, water works, pumping stations) for a period of two years after completion and end of the defect liability period. During this period, on-the-job training for staff of BS will be carried out. These activities will be coordinated with SECO's ongoing capacity building program for BS, which includes mainly improving the operation of the water supply systems by reducing water losses and implementing enhanced data collection and management information systems, including training. With the ongoing water sector reform (see Annex 4 paragraphs 16-21), the BS has been incorporated into the single national operator of water infrastructure UZST. This change in organization of the water sector is not expected to affect the operational sustainability, as the operation and maintenance will continue to be carried out on a regional level by BS, which forms part of the UZST.

Economic and Financial Analysis

48. **Project costs and benefits.** A cost-benefit analysis (CBA) was carried out to assess the economic viability of the Project, comparing "with-" and "without-project" scenarios. The project costs considered in the CBA include initial construction costs and annual O&M costs. The expected project benefits include: (a) cost savings from avoiding direct coping costs of purchase of water from water vendors at a premium price, and costs of private water storage; (b) savings from indirect coping costs (time saved from handling water); (c) health benefits (sick days avoided); (d) increase in supply duration and availability (incremental water); (e) cost savings from reduced technical losses and improved energy efficiency, and (f) benefits arising from access to wastewater services.

49. **Economic Analysis.** The Economic Internal Rate of Return (EIRR) was estimated at 22.2 percent and Economic Net Present Value (ENPV) at USD278.5 million based on a 9 percent discount rate. Given the strong socioeconomic benefits of the Project, the EIRR largely exceeds the social discount rate and the Project demonstrates strong economic viability. A sensitivity analysis of the EIRR and ENPV with respect to an increase in project costs by 20 percent, an increase in O&M costs by 20 percent and a 20 percent decrease in benefits as well as a combined worst-case scenario was carried out. The EIRR remains above 15 percent under all scenarios. The approach and detailed results are presented in Annex 3.

50. **Financial Analysis.** In April 2019, a new national tariff policy was introduced. The policy sets the mechanism for tariff calculation on a full cost-recovery basis inclusive of operating costs, maintenance costs, as well as the costs of financing and investment costs for the extension and modernization of the system. On August 29, 2020, the Bukhara region authorities approved new water and sewage tariffs calculated according to the new policy. As of November 1, 2020, the tariffs for water and sewage for domestic consumers were increased by 113 percent and 168 percent respectively compared to previous tariff approved in 2019. The adjusted water and sewage tariffs, as effective in February 2022, were considered in the analysis. The national tariff policy and tariff adjustments in Bukhara region demonstrate the GoU's commitment to improving the financial sustainability of the BS and strengthen its financial position.

51. A detailed financial analysis was carried out assessing the financial performance of BS and the financial impact of the Project on its financial position. Since the costs of the capital investments will be mainly borne by the GoU (60 percent) and BS (40 percent), the financial analysis focuses on the cost recovery in terms of the total production costs of the water supply and sewerage system. Achieving cost recovery of the total production costs is essential for financial sustainability over the life cycle of the assets. Further analysis of the Operating Cost Recovery Ratio (OCRR) and the Debt Service Coverage Ratio (DSCR) has been conducted. Over the expected 25 years tenure of the loan, the average OCRR is 110 percent (with-Project scenario including financing costs) and DSCR is 1.8x. The detailed analysis is reported in Annex 3.

52. **Tariff Affordability**. An affordability analysis was conducted to assess the impact of recent tariff increase on the households. The commonly used affordability benchmark is spending

on water and sewage of the retail customers to the average income level of the 20 percent lowest earners. Household expenditures for water of 3-5 percent of total monthly income are generally considered as affordable (World Bank, United Nations Development Programme). The analysis found that the tariffs remain affordable for the lowest quantile income level. The detailed analysis is reported in Annex 3.

B. Fiduciary and Governance

53. **Procurement.** A procurement capacity assessment has been carried out under Phase I, and was updated for the assessment of Phase II, confirming the outcome. The Bank's Procurement Policy and its associated Procurement Instructions for Recipients (PIR) apply to all contracts funded by the Bank and will be procured in accordance with Section II of the PIR. A PDS and a PP have been prepared by the Client and have been found acceptable to the Bank. It is currently envisaged that all works and supply contracts will be subject to prior review by the Bank and procured following the International Open Competitive Tendering method, without prequalification single stage and two envelopes. This is a method the PIE is very familiar with and it is acceptable to the Bank. The PIE has agreed to use AIIB's works procurement documents. The consultancy service contracts will be procured following the International Open Competitive Selection method. The PIE has agreed to use the Request for Proposal document recently developed by the Bank. The requirement that all contracts would be subject to prior review by the Bank might be revised during implementation based on the performance of the PCU and fitness for purpose of the agreed implementation arrangements. The final versions of the PDS and PP including a Contract Management Plan will be annexed by reference to the Loan Agreement.

54. The project team has worked closely with the relevant counterparts during the project preparation. The PCU will be strengthened with qualified procurement staff for Phase II implementation. During the inception phase of the Phase I Project, the procurement specialist underwent comprehensive training on procurement under AIIB policies, and contract management. Further training will be provided to the additional procurement staff for Phase II implementation including specific training on the use of FIDIC form of contract, as well as relevant staff from UZST and BS. It is important for the participation of all parties and stakeholders involved with implementation of the Project to provide for a common understanding.

55. **Financial Management.** The financial management assessment of Phase II is based on updates of the previous FM assessment, which was prepared for Phase I. In addition, the latest status of the established PCU has been reviewed as well. Based on the assessment, the financial management capacity is considered acceptable. The FM risk is considered Medium as the existing PCU has been fully established and will be strengthen further by additional finance staff for Phase II implementation.

56. **Staffing and Budgeting.** The PIE has established a separate PCU for AIIB-financed projects, including two finance experts: a Finance Manager and an Accountant-Cashier. In addition, the PCU will recruit one additional finance staff to strengthen the PCU for Phase II implementation. Training for the current FM staff of the PCU in the AIIB's FM requirements has

been conducted during the inception phase of the Phase I Project and further training will be conducted for the additional FM staff when available. The PCU will be responsible for the preparation of the annual project budgets based on the procurement plan, the project agreement, and the annual forecast of operating expenses.

57. **Funds Flow and Disbursement.** Under Phase I, the PCU has already opened a Designated Account. The PCU also opened a Project Account in UZS where Loan proceeds from the Designated Account will be transferred to pay for eligible operating expenditures in local currency. Separate designated accounts for USD and UZS payments will be opened for Phase II following the same arrangements as under Phase I. The disbursement of Loan proceeds will be made using the direct payment, reimbursement and advance methods.

58. **Accounting, Financial Reporting and Internal Controls.** The PIE uses the Chart of Accounts (CoA) developed by the MoF. The PIE and its divisions maintain operational and accounting records in accordance with the National Accounting Standards, as well as prepare accounting and statistical reports in the manner prescribed by applicable law. The PIE uses 1C automated accounting software for its accounting. The PCU has adopted the CoA but it also uses 1C accounting software for accounting and reporting purposes under Phase I, which was procured under Phase 1, and the same software will be used for Phase II. The accounting software will track both projects separately. The PCU will submit regular quarterly Interim Unaudited Financial Reports within 45 days from the end of each quarter. The PCU prepared a FM Manual, which was reviewed and accepted by the Bank. The FM Manual will also be used for Phase II after further required updates. The new PIE has an internal audit unit which is responsible for internal audit of financial and economic activity of the PIE and its member enterprises, inspection of their targeted use of property and funds, as well as control and evaluation of the work of the executive body of the PIE. There is no internal audit function at the PCU, but the project activities may be reviewed by the internal audit team of the PIE. The PIE and the PCU are also subject to the inspections by the state authorities as required by laws and regulations.

59. **Government counterpart contribution**. Similar to the Phase I Project, the counterpart contribution in the amount of USD32.9 million for payments of indirect taxes (like VAT and customs duties) is foreseen. During the negotiations, the Uzbekistan delegation provided clarifications on the mechanism of the allocation of the counterpart contribution. As part of the government approval, the custom duties will be exempted by the GoU, and the VAT would be covered either by the PIE or the GoU as part of the counterparty contributions, which is a customary practice for other MDB operations.

60. **External Audit.** The PIE is audited by external local auditors as per National Audit Standards. Nevertheless, as per practice in IFI-financed projects, the external audits of project financial statements prepared as per Cash-Based IPSAS for PIE's IFI-funded projects have been conducted by eligible audit firms in accordance with the International Standards on Auditing. The project annual financial statements audited by an eligible audit firm will be submitted within six months from the fiscal year-end.

61. **Financial Crime, Integrity and Counterparty Due Diligence / Know Your Counterparty.** Screening has been conducted by an external KYC service provider. Overall Financial Crime and Integrity Risk is rated as High given Uzbekistan's country risk, with the following findings: i) no sanctions are reported on the country, heads of state (President and Prime Minister), PIAs and its head and authorized signatory; ii) no adverse news has been reported on elected officials in connection to the Project.

62. **Institutional Capacity.** The UZST [7] and BS have previous experience in the implementation of MDB-financed projects and are familiar with MDBs procedures in Procurement and Financial Management.

63. **Reporting and Monitoring.** The PCU will be strengthened with requisite expertise to realize high quality monitoring and reporting on implementation progress. Designated experts in the consultants' team will assist the PCU during construction supervision and monitoring.

64. **AIIB's Policy on Prohibited Practices.** AIIB is committed to preventing fraud and corruption in its financing. It places the highest priority on ensuring that the projects it finances are implemented in strict compliance with the AIIB's Policy on Prohibited Practices (2016). Detailed requirements and reference to AIIB's Policy on Prohibited Practices have been specified in the Loan Agreement and the project tender documents. AIIB will monitor the work related to tender preparation and evaluation under Bank financing.

C. Environmental and Social

65. **Environmental and Social Policy, Standards and Categorization.** The Project has been prepared consistent with AIIB's Environmental and Social Policy (ESP), including the Environmental and Social Standards (ESSs), and Environmental and Social Exclusion List. ESS 1 (Environmental and Social Assessment and Management) and ESS 2 (Involuntary Resettlement) are applicable. The Project is assigned Category A, in accordance with the ESP due to large-scale construction activities spread over a vast geographical area that may have substantial environmental and social impacts.

66. A phased approach has been adopted and the activities will only be specified (e.g. exact locations) as detailed designs for different project components are carried out during the implementation stage of the Project. Therefore, a framework approach has been applied in accordance with AIIB's ESP, wherein an Environmental and Social Management Planning Framework (ESMPF) has been developed, which includes a generic Environmental and Social Management Plan (ESMP) and a Resettlement Planning Framework (RPF). The ESMPF covers the scope of both Phase I and Phase II Projects. The ESMPF elaborates the regulatory framework under which the Project will be implemented, reviews the baseline in the Project region, identifies ES risks and impacts corresponding to implementation of different project components, defines

[7] Given that the PCUs, including their personel, have been transferred from the Kommunkhizmat Agency, which was previously responsible for the implementation of IFI-financed projects, the UZST personel has previous experience with IFI-financed projects even though this responsibility has been newly assigned to UZST as part of the most recent reform decision (see Annex 5).

the screening process and categorization of site-specific activities, and establishes institutional arrangements for the management of ES impacts and risks of this Project. The RPF sets out policies and procedures to address potential impacts of site-specific activities due to economic displacement and loss of livelihood. The ESMPF and RPF also provide the methodology and procedures for ES studies of the site-specific activities. The ESMPF prescribes that Environmental and Social Impact Assessments (ESIAs) including ESMPs shall be prepared for site-specific activities that are proportional to the risks and impacts associated with the activities. A Resettlement Plan (RP) will be prepared where it is applicable. The ESMPF also provides the Terms of Reference for site-specific ES studies, i.e., ESIA, ESMP and RP. The Borrower will take measures forthe ESMP for each activity to be incorporated into the agreement with the contractor and translated to the site-specific ESMP.

67. **Environmental Aspects.** The Project is expected to generate benefits in terms of improving the efficiency of water use and enhancing water quality and public health security in the Bukhara region. According to the analysis in the FS, the supply of groundwater can support the water consumption in targeted districts. To support groundwater sustainability, the detailed design shall include further survey to confirm groundwater sustainability, and regular monitoring of groundwater level will be required during the O&M. Close coordination and information sharing will be maintained with the authority of Damkhuja water facility to provide for a sustainable water supply conveyed from Samarkand. The pressure on water resources could be further eased if tertiary treatment facilities are adopted for sewage treatment plants for water reuse purposes; this option will be assessed as site-specific designs are prepared. The temporary negative impacts during construction of the water supply and sewage activities will be related to air pollution, noise, water pollution, disposal of wastes (including hazardous waste in the form of used asbestos cement pipes), traffic disruption, access restriction for the community, and disturbance to the community due to influx of workers. The construction activities could affect cultural heritage in Bukhara City if not effectively managed and monitored.

68. During the operation phase, the sewage discharge will increase due to the increase of water supply and water consumption in targeted districts. According to the Government’s policy, a three-pronged approach has been adopted to address sanitation and wastewater management. Firstly, under the Phase I and Phase II Projects, at the district level, the sewerage system will be constructed for all district centers. However, the centralized sewage system will not cover rural areas. At the second level, the sewage in rural areas will be treated by decentralized facilities, i.e. septic tanks or cesspits at households. The residual fecal sludge will be emptied on a regular basis through private or communal service providers. Third, this Phase II Project will finance expansion of the sewage network at the Bukhara city level. The negative impacts of the operation of the Project will include the discharge of effluent from sewage treatment plants in urban areas into surface waterbodies, generation of wastes especially sludge from sewage treatment plants and water treatment plant, air pollution (especially odor), noise from pumps and other facilities and potential contamination on soil and soil erosion. The sensitive receptors near the proposed facilities might be affected by these negative environmental impacts. The sewage treatment plants will comply with the national standards for discharge of effluent, which are considered to be

adequate. The detailed design will take into account the receiving waterbodies and specify the standards for effluent.

69. The generic ESMP in the ESMPF proposes mitigation measures to address the potential negative ES impacts, labor and occupational health and safety (OHS) issues. It provides guidance on the development of ESMP for each type of site-specific activity and presents templates of an Asbestos Management Plan and a Traffic Management Plan. The Project will support the replacement of old asbestos cement pipes and their proper handling, transport and disposal under the Asbestos Management Plan which includes special provisions for heath and safety of workers and the community. The use of new asbestos cement pipes under the Project will not be allowed through appropriate provisions in the tender documents.

70. Field based cultural heritage surveys will be conducted as part of preparation and implementation of ESIAs and ESMPs. Use will also be made of Chance Find Procedures and other mitigation measures by contractors to address any possible impacts involving cultural heritage in Bukhara region, in accordance with the ESP's requirements. The ESMPF also regulates specific cultural heritage management plans that should be prepared at the site-specific level.

71. **Climate Change Risks and Opportunities.** Uzbekistan is among the countries most vulnerable to climate change. The rates of warming are higher than the average rates observed on a global scale. The Bukhara region is considered a medium vulnerable region in the country. Climate change has caused low precipitation and high temperatures in Bukhara region, which result in heat waves, water deficits and droughts. This Project aims to improve the efficiency of water use and sustainable water management in the Bukhara region in two ways. First, the components of the Project will be designed in an effective way (pumps, pipelines, etc.) to reduce water losses; second, the beneficiaries will be incentivized to economize water due to revised and enforced tariffs. These measures are expected to help the communities in this region to better adapt to the scarcity of water resources due to climate change. In addition, the water scarcity could be relieved if tertiary treatment is applied in sewage treatment plants and the treated effluent is reused. This option will be assessed during detailed design. Measures to improve energy efficiency of the water supply and sanitation facilities in Bukhara region are included in the Project (mainly through replacement of pumps and treatment plants with energy efficient options and designs), which will also contribute to reducing greenhouse gas emissions during operation.

72. **Social Aspects.** Availability of clean water and improved environmental sanitation is expected to bring material improvements in the standard of living and in public health status at the community level. Household water supply and sewerage connections will support substantial social and economic productivity. The positive impacts due to improved water and sanitation will be supplemented by awareness raising of the community on i) responsible consumption given that the resources are finite, ii) appropriate environmental, domestic and personal hygiene for better health outcomes, iii) appreciation of the fact that water is an economic good and for continued services sustainability warrants financial contributions from the user community, and iv) better management of septic tanks in rural communities. During the implementation of the

Project, the PCU and BS will carry out a campaign and engage with the communities to address these issues appropriately.

73. In Uzbekistan, land is state property. During the due diligence conducted for some proposed sites, it has been observed that people without title are carrying out agricultural activities or have constructed structures on the Government land. Project activities may therefore cause physical and/or economic displacement of non-title holders. The locations of proposed new facilities will be assessed during the process of detailed design and efforts will be made to avoid or minimize the physical and economic displacement. In case displacement cannot be avoided, a Resettlement Policy Framework (RPF) has been formulated to address such impacts and an entitlement matrix has also been developed. The RPF provides guidance on the development of site-specific RPs.

74. **Gender and Disability Aspects**. Women, especially in rural areas in Bukhara region, bear the responsibility of collection of water which takes considerable time.[8] Children, particularly girls, are most vulnerable to unclean water and water-borne diseases. Thus, women and children will be specific beneficiaries of this Project due to household connection of clean and safe water supply. Time saved from getting and handling water could also be allocated for other productive activities. Similarly, people with restricted mobility endure a higher burden of inadequate water supply and sanitation. It is therefore expected that the improved access to water supply and sanitation infrastructure benefits them disproportionally. A survey has been carried out to prepare a Gender Action Plan (GAP), which included consultations with women to understand their concerns on water/ health related problems and aspirations from the Project. The tentative GAP proposes a series of actions to enable a proactive role for women participating in design, implementation and operation of the Project. The GAP will be updated during the implementation of this project to capture participation of and project benefits to women.

75. **Community, and Occupational Health and Safety (OHS), Labor and Employment Conditions**. The generic ESMP includes measures to address OHS issues during both construction and operation phases of this Project. The ESMPF also includes an Asbestos Management Plan, which will be included in the ESMP for rehabilitation activities involving asbestos and be followed by the workers of the contractors. In particular, the ESIAs for site-specific activities like sewerage pipelines and sewage treatment plants will assess the OHS risks during the O&M, review the BS's policy related to OHS and establish mechanisms for addressing OHS aspects. In addition, experiences from implementation of Phase I Project will also be integrated into Phase II Project implementation. The site-specific ESMPs will include physical accessibility measures to avoid and limit adverse risks and impacts on project-affected people with restricted mobility during civil works.

76. The site-specific ESMPs will include Workers Camp Management Plans, if applicable, to address the potential impacts of labor influx. In addition, a Code of Conduct for workers will be

[8] A 2015 World Bank Study estimates that 1.5 times as many women as men participate in collection of water. While a 2018 ADB Study estimates women (and children) spend on average 22 person-hours per month collecting water as well as additional time boiling water.

incorporated into the bidding documents and the contracts with the contractors. Appropriate measures scaled to the potential risk of gender-based violence, sexual exploitation, abuse, and harassment will also be prepared and incorporated in the contracts.

77. **Forced labor.** The Uzbek national labor legislation strictly prohibits the use of forced labor. The ESMPF articulates that forced labor is illegal under Uzbek legislation, not allowed under the ESP of AIIB and a violation of the generic ESMP. Contractors will be selected through International Open Competitive Tendering, whereby the tender documents include comprehensive and internationally accepted provisions on labor including provisions on forbidding forced labor. The same will be included in the construction contracts. If any contractor is identified as using forced labor, the PCU is required to report the case to the Ministry of Employment and Labor Relations for action, according to national legislation. In addition, the PCU has the right to suspend work or payments, as provided for and in accordance with modalities described in the civil works contract, if the contractor is in breach of any of its obligations to implement the ESMP. This will also be addressed through training for PCU, SC and contractors.

78. **Stakeholder Engagement, Consultation and Information Disclosure.** Stakeholder consultations were carried out during the preparation of the ESMPF in 2019 in the form of focus group discussions, interviews and workshops that covered the scope of both the Phase I and II projects. The ESMPF also sets out procedures and requirements on stakeholder engagement, public consultation and information disclosure at site-specific level during the implementation of this Project. The ESMPF has been disclosed in English on the website of MHCS (now UZST[9]) since Jan 31, 2020. The ESMPF in Russian[10] and the Executive Summary in Uzbek[11] are also disclosed on the website of UZST. The ES documentation is also available on AIIB website[12]. Hardcopies of the ESMPF in the two local languages are also available in the project region. A workshop was held on March 6, 2020 after the draft ESMPF was disclosed at the conference hall of the BS. Representatives from the women's committee, youth union, relevant Government agencies and other stakeholders attended the workshop. The ESMPF was updated to incorporate the stakeholders' feedback received at the workshop and re-disclosed on the same websites and hardcopies at the same places.

79. **Project-level Grievance Redress Mechanisms** The ESMPF proposes a two-level Grievance Redress Mechanism (GRM) at the field and PCU levels respectively for Project-affected People (PAP) in accordance with the requirements of the Bank's ESP. The same GRM is applicable for both Phase I and II projects. The PCU-level GRM has been established during the implementation of Phase I Project. The field-level GRM will be established when the SCs and Contractors for respective phases are onboard. A separate GRM for workers has also been included in the ESMPF to deal exclusively with those complaints that involve workers for construction activities.

[9] https://uzsuv.uz/en/ifireports
[10] https://uzsuv.uz/ru/ifireports
[11] https://uzsuv.uz/uz/ifireports
[12] https://www.aiib.org/en/projects/details/2019/proposed/Uzbekistan-Bukhara-Region-Water-Supply-and-Sewerage-Phase-II.html

80. **AIIB Independent Accountability Mechanism.** The Project-affected People's Mechanism (PPM) has been established by the Bank to provide an opportunity for an independent and impartial review of submissions from Project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement its ESP in situations when their concerns cannot be addressed satisfactorily through the Project-level GRMs or the processes of the Bank's Management. Information on AIIB's PPM is available at: https://www.aiib.org/en/policies-strategies/operational-policies/policy-on-the-project-affected-mechanism.html.

81. **Monitoring and supervision arrangements.** The Project's ES issues will be monitored by the ES professionals engaged by PCU and the SC. Third-party monitoring consultants will be engaged to monitor the implementation of the ESMPs and RPs. The responsibilities and mechanism of reporting by the contractors, SC and PCU are defined in the ESMPF. The third-party consultants and AIIB will monitor the Project on a biannual basis. The Bank's ES Specialists will leverage the use of ultra-high-resolution satellite imagery for remote supervision and carry out field-based ES monitoring missions when conditions allow.

D. Operational Policy on International Relations

International Waterways

82. **Phase I Project.** The AIIB Operational Policy on International Relations (OP on IR) applies to the Phase I Project, because it involves the Amu Darya River, an International Waterway, as defined in paragraph 2.1(b) of the OP on IR. Notification to these riparian states of the proposed project's details is required under the OP on IR unless one of the exceptions to notification specified in the OP on IR applies. Since the Phase I Project is expected to have minimal or no effect on any of the other riparians, it was established that notification for the Phase I Project is not required under the exception in paragraph 3.3(c)(i) of the OP on IR.

83. **Phase II Project.** The proposed Phase II Project will rely on groundwater sources from the Damkhodja water supply system and Kukcha groundwater aquifer in the Duoba site, located in Gijduvon and Shofirkan districts (see Section 3.A and Annex 2 for detailed description). As no International Waterways are involved or affected, the OP on IR has not been applied for the Phase II Project.

E. Risks and Mitigation Measures

84. Based on the assessment, discussions with the MHCS, UZST, and BS, other key stakeholders and review of available documents, the Bank has assigned an overall "High" risk rating to the Project.

Table 4: Summary of Risks and Mitigating Measures

Risk Description	Assessment Ratings (High, Medium, Low)	Mitigation Measures
Political and Governance risk The GoU has launched an ambitious reform program, including major institutional reforms, which have led to the creation of new institutions and changes in roles and responsibilities in the Government. Delay in reform decisions and their reflection in the implementation arrangements has led to delay in the approval of this project. As the reform process is still ongoing, changing institutional responsibilities can further delay project approval and/or implementation.	High	The project team has assessed the reform decisions and has reflected the changed responsibilities in the sector in the implementation arrangements of the Project. The project team has been monitoring the ongoing reform process closely and maintains a dialogue with other stakeholders in Uzbekistan to stay abreast of recent developments and evaluate their implications. A number of covenants have been designed to provide that the Bank will be consulted on relevant changes and the implementation arrangements are ringfenced from potential future institutional changes.
Sector Policies The GoU has adopted a new tariff policy and a metering strategy, which is currently being rolled-out. Initial tariff adjustments and roll-out of metering demonstrate the Government's commitment to carry through with the planned reforms. A partial implementation or delay in implementation of the tariff policy and/or the development of the metering strategy may affect the financial sustainability of BS.	Medium	The project team has been monitoring the ongoing reform process in the water sector closely and is in dialogue with other water sector stakeholders in Uzbekistan to stay abreast of recent developments and evaluate the implications. The proposed Project supports the roll-out of smart meters for production facilities and mechanical meters for residential users.
Technical risk <u>Construction</u> The WSS project components in Bukhara City – and to a lesser extent in district centers – include interventions in dense parts of	Medium	Assessments to determine if special construction methods, e.g. micro-tunneling through experienced contractor, are feasible.

Risk Description	Assessment Ratings (High, Medium, Low)	Mitigation Measures
the city, including rehabilitating and expanding networks, including house connections thus leading to limited mobility and obstruction for the population, businessmen and tourists.		Sensitization measures with stakeholders engaging respected community leaders.
<u>O&M</u> Inadequate O&M due to low technical and managerial capacity of BS in maintaining and operating water supply and sanitation infrastructure.	Medium	During final design, the most efficient and manageable technologies shall be selected to optimize technical and financial efforts required to run the WSS systems. Initial period of operation and maintenance with on-the-job training for utility staff is included as responsibility of the contractors.
<u>Household connections</u> Due to availability of alternative service options (e.g. alternative but unsafe water sources, existing septic tanks, low awareness) households may choose not to connect to the piped water supply system or sewerage network.	Low	The Project will provide house connection outside the house plus the material for inhouse installation. Additional sensitization measures by the contractors for the households to be aware of hygiene aspects.
Implementation Limited capacity of implementation entity may lead to difficulties in coordination, control and supervision of services and works activities as well as proper reporting to the Government and Bank.	High	Strengthening of the existing PCU with specific experts, e.g. for engineering, E&S standards, and procurement will reduce this risk significantly.
Environmental and Social Insufficient capacity for development of ES documents for site-specific activities and implementation of ESMPs and RPs.	High	PCU will be strengthened with one additional ES expert to supervise the preparation of ES documentation, and to address ES issues in the field,

Risk Description	Assessment Ratings (High, Medium, Low)	Mitigation Measures
		supported by the SC and third-party monitoring consultants. Third-party ES monitoring during implementation will be carried out semi-annually. AIIB ES specialists will conduct remote and field-based reviews, as appropriate.
Procurement Limited capacities of relevant institutions in procurement operations and contract management due to many MDB-financed projects may lead to delays.	Medium	Strengthening of the existing PCU including procurement expert. Adequate staffing for procurement for internal control, documentation, management of contracts, payments and complaints. Additional training on procurement management and FIDIC will be arranged. Adequate definition of lots to attract experienced contractors without overstraining their capacities.
FM The PCU may delay recruitment of an additional finance staff. This may lead to shortcomings in financial reporting and compliance issues.	Medium	The recruitment of additional project staff is set as a condition of Project Effectiveness.
Financial sustainability Inefficient business practices in conjunction with low tariffs may lead to low financial sustainability.	Medium	Service improvement and awareness generation to increase willingness to pay for better service. Smart metering for production and mechanical meters for residential clients will enable BS to reduce technical and commercial losses.

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Annex 1: Results Monitoring Framework

Project Objective:	The Project Objective is to provide access to safely managed water and sanitation services in the Bukhara region and strengthen the operational performance of the water utility of Bukhara region.									
Indicator Name	**Unit**	**Baseline** Data Year: 2022	**Cumulative Target Values**					**End Target**	**Frequency**	**Responsibility**
			YR1	**YR2**	**YR3**	**YR4**	**YR5**			
Project Objective Indicators:										
People provided with improved access to safely managed water supply services (gender-disaggregated)	No. (1,000)	0	0	0	200	400	660	660	Annually	UZST
People provided with improved access to safely managed sanitation services (gender-disaggregated)	No. (1,000)	0	0	0	150	300	560	560	Annually	UZST
Operation cost recovery ratio	No.	< 1	< 1	< 1	< 1	< 1	> 1	> 1	Annually	UZST

*OFFICIAL USE ONLY

Intermediate Result Indicators:

Indicator Name	Unit	Baseline Data Year: 2022	Cumulative Target Values					End Target	Frequency	Responsibility
			YR1	YR2	YR3	YR4	YR5			
Intermediate Results Indicators:										
Water Supply Activities										
Length of water supply pipelines constructed	km	0	40	120	350	570	770	770	Annually	UZST
Length of water supply pipelines rehabilitated	km	0	25	70	210	350	470	470	Annually	UZST
Number of water intake structures constructed/rehabilitated	No.	0	0	1	4	7	9	9	Annually	UZST
Number of Water Distribution Units constructed and rehabilitated	No.	0	0	3	10	18	25	25	Annually	UZST
Increase in the volume of water production capacity	m^3 (1,000)	0	0	100	100	125	125	125	Annually	UZST
Sewage Activities										
Length of sewage networks constructed	km	0	60	200	580	960	1,280	1,280	Annually	UZST
Number of sewage pumping stations constructed	No.	0	1	3	8	14	18	18	Annually	UZST
Number of sewage treatment plants constructed	No.	0	0	0	1	2	3	3	Annually	UZST

Annex 2: Detailed Project Description

A. Project Objective

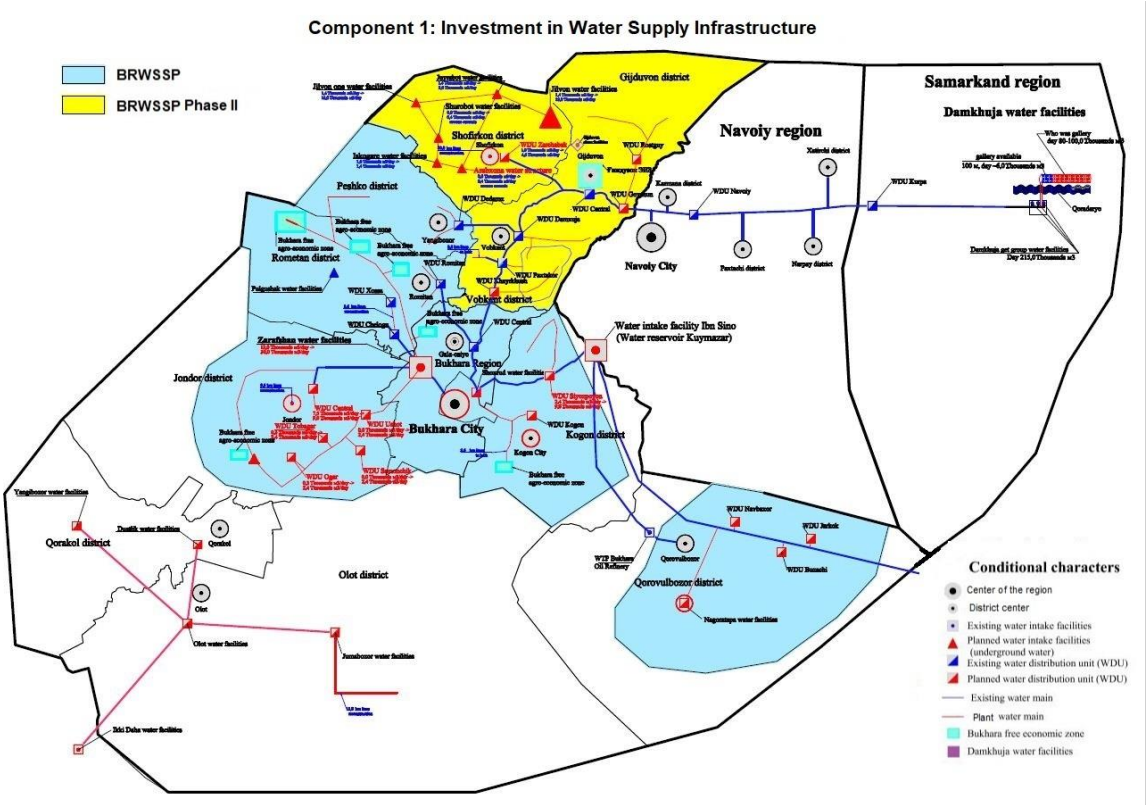
1. The Project Objective is to provide access to safely managed water and sanitation services in the Bukhara region and strengthen the operational performance of the water utility of Bukhara region. The Phase II Project is expected to improve water supply and sanitation services for about 1.2 million people.

B. Project Description and Components

2. This Project is composed of three components:

Component 1 - **Investment in Water Supply Infrastructure (USD160.7 million).** Construction and rehabilitation of main water lines, well fields and intakes, associated electric facilities, water treatment plants, pumping stations, water reservoirs, distribution networks including house connections and equipment. Phase I has included priority area 1; Phase II will now include priority area 2, which includes the districts Gijduvon, Vobkent and Shofirkon. In addition, this component includes the installation of meters for water production, distribution and consumption for the Phase I and Phase II Project areas in line with the recently developed National Metering Strategy. A detailed geographical representation is illustrated in Figure A2.1 below.

Figure A2.1: Planned Investments in Water Supply System in the Bukhara region



The water supply activities include mainly construction and rehabilitation of intakes, wellfield, main water lines, distribution networks incl. house connections, power transmission lines and pumping stations. The activities can be grouped geographically as follows:

Provision of clean drinking water to the population of the northern and eastern parts of Vobkent, Gijduvon and Shofirkon districts of the Bukhara region while increasing the capacity of the main resource facility "Damkhuja".

Rehabilitation of water supply systems in the northern and western parts of the Shofirkon district as well as the northern part of the Gijduvon district through the construction and rehabilitation of the water intake structure “Jilvon” in the Shofirkon district.

These measures will include the following activities:

Reconstruction and construction of Water Distribution Units (WDUs) and pumping stations for water intake from Damkhoja water conduit to provide rural population of Vobkent district and central and southern parts of Gijduvon and Shafirkan districts;

Construction of underground water intake (9 sites) at Kukcha groundwater field to provide the majority of the population of Gijduvon and Shafirkan districts with drinking water;

Reconstruction and construction of WDUs in Gijduvon and Shafirkan districts;

Construction and reconstruction of water conduits, main and distribution networks in Vabkent, Gijduvon and Shafirkan districts;

Construction of house connections with the installation of meters in Vobkent, Gijduvon and Shofirkan districts.

The provisional quantities are as follows:

(i) Vobkent District:

reconstruction of WDU – 5 pcs;

reconstruction of pumping stations of water intake (at Damkhoja water intake) – 2 pcs;

construction of new WDU – 4 pcs;

reconstruction of water conduits and water supply networks – 103 km;

construction of water conduits and water supply networks – 257 km;

construction of house connections – 1,060 km;

installation of meters – 35,360 pcs;

construction of water mains to WDU – 81 km;

construction of transmission mains to populated areas – 143 km;

construction of main waterways – 50 km;

construction of repair facilities in Vobkent – 1 pc.

(ii) Gijduvon district:

construction of water intake with WDU – 2 pcs;

construction of a water intake with a buster pumping unit – 3 pcs;

reconstruction of WDU – 5 pcs;

reconstruction of water conduits and water supply networks – 68 km;

construction of WDU – 3 pcs;

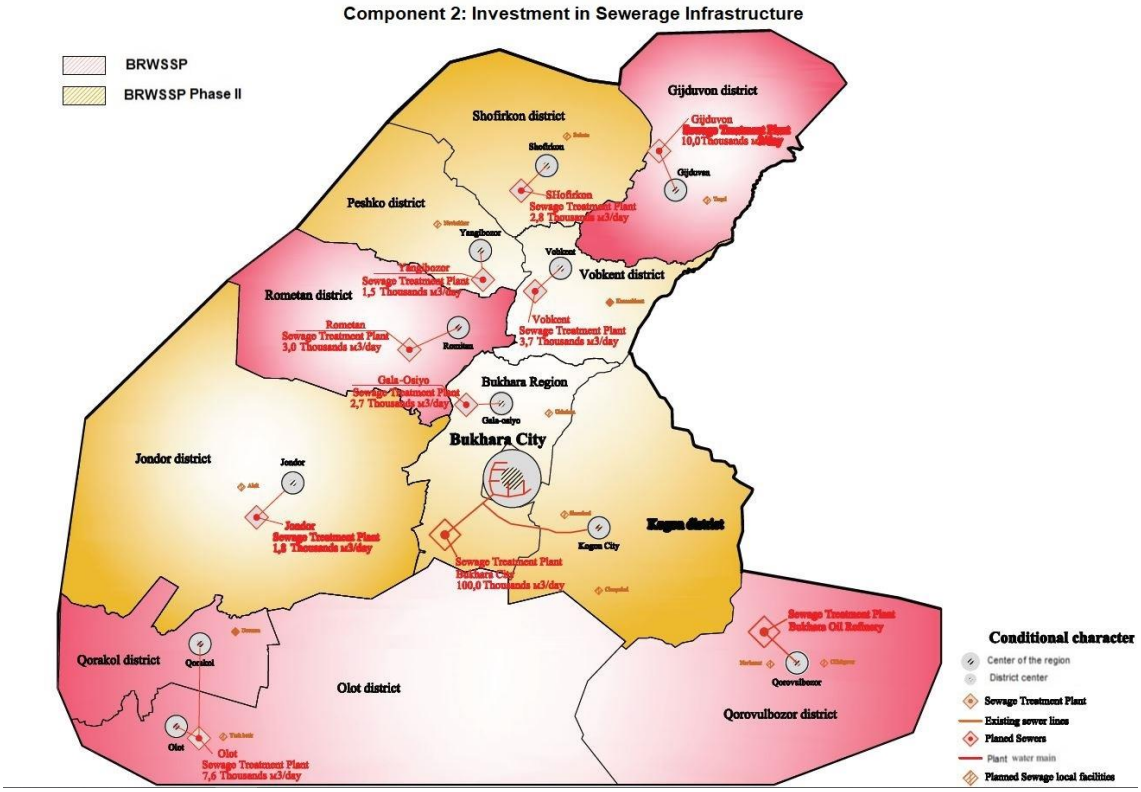
construction of water supply networks – 823 km;
construction of house connections – 1,205 km;
installation of meters – 40,150 pcs;
construction of water mains – 220 km.

(iii) Shofirkan district:

construction of water intake with the WDU – 3 pcs;
construction of a water intake with a booster pump unit – 1 pc;
reconstruction of WDU – 2 pcs;
reconstruction of water supply networks – 261 km;
construction of WDU – 7 pcs;
construction of house connections – 429 km;
installation of meters – 14,300 pcs;
construction of water supply networks – 290 km;
construction of main networks – 175 km;
reconstruction of main networks – 15 km;
construction of transmission mains to populated areas – 4 km;
new pipeline construction – 2 km;
construction of main waterways – 41 km.

Component 2 - Investment in Sewage Infrastructure (USD94.3 million). Implementation of centralized sewage systems in district centers consisting of house connections, collectors, pumping stations and mechanical-biological sewage treatment plants as well as discharge facilities, optionally tertiary treatment for reuse purposes. Phase I has included priority area 1; Phase II will now include priority area 2. The Phase II Project covers the Gala-Osiyo district center of Bukhara district, Jondor, Shofirkon and Vobkent districts centers, the Yangibozor district center of Peshku district and Kogon city (with conveyance of waste water to Bukhara City sewage treatment plant) as well as the extension of the sewerage system of the city of Bukhara, including the sewerage network and pumping stations. A detailed geographical representation is illustrated in Figure A2.2 below.

Figure A2.2: Planned Investments in Sewage System in the Bukhara region



The sewage activities. Each priority activity consists of one sewage system for each of the 11 districts plus Bukhara city. The capacity of each system is also indicated in this figure. The activities include mainly the implementation of a centralized sewage system in each district center consisting of house connections, collectors, pumping stations and mechanical-biological sewage treatment plants as well as discharge facilities and optional tertiary treatment for reuse purposes.

Bukhara city: extension with sewage networks with length of 127,617 m and 4 sewage pumping station, based on an existing FS and final design, to complete the existing sewage system. Construction of 18,500 house connections with a total length of 370,000 m.

Kogon city: construction of 91,602 m new sewage network, 6 new pumping stations, rehabilitation of 2 existing pumping stations and conveyance to Bukhara City sewage treatment plant. Construction of 10,375 house connections with total length of 207,500 m.

Bukhara district: construction of 71,862 m sewage networks, 11 sewage pumping station and a sewage treatment plant with capacity of 4,624 m^3/day in Gala-Osiyo. Construction of 7,750 house connections with total length of 155,000 m.

Jondor district: construction of 82,544 m sewage networks, 16 sewage pumping station and sewage treatment plant with capacity of 3,243 m^3/day. Construction of 4,500 house connections with total length of 90,000 m.

Shofirkon district: construction of 74,313 m sewage networks, 13 sewage pumping station and sewage treatment plant with capacity of 4,099 m^3/day. Construction of 6,750 house connections with total length of 135,000 m.

Vobkent districts: construction of 97,953 m sewage networks, 10 sewage pumping station and sewage treatment plant with capacity of 4,475 m^3/day . Construction of 7,500 house connections with total length of 150,000 m.

Peshku district: construction of 78,004 m sewage networks, 15 sewage pumping station and sewage treatment plant with capacity of 1,299 m^3/day in Yangibozor. Costruction of 2,375 house connections with total length of 47,500 m.

In addition, equipment required of operation will be purchased in each phase: excavators, hydrodynamic cleaning devices for sewers and sewer waste removers.

Component 3 - Project Implementation and Management Support (USD13.9 million). Project management and implementation support by consultants will be provided in the proposed Phase II Project to assist the PCU in ensuring seamless coordination, efficient implementation and compliance with the relevant policies and standards. Based on the FS, the detailed design and tender documents for the Project will be prepared through the consulting services, which will also cover the construction supervision. As part of the detailed design, this component will support the client to translate the requirements of the National Metering Strategy to the local context and define an adapted approach to rolling out smart bulk meters for water production and distribution, which will be interconnected with the utility's IT systems, and cost-effective mechanical consumer meters. The consulting services will also include construction supervision during implementation and third-party ES monitoring. Incremental operating costs of the PCU are included in this component.

C. Implementation arrangements

3. With the Cabinet of Ministers Resolution of March 30, 2021, the GoU has tasked the UZST to lead and coordinate all aspects of project preparation and implementation of IFI-financed projects (see Annex 4). UZST is henceforth the main counterpart for the Bank for the project preparation and implementation.

4. Previously, the Department of Cooperation with IFIs under the Ministry of Housing and Communal Services (MHCS) had led and concluded all aspects of project preparation, including the preparation of the FS, and ES instruments. For project preparation, MHCS had designated a team, with staff borrowed from different parts of the Ministry, in the respective areas of specialization, including engineering, ES, and procurement, and with previous experience working with MDBs. After a review of the FS and other relevant project documents, the UZST has taken over the responsibility for the Project and has continued the Government approval process. The FS has been approved by the sectoral scientific technical council, chaired by the Minister of MHCS and comprising representatives of the departments as well as external experts. After the subsequent approval by the MoF and MIFT, the legal documentation have been negotiated and the Project will be submitted to other relevant Ministries and eventually to the Cabinet of Ministers for the final Government approval.

5. **Project Implementing Entity (PIE).** After formal Government approval of the Project, the UZST will be responsible for the implementation of the project (PIE), including tendering for works,

goods and services, construction monitoring and supervision, ensuring quality controls, approval of payment certificates for works contracts, authorizations for payment supervision and ES implementation. The PCU, which has been created for the Phase I Project, has been transferred to the UZST, including its personnel. The PCU will also coordinate and oversee all implementation activities for the Phase II Project.

6. **Project Coordination Unit (PCU).** Within the PCU, the Project Coordinator has the overall responsibility for project implementation. The PCU for the Phase I Project has been established and fully staffed with key experts. For the Phase II Project, the PCU will be strengthened with additional experts in the requisite disciplines forming designated a sub-group dedicated to support the Phase II implementation. This sub-group for Phase II will comprise of one full-time Deputy Project Coordinator, and personnel with specialization in requisite disciplines such as water and sanitation engineering, procurement, financial management, and ES. The experts shall have experience in MDB-finance projects. The PCU experts will regularly participate in on-site supervision and monitoring. The PCU will be responsible for: (a) preparation of tender documents as per Project Delivery Strategy; (b) selection of consultants, (c) tendering of works, (d) oversight of all implementation activities, including but not limited to tendering, contract management, construction monitoring and supervision and ES implementation. The PCU members will be assisted by experienced consultants in their respective field of activity.

7. **Design and Supervision Consultants (DC, SC).** The DCs (separate contracts respectively for design of water supply and sewage) and SC will report to the PCU and will support the PCU in all aspects of the project management: the DCs will support the PCU concerning the revision of the technical approach during the detailed design phase, quality check of technical solutions (fit for purpose), preparation of the detailed design and ES documents for site-specific activities and the SC will support the PCU in finalizing the tender documents, supporting the tender process and evaluation of tenders, implementation monitoring, including construction supervision, progress monitoring, quality control checks of the works, ensuring full compliance with ES implementation and periodical reporting. The Terms of Reference of the Consultants (separated for water supply and sewage) are currently under preparation by the UZST and will be reviewed by the Bank prior to the start of the selection process, which will be conducted according to the Bank's policy. The PCU will prepare the Request for Expression of Interest and ToR for the Detailed Design to start the selection process after Board approval. The advance procurement for the consulting services is expected to run in parallel with the Government approval process prior to loan signing.

8. **Implementation period.** The tendering of contracts will be staggered in four batches with a spacing of three months each so that the Project can be managed adequately by the PCU and will deliver high quality outputs and within time based on the agreed implementation arrangements. Each batch of contracts is estimated to be completed in four years. The Project is expected to be implemented over a five-year period from July 2022 to June 2027.

9. **Hand-over of assets for O&M after completion.** After completion of construction of the water supply and sewage schemes under the supervision of the UZST, the systems will be

handed over for Operation and Maintenance to the BS under the UZST responsible for the provision of water supply and sanitation services to the end-users. During the initial operation period of two years, the contractor will provide assistance to strengthen the capacity of BS staff to adequately operate and maintain the new infrastructure, such as sewage treatment plants and pumping stations.

10. **Adopting lessons learned.** AIIB is drawing lessons learned from similar projects implemented by other IFIs in Uzbekistan and AIIB projects in other countries and taking steps to reflect them in the project design, implementation arrangements, PDS, risk assessment and mitigation measures. The Project has adopted the following lessons:

(i) **Phased approach, implementation complexity and readiness:** The activities were prioritized according to technical readiness and need, to expedite project preparation and implementation readiness as well as to manage implementation complexity. The approach and selection criteria are further described in section D of this Annex. The application of a phased approach is generally recognized by AIIB and other IFIs to speed up project implementation and reduce implementation complexity. To further increase implementation readiness, i) the onboarding of additional key PCU personnel will be accelerated, and ii) the required documents for the selection of the consultant for the detailed design are prepared by the PCU to commence the selection process after Board approval. The advance procurement for the consulting services is expected to run in parallel with the Government approval process prior to loan signing.

(ii) **Weak technical and managerial capacity at the local level** has led to delays in implementation in the past according to the experience of other IFIs in Uzbekistan. In line with the approach by other IFIs and the Government, the responsibility of project implementation is centralized at the national level to concentrate and strengthen implementation capacity. To provide for the engagement and ownership at the local level, a close coordination with Bukhara Suvtaminot through the local representative of the PCU, and the DCs and SC is foreseen as part of the implementation arrangements.

(iii) **Risk of delays due to institutional reforms** While the ongoing reform of the water sector, including the tariff reform, roll-out of metering, and other aspects are expected to yield positive results in strengthening the performance of the sector, institutional changes have been identified as a major cause of delay in project implementation by other IFIs in Uzbekistan. The Bank team is closely monitoring the ongoing reform process and engages jointly with other stakeholders in dialogue with the Government. Cloovenants to ringfence the implementation arrangements in case of institutional changes are included in the legal agreements.

D. Selection of Activities

11. The geographical prioritization of the phasing with the different activities for water and sewage was undertaken by the MHCS together with BS based on selection criteria prepared in consultation with the Bank (urgency, joint water resource, volume, packaging of works, expected

increase wastewater volume):

Phase I: The MHCS indicated a high need for water supply in priority area 1; further, it was indicated that the technical preparation can proceed more quickly than for other areas. For sewerage, the MHCS has prioritized areas that are expected to observe increases in wastewater in the near future or are currently most in need of sewage systems.

Phase II: Given that the Damkhoja water facility is currently under construction for extension, and the increased water supply from this source will only be available after completion of the works, the areas supplied by Damkhoja were placed in Phase II. Further water supply activities in Northern Bukhara have been allocated to Phase II to achieve a balanced approach in terms of volume and implementation complexity. For sewage, the remaining district centers have been allocated to Phase II. As there are current works under a World Bank project ongoing in Bukhara city, which are close to completion, it was decided to allocate Bukhara city to Phase II, to provide that the interfaces between the two projects are clear.

E. Operation and Maintenance

12. BS under USZT will be responsible for operation and maintenance of the existing and new water and sewage facilities. The WSS infrastructure will partly include facilities and technology that are new to BS and it has been agreed that the works contracts include also, in case of the more sophisticated water and sewage facilities (sewage treatment plants, water works, pumping stations), the responsibility for operation and maintenance for an initial two-years- period after commissioning. On-the-job-training will be included with the purpose of training the staff so that BS can take over the O&M after this initial two-year technical assistance.

Annex 3: Economic and Financial Analysis

Economic Analysis

Background

1. The GoU has identified the Bukhara region as a priority for development and tourism, which would require significant investments to construct and rehabilitate the much-dilapidated water and sewage infrastructure. The GoU aims to increase access to water supply and sanitation services in the region to 100 percent. The current level of water access in the region is 52 percent, while the sanitation services is only accessible for the citizens of Bukhara and Kagan cities with access rates of 55.6 percent and 27.6 percent respectively.

2. This project will finance the construction of water supply systems in three districts and sewage systems in two cities and five districts centers of the Bukhara region. The Project will benefit 1.2 million end users. Implementation is planned to commence in 2022 with the estimated implementation period of five years.

Table A3.1: Number of project beneficiaries

District	New Access	Improved Service	Total
Gijduvon	234,124	97,876	332,000
Vobkent	94,683	55,317	150,000
Shofirkon	179,152	12,848	192,000
Total Water	**507,959**	**166,041**	**674,000**

District Centre	New Access	Improved Service	Total
Shofirkon	27,000	-	27,000
Vobkent	30,000	-	30,000
Yangibazar	9,500	-	9,500
Gala-Osiyo	31,000	-	31,000
Jondor	18,000	-	18,000
Bukhara City	216,310	153,690	370,000
Kagan City	72,350	10,650	83,000
Total Sewerage	**404,160**	**164,340**	**568,500**
Total Water and Sewerage	**912,119**	**330,381**	**1,242,500**

3. To maximize socio-economic benefits, the Project is delivered as part of an integrated approach including water supply and wastewater management.

Approach and Methodology

4. A CBA was carried out to assess the economic viability of the Project comparing “with-” and “without-project” scenarios. The Economic Internal Rate of Return (EIRR) and Economic Net Present Value (ENPV) of the Project was estimated based on a discounted cashflow analysis

considering economic costs and benefits. A sensitivity analysis was performed taking into consideration: (i) increased investment costs, (ii) increased Operation and Maintenance (O&M) costs, (iii) decreased benefits, and (iv) a worst-case scenario, which combines the three previous scenarios.

5. **Data:** Primary information on project cost, households' current water consumption, expenditures and coping cost related to inadequate water supply was collected during the preparation of the FS and the baseline household survey for the Environmental and Social Planning Framework (ESMPF). The primary data was complemented with demographic information, public health data, other household characteristics, and technical assumptions. Secondary sources include a socio-economic household survey,[13] and public health statistics of the region. Data was verified through multiple sources where possible, and the conservative end of the range of estimates were used.

Key Assumptions:

Population Growth: 1.9 percent p.a.[14]
Standard Conversion Factor: assumed to be 0.95.[15]
Shadow Wage Rate: 80 percent of unskilled wage for household members who engage in paid labor outside the household.
Project Duration: assumed to be 25 years.
Project Implementation Period: assumed to be 5 years.
Benefits: assumed to accrue after completion of all construction works (after the fifth year).
Discount Rate: 9 percent.[16]
Water Consumption after the project: 150 liters per capita per day.
Time Savings (water handling): 13 hours/month per household.
Sick days (due to diarrheal diseases): 4 days/year per household.

6. **Project Benefits**. The expected project benefits from the investments in water supply include improved health outcomes (reduced water-related morbidity and mortality, reduced malnutrition in children), increased economic productivity, increased school attendance, improved scholastic achievement, time savings from water handling,[17] savings from reduced coping costs (storage tanks and pumps), and water purchase from water vendors.[18] Children carry a disproportionate burden of water-related diseases, which is one of the major preventable causes

[13] The household survey was conducted as part of the ESMPF preparation and included a representative sample of participants across the cities and districts in Bukhara covered by the Project.
[14] State Committee of the Republic of Uzbekistan on Statistics, United Nations World Population Prospects; 2019 Revision.
[15] The same conversation factor as for other projects in Bukhara, notably the Phase I Project and Bukhara Road Network Improvement Project was applied.
[16] The same discount rate is used for other projects in Bukhara, notably the Phase I Project, Bukhara Road Network Improvement Project as well as Asian Development Bank-financed projects in Uzbekistan.
[17] Handling refers to total time spent boiling, manually pumping, and hauling of water.
[18] Waddington et al. (2009) provides a comprehensive overview of rigorous impact evaluations in the water sector. Moore et al. (2001) and Niehaus et al. (2002) show the negative long-term consequences of early childhood diarrhea on nutritional status and cognitive development.

of death in children under five years of age in developing countries.[19] Investments will also support the reduction of technical losses through the rehabilitation of the network and procurement of modern equipment and machinery which is expected to increase energy efficiency. With regards to the investments in wastewater infrastructure, the newly connected households will result in positive environmental impacts, though they are difficult to quantify. The wastewater investments will also contribute to the expected health benefits. Only a part of the above-described benefits was quantified in this economic analysis, which can hence be interpreted as a conservative or lower bound estimate of the net economic benefit of this project.

7. For the purpose of valuation, the benefits of the Project are distinguished as benefits stemming from non-incremental water, incremental water, savings in water production and O&M and benefits of wastewater services. The valuation of project benefits is summarized in Table A3.2.

8. Benefits from non-incremental water supply include the avoidance of direct and indirect coping costs from inadequate water supply. Household expenditures such as purchasing water from water vendors at higher prices, installation and operation of private water tanks and underground water storage are considered direct coping costs. Indirect coping costs comprise the time value lost through water handling or sickness (or caretaking of sick family members) related to water-related diseases. The lost time is valued at the shadow wage for unskilled labor, which is assumed at 80 percent of an unskilled wage, for household members that engage in economic activity outside the household.

9. **Benefits from Incremental Water Supply.** Households, which receive a household service connection or increased service quality through the Project, are expected to consume more water than previously when water demand exceeded the supply of water. The additional or incremental water is valued at the revised water tariff, which reveals the observed willingness to pay of the household. Given that the water tariff, even after the revision as per the most recent tariff adjustment in February 2022, is low by international standards, the analysis underestimates the true willingness to pay of households, and hence, the economic value of the incremental water supply.

Table A3.2: The Valuation of Economic Benefits

Benefits	**Valued at the Average Cost of Consumption in a "Without" Project Scenario, Including Tariffs Paid and Coping Costs (Both Direct and Indirect)**
1. Value of Non-incremental Water	
1.1. Direct Coping Costs	
Purchase of water from tanker trucks	Cost difference of purchasing water through water vendor.
Purchase of bottled water	Cost difference of purchasing bottled water.

[19] World Health Organization. 2018. Drinking-water. http://www.who.int/news-room/fact-sheets/detail/drinking-water

Benefits	Valued at the Average Cost of Consumption in a "Without" Project Scenario, Including Tariffs Paid and Coping Costs (Both Direct and Indirect)
Installation and operation of private water tanks or underground water storage	Proportion of households using private water storage and average investment and O&M costs.
1.2. Indirect Coping Costs	
Time	Valued as the time savings for time spent handling water and valued at the shadow wage rate (including time to boil, manually pump, and haul water).
Health (Children)	Valued as the time savings for caregiving of mothers at the shadow wage rate.
Health (Adults)	Valued at adult sick days avoided and average daily wage for unskilled labor.
2. Value of Incremental Water	
Increase in supply duration and available quantity	Valued at cost of water consumption of the piped water supply tariff scheme in with project scenario. Additional available quantity and willingness to pay/ cost of production.
3. Savings in Water Production and O&M	
Reduced technical losses	Valued at avoided production cost (reduced water losses) and production costs.
Savings from energy efficiency	Valued at the difference in energy consumption per m^3 before and after the project.
4. Benefits from Sanitation Services	
Improved quality of life resulting from access to sewage infrastructure	Revealed willingness to pay wastewater tariffs for the beneficiaries newly connected to the centralized sewage systems.

10. **Estimated Value and Disaggregation of Benefits.** Total project benefits are estimated at USD67.8 million per year which is approximately USD35 per household per month. The detailed composition of benefits is reported in the Table A3.3 below.

11. The benefits from safe and affordable non-incremental water supply accounts for most of the benefits of the Project. Direct coping costs cumulatively account for 10.7 percent of the benefit, which can be further broken down to include avoided costs of installing and maintaining private water tanks (0.5 percent) and reduced cost of purchasing water from tanker trucks and bottled water vendors (10.2 percent). Indirect coping costs, avoided through access to piped safe water supply at the household level, accounts for 53.9 percent of the project benefits. The targeted households are expected to save almost half an hour per day on average, or 13 hours per month[20]

[20] On average, a household will save approximately 25 minutes per day from water hauling and handling. It was assumed that all sick days are adult sick days leading to a direct loss in income and 80 percent of the sick days are spent by a non-salaried household member caretaking for sick family members (mostly children).

in hauling and handling water (25.3 percent of estimated project benefit). Households are also expected to benefit from improved health, resulting in reduced time lost for productive and domestic use due to diarrheal diseases, which includes approximately four days of wages lost for productive adults per year, as well as the lost time taken to care for sick children, estimated at four days per year per child. The health benefits also include the savings in doctor's consultation fees as well as the prescribed cost of medicines. The total benefits from savings in improved health corresponds to 28.6 percent of the total project benefit.

12. Benefits accruing from the valuation of incremental water are also significant. Households are expected to benefit from increased availability of water quantity and continuity in water supply, valued at 29.2 percent of the total benefit. Water supply consumption is estimated to increase from 54 liters per person per day to 150 liters per capita per day. Given that true willingness to pay is unknown, the increased quantity is valued through the revealed willingness to pay of the household, i.e., the tariff as outlined in the new tariff regulation, approximately UZS 2,400 per m^3 (or USD0.22). Given that the level of water tariffs is in Uzbekistan is low by international comparison, the estimate can be interpreted as a lower bound of the economic benefit of the increased water quantity, which can be expected to have a higher economic value.

13. Benefits from valuing savings in water production and O&M comprise 3.4 percent of total project benefits. Approximately 0.5 percent is due to reduced technical losses as a result of the rehabilitation of the network. The low valuation is in line with expectations given the very low cost of production. Savings in energy consumption per cubic meter produced will result in about 2.9 percent of the benefits.

14. The benefits from access to wastewater infrastructure account for 2.8 percent of the total benefit and is valued at the revised wastewater tariff. This is in line with expectations, given that wastewater tariffs have been historically very low, approximately half that of the water tariff.

15. **Project Costs.** The total investment cost for water and sewerage infrastructure of this Phase II Project is estimated at USD281.3 million. For this CBA, only capital investment costs for the water supply and sewage infrastructure under this Phase II Project is considered, which adds up to USD222.1 million. The costs of the project management support have been excluded. The lifecycle O&M cost for the planned water supply schemes has been included in the project costs.[21] To convert financial costs to economic costs, taxes have been removed and a standard conversation factor has been applied to correct for other taxes and distortions in the economy.

[21] The investment costs and O&M costs are based on the estimates provided in the feasibility studies.

Table A3.3: Disaggregation of Project Benefits

Economic Benefit	Per Household and Month (USD)	Total Benefit per Household per Year (USD)	Total Benefit per Year (USD)	Proportion of Benefits (percent)
1. Value of Non-incremental Water	**32.5**	**390.1**	**43,749,747**	**64.6**
1.1 Direct Coping Costs				
Purchase of water from tanker trucks	3.2	38.0	3,710,562	5.5
Purchase of bottled water	2.1	24.9	3,232,674	4.8
Installation and operation of private water tanks or underground water storage	0.2	2.4	313,628	0.5
1.2. Indirect Coping Costs				
Time	14.6	175.2	17,113,011	25.3
Health (Children)	4.1	49.3	6,393,360	9.4
Health (Adults)	8.3	100.2	12,986,513	19.2
2. Value of Incremental Water	**2.4**	**29.4**	**19,794,711**	**29.2**
Increase in supply duration and available quantity	2.4	29.4	19,794,711	29.2
3. Savings in Water Production and O&M	**-**	**-**	**2,327,795**	**3.4**
Reduced technical losses	-	-	364,366	0.5
Savings from energy efficiency	-	-	1,963,429	2.9
4. Benefits from Wastewater Services	**0.3**	**3.3**	**1,892,576**	**2.8**
Improved quality of life resulting from access to wastewater infrastructure	0.3	3.3	1,892,576	2.8
Total Economic Benefit	**35.2**	**422.7**	**67,764,828**	**100.0**

Results of Economic Analysis

16. The analysis underlines the high economic value of this project. The EIRR is estimated at 22.2 percent, clearly exceeding the social discount rate of 9 percent. The Economic Net Present Value is estimated at USD278.5 million, based on a 9 percent discount rate. Given the strong socio-economic benefits of providing access to safe water supply and improved service quality through household connections to a large and currently underserved population in regional Bukhara, the high economic evaluation is in line with expectations. The results are summarized in Table A3.4 below.

Table A3.4: Results of Cost Benefit Analysis

Items	**NPV (USD million)**
Project Costs	**180.5**
Construction	159.0
O&M	21.6
Project Benefits	**459.0**
Non-Incremental Water Supply	296.4
Incremental Water Supply	134.1
Savings in O&M and Reduction of Technical Losses	15.8
Benefits from Wastewater Services	12.8
Economic Valuation of Project	
Economic Net present value (ENPV)	**278.5**
Economic Internal Rate of Return (percent)	**22.2%**

17. A sensitivity analysis was performed taking into consideration: (i) a cost over-run in investment costs by 20 percent; (ii) a cost over-run in O&M costs by 20 percent; (ii) lower than expected benefits by 20 percent, and (iv) a worst-case scenario, which combines all three previous scenarios.

18. The cashflow of costs and benefits and the net-flow under the sensitivity analysis are presented in Table A3.5 below. The sensitivity analysis shows that the Project remains economically viable under all sensitivity analysis scenarios. The economic viability of the Project is most sensitive to a decrease in project benefits, followed by cost over-run in investment costs. Increased O&M cost only marginally affect the EIRR and ENPV of the Project.

Table A3.5: Cashflow and Sensitivity Analysis

	Costs		Economic benefits					Base Case	Sensitivity Analysis			
Year[1]	Construction	Operation & Maintenance	Non-incremental water supply	Increment-al water supply	Savings in O&M and from reduced technical losses	Benefits from wastewater services	Total Benefits	Net Benefits	20% increase in investment cost	20% increase in O&M cost	20% decrease in benefits	Combined effect - worst case scenario
1	24.3	-	-	-	-	-	-	(24.3)	(29.2)	(24.3)	(24.3)	(29.2)
2	35.7	-	-	-	-	-	-	(35.7)	(42.8)	(35.7)	(35.7)	(42.8)
3	55.3	-	-	-	-	-	-	(55.3)	(66.4)	(55.3)	(55.3)	(66.4)
4	61.7	-	-	-	-	-	-	(61.7)	(74.1)	(61.7)	(61.7)	(74.1)
5	31.0	-	-	-	-	-	-	(31.0)	(37.2)	(31.0)	(31.0)	(37.2)
6	-	3.6	43.7	19.8	2.3	1.9	67.8	64.1	64.1	63.4	50.6	49.8
7	-	3.6	44.6	20.2	2.4	1.9	69.1	65.4	65.4	64.7	51.6	50.9
8	-	3.6	45.4	20.6	2.4	2.0	70.4	66.7	66.7	66.0	52.7	51.9
9	-	3.6	6.3	20.9	2.5	2.0	71.7	68.1	68.1	67.3	53.7	53.0
10	-	3.6	47.2	21.3	2.5	2.0	73.1	69.4	69.4	68.7	54.8	54.1
11	-	3.6	48.1	21.7	2.6	2.1	74.5	70.8	70.8	70.1	55.9	55.2
12	-	3.6	49.0	22.2	2.6	2.1	75.9	72.2	72.2	71.5	57.1	56.3
13	-	3.6	49.9	22.6	2.7	2.2	77.3	73.7	73.7	72.9	58.2	57.5
14	-	3.6	50.9	23.0	2.7	2.2	78.8	75.1	75.1	74.4	59.4	58.7
15	-	3.6	51.8	23.4	2.8	2.2	80.3	76.6	76.6	75.9	60.6	59.9
16	-	3.6	52.8	23.9	2.8	2.3	81.8	78.2	78.2	77.4	61.8	61.1
17	-	3.6	53.8	24.3	2.9	2.3	83.4	79.7	79.7	79.0	63.0	62.3
18	-	3.6	54.8	24.8	2.9	2.4	84.9	81.3	81.3	80.6	64.3	63.6
19	-	3.6	55.9	25.3	3.0	2.4	86.6	82.9	82.9	82.2	65.6	64.9
20	-	3.6	56.9	25.8	3.0	2.5	88.2	84.6	84.6	83.8	66.9	66.2
21	-	3.6	58.0	26.3	3.1	2.5	89.9	86.2	86.2	85.5	68.3	67.5
22	-	3.6	59.1	26.8	3.1	2.6	91.6	87.9	87.9	87.2	69.6	68.9
23	-	3.6	60.2	27.3	3.2	2.6	93.3	89.7	89.7	89.0	71.0	70.3
24	-	3.6	61.4	27.8	3.3	2.7	95.1	91.5	91.5	90.7	72.4	71.7
25	-	3.6	62.6	28.3	3.3	2.7	96.9	93.3	93.3	92.5	73.9	73.2
Total	**208.1**	**72.8**	**1,052.5**	**476.2**	**56.0**	**45.5**	**1,630.2**	**1,349.4**	**1,307.8**	**1,334.8**	**1,023.3**	**967.2**
NPV	159.0	21.6	296.4	134.1	15.8	12.8	459.0	278.5	246.7	274.2	186.7	150.6
IRR								**22.2%**	**19.4%**	**22.1%**	**18.6%**	**15.9%**

[1] Period starting July 1 to June 30 in the following year.

Financial Analysis

19. **Sources, standards and audit.** The Financial Analysis for this project was performed based on information received from the BS, feasibility study (FS), as well as the project team's analysis. The 2017-2018 annual audited financial statements of BS (2018 Audit Report) have been prepared in UZS (reporting currency) in accordance with International Financial Reporting Standards. The auditor was Grand Thornton AO LLC. BS has not provided full audited or management financial statements for the year ended 2019.

20. **Profitability.** Company's revenue comes from two main services: Water and Sewage. Revenue from the sale of water on average accounts for 86 percent and sewage for 14 percent of total revenue. The cost of staff, depreciation of assets, cost of fuel and electricity and expenses on materials and components are the main expense items and accounts for around 80 percent of the cost of sales. Tariffs for the supply of water and sewerage services are approved by the regional authorities and the Ministry of Finance. In 2017-2018 legislation set a cap on margin of not more than 10 percent, which resulted in a permanent net loss. However, to support the BS's activities and to implement its investment program, the Government provided support in terms of subsidies.

21. The government's subsidy of UZS3.8 billion (USD0.4 million) and UZS11.6 billion (USD1.1 million) in 2017 and 2018 respectively were inadequate to offset the increase in financing cost from the depreciation of the UZS against USD in 2017. The UZS had depreciated from UZS3,017 per USD in 2016 to UZS5,670 in 2017 and depreciated even more in 2018 to UZS8,193 per USD. As of March 8, 2022, the exchange rate was UZS10,904. Currency depreciation had more than tripled the financing cost of BS in 2017 as a result of wider economic reforms and free-floating exchange rate regime. The total financing amount in 2017 increased to UZS338 billion (USD33 million) then decreased to UZS84 billion (USD8 million) in 2018. Based on the audited financial statement in 2017 and 2018, the utility had showed net loss of UZS340 billion (USD33 million) and UZS 82 billion (USD8 million) respectively.

Table A3.6: Income Statement 2017-2018

Income Statement	**Audited**				**Common Size**	
Units	**UZS thousand**		**USD thousand**		**%**	**%**
Item	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Revenue	35,289,822	40,235,890	3,400	3,876	100	100
Cost of Sales	(27,951,651)	(34,959,310)	(2,693)	(3,368)	(79)	(87)
Gross Profit	**7,338,171**	**5,276,580**	**707**	**508**	**21**	**13**
Government subsidies	3,785,671	11,550,714	365	1,113	11	29
Operating Profit	**3,063,027**	**7,521,778**	**295**	**725**	**9**	**19**
Finance cost	(337,841,198)	(83,958,366)	(32,547)	(8,088)	(957)	(209)
Net loss before tax	**(340,663,831)**	**(82,023,900)**	**(32,819)**	**(7,902)**	**(965)**	**(204)**

22. **Tariffs.** As a regional water supply utility under the UZST, BS's revenue is regulated by a national tariff policy. Historically, the tariff policy was aimed at protecting water consumers, leaving the water utility starved of the necessary resources to provide water supply and sanitation services to the population while also expanding coverage. Before, the legislation set a limit of 10 percent margin of profitability, which left the utility without the possibility of increasing tariffs for its services. This in turn cemented an unsustainable operating model, which did not allow for the proper modernization of existing assets and capital expenditure for expansion and maintenance. In April 2019, a new national tariff policy, which was developed with Technical Assistance from the World Bank, was introduced through the Cabinet of Ministers Resolution No. 309.[23] The policy sets the mechanism for tariff calculation on a full cost-recovery basis inclusive of operating costs, maintenance cost, as well as the costs of financing and investment costs for the extension and modernization of the system.

23. The new tariff of water supply and sewage was set on a full cost-recovery basis incorporating the needed future infrastructure expansion and modernization of both water supply and sewerage systems. The tariff reform is only applicable to the infrastructure expansion and modernization plan that has been approved by the MHCS. The average tariffs will be determined by the "cost-plus" methodology divided by the expected volume of water sold annually.

24. On August 29, 2020, the Bukhara region authorities approved new water and sewage tariffs calculated according to Resolution No. 309, which was subsequently supported by the Ministry of Finance. As of November 1, 2020, the tariffs for water and sewage for population were increased by 113 percent and 168 percent respectively compared to previous tariff approved in 2019. Most recent adjustments in water and sewage tariff levels were announced in February 2022. The new tariff levels will enhance the sustainability of the BS and will strengthen its financial position. The approved tariff consists of the base tariff, special premium (UZS50), and VAT (15 percent). The tariff for population is not subject to VAT.

Table A3.7: Water Tariffs

Group	16/12/2018		1/11/2019		1/11/2020		01/02/2022	
	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)
Population	1,000	0.096	1,150	0.111	2,450	0.236	2,400	0.220
Budgetary institutions	2,420	0.233	3,385	0.326	4,420	0.426	3,800	0.348
Wholesale	2,900	0.279	3,385	0.326	4,420	0.426	3,800	0.348
Average Tariff	2,107	0.203	2,640	0.254	3,763	0.363	3,333	0.306

[23] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 13, 2019, No. 309 "On Measures to Improve the Procedure for Establishing, Declaring (Approving) and Setting Regulated Prices (tariffs) for Water Supply and Sewerage Services."

Table A3.8: Sewage Tariffs

Group	16/12/2018		1/11/2019		1/11/2020		01/02/2022	
	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)	(UZS/ m^3)	(USD/ m^3)
Population	600	0.058	690	0.066	1,850	0.178	1,800	0.165
Budgetary institutions	1,580	0.152	1,890	0.182	3,040	0.293	2,600	0.238
Wholesale	1,700	0.164	1,890	0.182	3,040	0.293	2,600	0.238
Average Tariff	1,293	0.125	1,490	0.144	2,643	0.255	2,333	0.214

Financial Position

Table A3.9: Balance Sheet 2017-2018

Balance Sheet	Audited				Common Size	
Units	**UZS thousand**		**USD thousand**		**%**	**%**
Assets	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Property, Plant and Equipment	236,508,236	434,308,441	22,785	41,841	83	79
Total Non-current Assets	**236,576,363**	**435,561,285**	**22,792**	**41,962**	**83**	**79**
Inventories	2,128,607	3,378,083	205	325	1	1
AR and Other Receivables	44,818,284	90,807,077	4,318	8,748	16	17
Cash and Cash Equivalents	1,065,900	20,458,717	103	1,971	1	4
Total Current assets	**48,012,791**	**114,643,877**	**4,626**	**11,045**	**17**	**21**
Total Assets	**284,589,154**	**550,205,162**	**27,417**	**53,006**	**100**	**100**
Liability						
Interest Payable	1,701,867	3,557,310	164	343	1	1
Current Portion of Long-term Borrowings	25,516,939	17,781,151	2,458	1,713	9	3
AP and Other Payables	33,297,163	62,016,573	3,208	5,975	12	11
Total Current Liability	**60,515,969**	**83,355,034**	**5,830**	**8,030**	**21**	**15**
Borrowings	588,023,289	869,682,136	56,650	83,784	207	158
Total Long-term Liability	**588,023,289**	**869,682,136**	**56,650**	**83,784**	**207**	**158**

Balance Sheet	Audited				Common Size	
Total Liability	**648,539,258**	**953,037,170**	**62,480**	**91,815**	**228**	**173**
Equity						
Chartered Capital	3,369,845	3,369,845	325	325	1	1
Accumulated Gain/(Loss)	(406,595,482)	(488,636,989)	(39,171)	(47,075)	(143)	(89)
Restricted Capital	39,275,533	82,435,135	3,784	7,942	14	15
Total Equity	**(363,950,104)**	**(402,832,009)**	(35,063)	(38,808)	(128)	(73)
Total Liability and Equity	**284,589,154**	**550,205,161**	**27,417**	**53,006**	**100**	**100**

25. The key asset on the balance is Property Plant and Equipment which accounted for around 80 percent of the total assets in 2017 and 2018, and the remaining assets are trade and other account receivables and cash. Property Plant and Equipment in 2018 increased due to additional cost of reconstruction of sewage treatment plants and sewage system. Total receivables also increased significantly in 2018 due to additional prepayment amounts for reconstruction, which amounted to around 75 percent of total receivables. Long-term debt accounts for more than 100 percent of the total liabilities and equity; this is mainly due to the accumulated loss. To fund the current operations of BS, the government continuously provided subsidies to pay off the debt obligations and working capital on an annual basis.

Table A3.10: International Financial Institutions and Commercial Loans

Lenders	USD million		Weight (%)
	2017	**2018**	
IDA - Reconstruction of sewage treatment plant	35.79	64.32	69
ADB	13.88	13.93	15
Asaka Loan	7.08	8.16	9
IDA	3.48	3.60	4
IBRD	2.45	2.71	3
Total	**62.69**	**92.72**	**100**

26. Table A3.10 above provides an overview of loans from other International Financial Institutions (IFIs), mainly the World Bank and ADB. The cost of servicing loans is split between BS and GoU to lessen the financing cost burden. The amount of loan outstanding to lenders in Table A3.9 only accounts for BS's share of the loan at the end of 2018. The loans from IDA accounts for 73 percent (USD68 million) of the overall IFI loans, followed by the ADB, Asaka and IBRD loans at 15 percent (USD14 million), 9 percent (USD8 million), and 3 percent (USD2.7 million) respectively. BS will cover an average of 39 percent[24] (USD54 million) of the interest and principal repayment (USD152 million) for the Phase I Project. For the proposed Phase II Project,

[24] The percentage is the average over the loan tenure. The yearly loan payments percentage on interest and principal percentage is determined by the agreement between BS and the Government of Uzbekistan.

the BS will on average cover 40 percent of interest (USD20.8 million) and principal repayment (USD106.5 million). The remainder will be financed by the GoU.

Project financial projections

27. The project team has prepared Project level financial analysis and projections to calculate the main financial metrics and covenants, as well as analyze future performance of the BS in With and Without-Project scenarios. In the table A3.11 below are the list of main assumptions used in calculations.

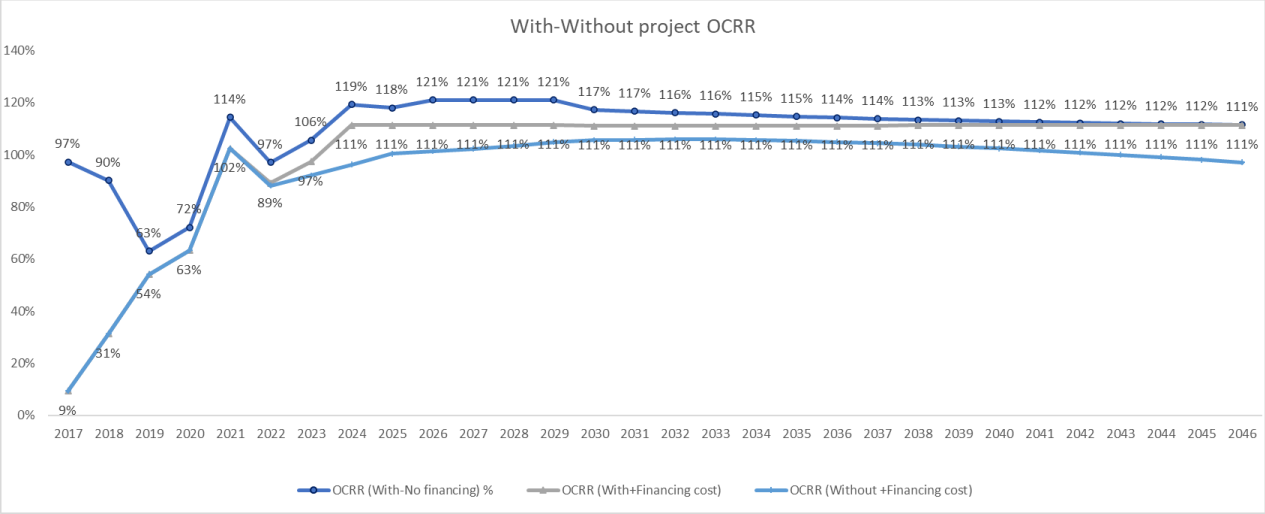
Table A3.11: Key Assumptions of With and Without Scenarios

Items	Unit	With	Without
Water produced	million m^3	Increases with the construction progress starting in year 3 (2024) and aligns with the projections in FS in the subsequent years. Production volumes almost double during a project life.	Remains constant at the level of 2019 production. Aligned with projections in FS.
Sewerage water	million m^3	Increases with the construction progress starting in year 3 (2024) and aligns with projections in FS in the subsequent years.	Remains constant at the level of 2019 production. Aligned with FS.
NRW	percent	Start at the current level of losses and reduces by 20 percent with the construction progress.	Start at the current level of losses and linearly increases by 20 percent until the end of economic life of the project.
Collection rate	percent	Current rate of 70 percent will increase by 15 percent over the construction period, and another 5 percent until the end of economic life of the project.	Increases from the current rate of 70 percent to 80 percent linearly until the end of economic life of the project (this is a half of increase rate in With project scenario)
Tariffs	UZS	Average tariff is calculated as Revenue/Volume per effective tariff policy. Revenue is capped at 10 percent of total costs margin.	Average tariff is calculated as Revenue/Volume per effective tariff policy.. Revenue is capped at 10 percent of total costs margin.
		This is a conservative assumption, since the new tariff reform allows to increase tariffs based on cost plus approach.	
Interest expense	UZS million	BS accounts for 40 percent over the loan tenure.	No AIIB financing, pay interest on existing loans.
Principal repayment	UZS million	BS accounts for 40 percent over the loan tenure.	No AIIB financing, pay principal on existing loans.

28. **Operating cost recovery ratio (OCRR).** The OCRR is derived from total revenue over the total operating costs. Three different ratios were calculated to show the effect of various expense items. First, the OCRR inclusive of all financing expenses associated with the current and future capital expenditure of the Project. The second OCRR is without financing cost, and another ratio shows the OCRR for a scenario without implementation of this project. If BS achieves an OCRR that is equal to 100 percent in any fiscal year, this means that it has earned sufficient revenue to cover the total associated costs. Over the expected 25 years tenor of the loan, the average OCRR (with financing costs) is 110 percent.

29. In 2017, the OCRR (with financing costs) dropped significantly due to the depreciation of UZS against USD and slightly stabilized in 2018-2020 due to the tariffs adjustment. The OCRR with and without financing converge by the end of project life due to decreasing interest expenses. The tariffs considered in the OCRR calculation have taken into account the 10 percent margin limit and expected tariffs approval by relevant authorities under the condition that the tariff approval will only allow BS to retain 10 percent of profit as a percentage of total costs. Based on new tariff reform, it is expected that the OCRR of future years will remain above 100 percent because BS will be able to readjust the tariffs on a cost-plus basis. Therefore, this analysis is based on a conservative tariff assumption of 10 percent margin limit.

Figure A3.1: OCRR Comparison



30. Even though the OCRR of the Without scenario the Project is relatively similar to the With scenario project case, it is important to note that the total revenue and production costs plus the financing costs of the Without scenarios are smaller than the With scenario as in the table below.

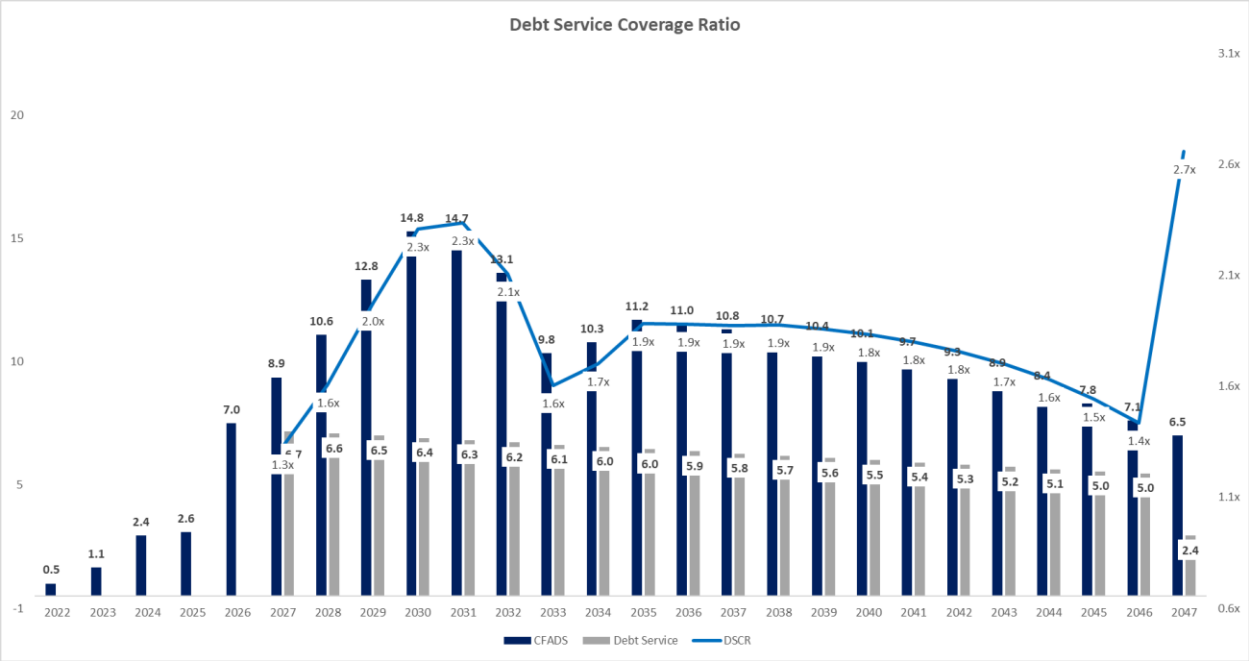
Table A3.12: OCRR Inputs

	Item (USD million)	2022	2023	2024	2025	2026	2027
Without	Revenue	7.2	8.0	9.0	10.0	10.8	11.6
	Total COGS	6.7	7.2	7.8	8.3	9.0	9.7

	Item (USD million)	2022	2023	2024	2025	2026	2027
	Total Admin Cost	0.8	0.8	0.9	1.0	1.1	1.2
	Financing Cost	0.7	0.7	0.7	0.6	0.6	0.6
With	Revenue	7.3	8.5	11.1	12.6	33.4	36.6
	Total COGS	6.7	7.2	8.4	9.7	28.4	29.3
	Total Admin Cost	0.8	0.8	0.9	1.0	1.1	1.2
	Financing Cost	0.7	0.7	0.7	0.6	0.6	2.4

31. **Debt Service Coverage Ratio (DSCR).** The DSCR ratio measures BS's ability to service the current debt obligation from the cash generated from its operations. Cash Flows Available for Debt Service (CFADS) are the net cash available for repayment of the debt obligations (interest and principal) of the entity. The loan terms include a five-year grace period during the construction phase from 2022 to 2026 and a loan repayment period of 20 years from 2027 to 2047.

Figure A3.2: Debt Service Coverage Ratio



32. Based on the projected CFADS and Debt Service, the average DSCR including the proposed financing is 1.8x during 2027-2047 and will remain above 1.0x throughout the loan repayment period, which means the BS would be able to cover the existing debt obligations. Throughout the loan life the DSCR stabilizes but remains above 1.0x. This is partially a result of annual adjustment of tariff rates so that all operating costs are covered with 10 percent margin.

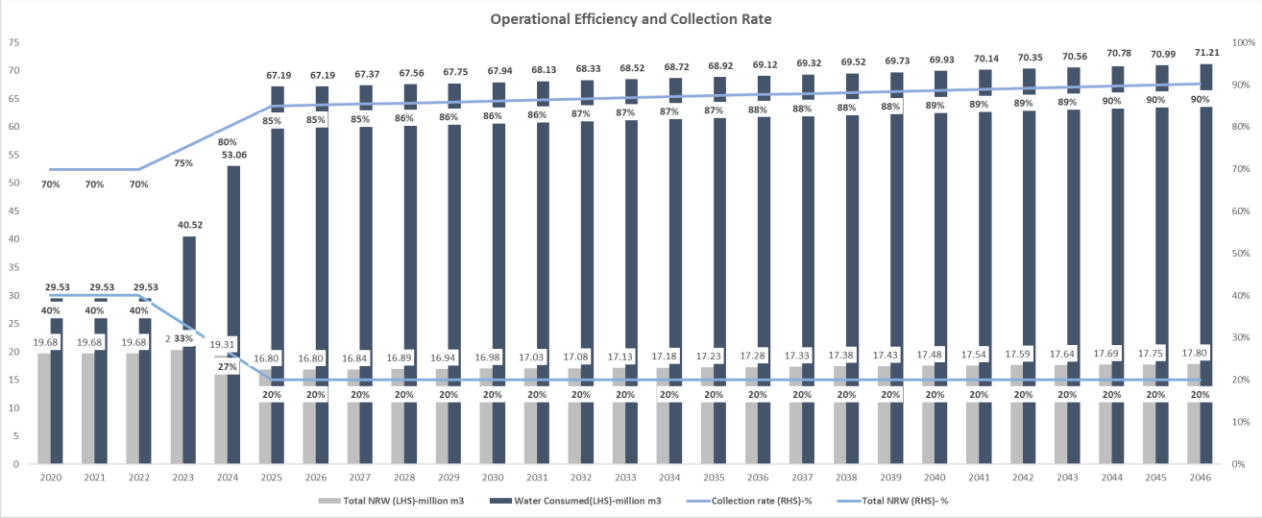
Table A3.13: DSCR Inputs

USD million	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
CFADS	0.5	1.1	2.4	2.6	7.0	8.9	10.6	12.8	14.8	10.7
Debt Service	-	-	-	-	-	6.7	6.6	6.5	6.4	6.3
DSCR	-	-	-	-	-	1.3x	1.6x	2.0x	2.3x	2.3x

Collection Efficiency and Impact on Non-Revenue Water

33. It is estimated that the current collection rates will improve further as a new billing system, which had been developed under an ADB-financed project, is introduced countrywide. As for the Project financial analysis, the collection rate is expected to increase by 15 percent by the end of construction period and 5 percent over the next 20 years period of the loan tenure. Therefore BS will improve the collection rate by close to 20 percent from current 70 percent to 90 percent.

Figure A3.3: Efficiency Improvement



34. During the construction period, it is expected that the NRW rate will drop gradually from 40 percent in 2020 to 20 percent after the completion of construction as efficiency and water management capability improves. The recovered NRW can be captured and provided to the new connections which, in turn, will contribute to the increase in revenue as the collection rate steadily increases from year to year with the improved bill collecting system.

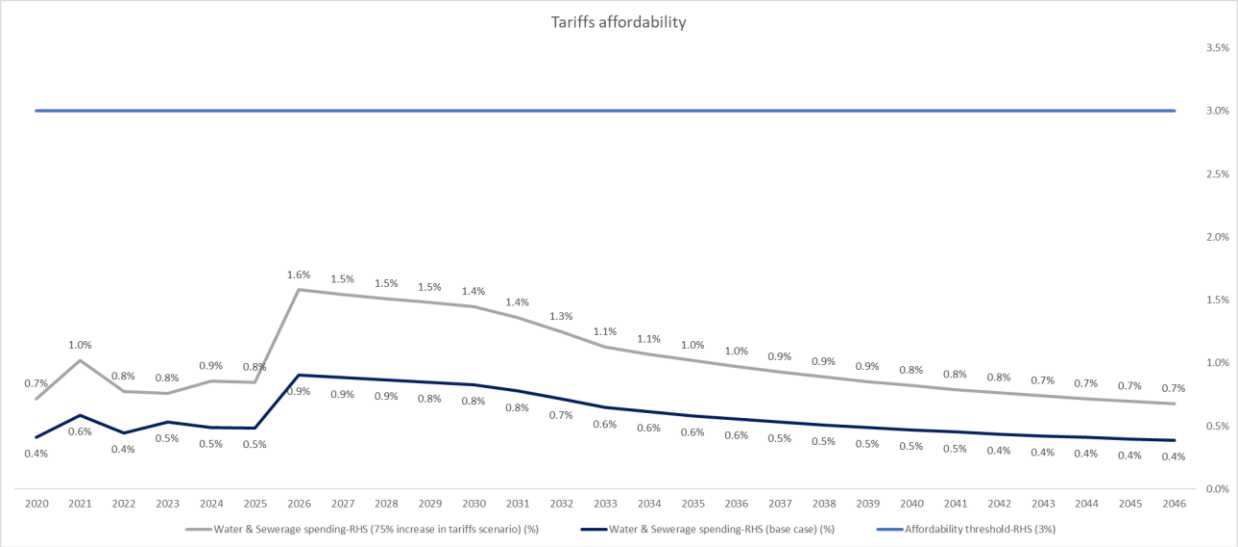
Affordability of Tariff

35. According to the tariff reform in 2019, the GoU had imposed a limit on the profitability of the water tariffs at 10 percent of total operating costs. Therefore, BS could not adjust the annual tariff that would generate a profit more than the indicated cap. All calculations in this report have considered this limit and adjusted the total revenue level each year so that the ceiling profit is

capped at 10 percent of the total annual operating cost. The average future tariff rates of both water and sewage can be recalculated by limiting the profit for each year to 10 percent on the operating cost and reverse calculated for the break-even total revenue.

36. From the projected operational data, both the water and sewage tariffs will gradually increase from the first year in operation (2027) with a water tariff of USD0.35/m^3, and a sewage tariff of USD0.24m^3 to USD0.81/m^3 and USD0.55/m^3 respectively in the year 2047. The commonly used affordability benchmark is spending on water and sewage of the retail customers to the average income level of the 20 percent lowest earners whose household income is estimated at USD78.8 per month in 2020[25]. As a reference, the average household income was indicated at USD 575.9 per month in 2020.[26] The United Nations Development Program considers 3 percent[27] of total monthly income as commonly used affordability threshold. The World Bank considers household expenditures of 3-5 percent of total monthly income as affordable.[28] As can be seen from the figure below, the expenditure rate remains below the threshold, which means that the tariffs remain affordable for the lowest quantile income levels.

Figure A3.4: Tariffs affordability



[25] The monthly per capita income by quantile for 2020 is projected from 2015 per capital income figures from the State Committee of Statistics and the actual GDP growth rates for 2016-2020 from the World Bank database.
[26] According to the State Committee on Statistics the average per capita income in Bukhara was indicated at UZS 14,774 thousand UZS/year in 2020. The average number of household members is 5.0. Hence, the average household income per year was 73,870 thousand UZS/year in 2020 corresponding to 6,155 thousand UZS/month. Source: https://stat.uz/en/official-statistics/living-standards
[27] Pacific Institute. Water Rates: Water Affordability. https://pacinst.org/wp-content/uploads/2013/01/water-rates-affordability.pdf
[28] World Bank (2002). "Sourcebook for poverty reduction strategies, core techniques and crosscutting issues". Washington DC.

Annex 4: Member and Sector Context

Country context

1. Uzbekistan is Central Asia's largest, and populous country. Since the 2017 political transition, the first since the country's independence in 1991, an ambitious program of market-oriented reforms, and institutional reforms were introduced, which is still ongoing. The modernization agenda has made Uzbekistan an attractive destination for investment, both foreign and domestic. This is further underpinned by the country's high growth potential, young and abundant labor supply, diversified commodity exports, macroeconomic stability, and modest debt levels. Since 2004, Uzbekistan experienced stable annual growth of 8 percent, and Uzbekistan's rapid growth drew international investors. Total foreign direct investment has tripled since 2015 to USD1.7 billion in 2020.

2. COVID-19 disrupted seasonal migration between Uzbekistan and neighboring countries, which led to disturbances in the labor market. The unemployment rate rose significantly through mid-2020—while it started to decline gradually in the second half of 2020, it remains above pre-pandemic levels. The unemployment rate is estimated at 10.5 percent in 2020. Additionally, the crisis pushed around 1 million people into poverty, increasing the total number of the poor to around 3 million (or 9 percent of the population) by 2021.[29] Higher inflation also contributed to increasing poverty. The government has committed to halving poverty by 2026 and achieving an upper-middle-income status by 2030.

3. Investments are expected to remain a major driver of growth, to be assisted by improvement in the business climate. The government has embarked on a several major reforms aimed at improving the investment climate including i) facilitating tax payments by merging infrastructure tax with corporate income tax, ii) strengthen minority investor protections, iii) facilitate contract enforcement, and iv) making cross-border trade easier by introducing risk-based inspections and simplifying the documentary process.[30]

4. Bridging the infrastructure gap is vital for Uzbekistan to achieve rapid and inclusive growth sustainably. Despite being one of the biggest economies in Central Asia, Uzbekistan faces key challenges in creating jobs, maintaining social stability, and sustain stable economic growth. Uzbekistan's large population requires urban development and social infrastructure investment, and the government expenditure on social infrastructure and residential buildings are at the risk of being cut in the light of challenging macro conditions.

5. The geographic situation of Uzbekistan positions it to become one of the main hubs between Europe and Asia, yet it faces one of the most serious infrastructure investment gaps in the region. Due to low efficiency and poor service quality, existing networks of roads and rails remain a major impediment to increasing connectivity. Transport projects accounted for 13

[29] The World Bank (2021). [https://www.worldbank.org/en/country/uzbekistan]
[30] The World Bank (2019, Doing Business 2020: Reforms propel Uzbekistan to place among World's Top 20 Business Climate Improvers [https://www.worldbank.org/en/news/press-release/2019/10/24/doing-business-2020-reforms-propel-uzbekistan-to-place-among-worlds-top-20-business-climate-improvers]

percent (around USD9 billion) of total infrastructure investments between 2000-2018. Road infrastructure capacity needs to increase by more than 400 percent by 2030 to meet the expected volume of freight.[31]

6. In 2015, the government announced a program of structural reform, and diversification of the economy[32], and showed its strong commitment to diversifying the economy which is presenting opportunities in the commercial infrastructure sector. Aligned with the strategic goal, the government started collaborating with MDBs and worked on a specific technical assistance project focusing on innovations for modernization. However, measuring and monitoring these broad development goals are quite challenging, and the strong analytical and knowledge solutions need to help inform the government's decision-making on selecting the key industries and technologies to achieve economic diversification.

Sector Context

7. Water is the key factor for socio-economic development in Central Asia. Virtually all the water resources of the region originate from the year-round snow and glaciers in Kyrgyzstan and Tajikistan. Irrigated agriculture is concentrated in the populous valleys of the Amudarya and Syrdarya rivers which carry their water to Uzbekistan, Kazakhstan, and Turkmenistan.

8. Uzbekistan has the largest irrigated land area (4.3 million ha), and the highest population density in the region, and is highly dependent on transboundary water originating from upstream neighbors. Furthermore, it has been identified as one of the most water-stressed countries by the World Resources Institute and will remain so through to 2040, with droughts expected to occur on average every 5 years.

9. **Climate Change**. Given the prevalence of desert terrain and arid climate in Uzbekistan, water is one of the most severely affected resources in the country by climate change. Intensive farming practices that were in use until the early 1990s in Uzbekistan has led to severe decrease in water surface area in the Aral Sea, which was further exacerbated by climate stress. Water resource sustainability is a critical challenge due to climate change, projections forecast reductions in overall precipitation, and a likely decrease in the long-term average run-off of the major rivers throughout the territory[33]. Bukhara region has also experienced recurring extreme climate events including heatwaves, water deficits, droughts and flood in the recent past which significantly reduced the water availability in the region [34] Decreased precipitations may exacerbate the accessibility and quality of water available, and negatively impact other sectors including agriculture and human health due to shortages in drinking water. Further, greater risks of heatwaves and major flood events further put stress on existing infrastructure with increased strain and damage, which renders climate-resilence water infrastructure ever more critical.

[31] OECD (2019), Sustainable Infrastructure for Low-Carbon Development in Central Asia and the Caucasus: Hotspot Analysis and Needs Assessment, Green Finance and Investment, OECD Publishing, Paris. [https://doi.org/10.1787/d1aa6ae9-en]
[32] Government of Uzbekistan. 2013. Welfare Improvement Strategy (WIS II) of the Republic of Uzbekistan for 2013–2015.
[33] USAID Fact Sheet, Climate Risk Profile Uzbekistan, August 2018.
[34] As per the assessment conducted via Acclimatise Aware climate risk screening of the Project.

10. **Access to Water and Sanitation Services:** Uzbekistan has undertaken significant efforts in upgrading its water supply and sanitation (WSS) services since its independence. Though access to water supply and sanitation services has steadily increased among households in the bottom 40 percent, substantial disparities remain between urban and rural areas. Less than half of Uzbekistan's population (approximately 33.6 million people) remain unconnected to a piped water system, and only 17 percent of urban households receive water 24 hours per day. The situation is exacerbated in smaller cities and rural areas, with about 10 percent of the rural population without access to safely managed drinking water. About 15 percent of the 16 million rural population live below the national poverty line, and only half of all rural residents are connected to a centralized water supply network. Overall coverage of centralized sewage systems is only 14 percent for urban and rural areas. The infrastructure, mostly from the Soviet era is highly degraded and approximately 39 percent of water supply networks are deemed obsolete, most of sewage infrastructure is not operated properly. Additionally, high operating costs and low tariffs, combined with inefficient tariff collection and organisational deficiencies of WSS utilities result in the low quality of service delivery and poor cost recovery.

11. According to the World Health Organization, water-borne diseases play a major role in Uzbekistan's health status and are mostly related to water quality and availability. Furthermore, climate change is projected to increase temperatures and decrease water availability across the country, which will further increase the burden of waterborne diseases and exacerbate other health issues. Poor water quality is caused by microbial and chemical pollution due to insufficient infrastructure to treat waste water and purify drinking water. Bacterial pollution increases in warmer temperatures and is reflected in an increased number of cases of intestinal diseases during summer.

12. Water supply of the Bukhara region is based on surface and underground water. The surface water comes from the Zarafshan river, the Amu Darya river into the Kuymazar reservoir through the Amu-Bukhara canal, and the Damkhoja water facility. Without adequate treatment, the water quality of these sources does not meet the requirements for drinking water supply for salinity and hardness and exceeds the maximum permissible concentration of the content of sodium, sulphate, phenols and petroleum products. The proposed project will address some of these challenges by improving availability of safe water.

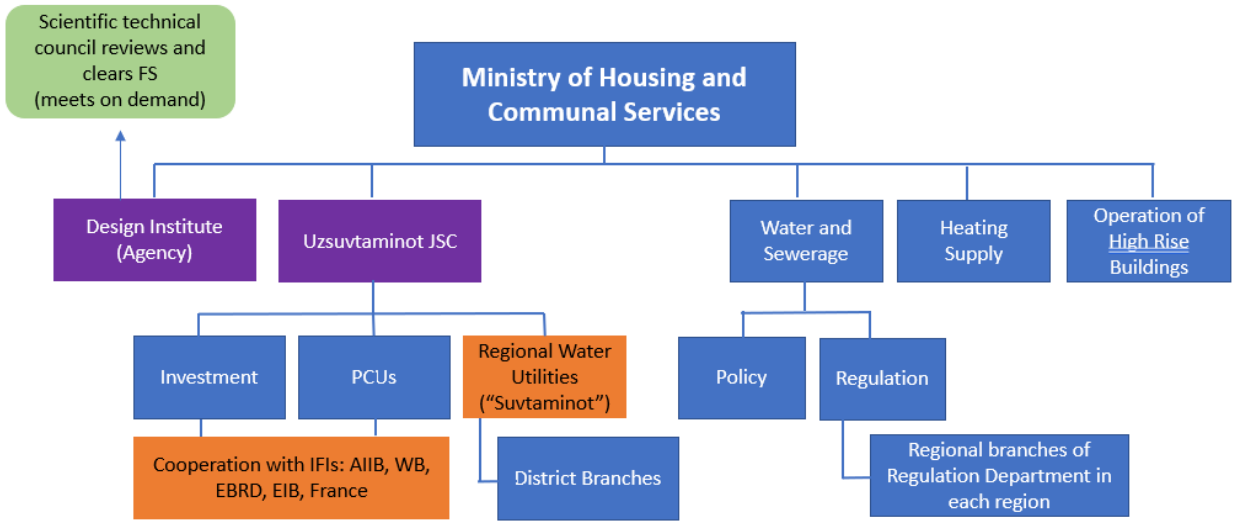
13. The water sector in Uzbekistan has been supported by several development partners such as the World Bank (WB), Asian Development Bank (ADB), European Bank for Reconstruction and Development, bilateral donors such as Switzerland, and more recently the European Investment Bank. These programs have focused on different regions, prioritizing interventions in water supply and wastewater management. The World Bank is currently supporting the water sector in Bukhara region with investments through the Bukhara Water Supply and Sewage Project and the Alat and Karakul Water Supply Project, which are close to completion. The SECO has ongoing Technical Assistance with BS to strengthen its capacity.

Institutional Structure

14. The Ministry of Housing and Communal Services (MHCS) is responsible for water sector policy, oversight of the water utilities and the preparation and implementation of investment projects in the district heating and housing sector. The Ministry was established in 2017, as part of larger institutional reforms in the country, and comprises a Directorate for Investment, a Directorate for Water and Sewerage, as well as other non-water sector functions such as heat supply and high-rise housing. The Design Institute, under MHCS, is charged with developing feasibility studies, and has an independent legal personality, but reports to the Ministry.

15. **Regional Water Utilities under a national holding company.** Regionally organized state-owned water companies (RWCs) are responsible for the provision of water supply and sanitation services to the end-user. In 2019, Uzsuvtaminot Joint Stock Company (UZST), a government-owned national holding company, was established as the single operator of water supply and sewerage infrastructure in Uzbekistan[35]. The RWCs have been transformed into limited liability companies under the new UZST, including Bukhara Suvtaminot, the water utility of Bukhara region. The current roles and responsibilities in the water and sanitation sector are illustrated in Figure A4.1.

Figure A4.1: Roles and responsibilities in the Water Sector



Comprehensive program to modernize the sector and strengthen its performance

16. GoU is implementing a comprehensive reform program to modernize the water supply and sanitation sector, strengthen its financial sustainability and improve water resource management. Key elements include the separation of the regulator and operator of WSS services, the

[35] Decree of the President of the Republic of Uzbekistan dated November 26, 2019 No. PP – 5883 "On measures to improve the management of water resources of the Republic of Uzbekistan, and Decree of the President of the Republic of Uzbekistan dated September 25, 2020 No. UP-6074 "On measures aimed at further development of drinking water supply and sewerage system, as well as relevant investment projects efficiency enhancement".

consolidation of the responsibility for project preparation, implementation and operation in one organization, a national tariff reform, a national metering strategy, the modernization of water utilities and introduction of innovative technologies ("Digital Vodakanal"), and a systematic approach to the accounting and reporting of water.

17. **Responsibility for investment projects consolidated in one entity.** From September 2020 to March 2021, the GoU has issued a series of reform decisions as part of the ongoing reform program on the country's water sector.[36] Previously, the responsibilities for preparation and implementation of water projects funded by International Finance Institutions (IFIs) were shared across multiple agencies. The Department of Cooperation with IFIs under the Ministry of Housing and Communal Services (MHCS) was responsible for the project preparation until Government approval. After approval of the project, the Agency for Communal Services Kommunkhizmat, a legally independent Agency under the MHCS, was responsible for the implementation of IFI-financed projects. According to Cabinet of Ministers Resolution of March 30, 2021, the responsibility for the preparation and implementation of IFI-financed WSS projects have been consolidated under the UZST. The Kommunkhizmat Agency has been dissolved and its rights, assets, liabilities and the personnel have been transferred to the UZST.

18. The recent decision is seen as a positive milestone in the ongoing water sector reform process, which aims to modernize the water sector and improve its performance. The decision improves the governance of the sector as it separates the functions of the regulator (MHCS) from the operator of water supply and sewerage infrastructure (UZST). Importantly, the decision consolidates the responsibility for the preparation of investments, implementation of investment projects, and service provision to the end-user in one entity, removing additional interfaces, which in the past had contributed to delays in project preparation, implementation, and a poor quality of service provision.

19. **Tariff Reform.** A revised national tariff policy was adopted in April 2019[37] and is currently being rolled-out country-wide. The policy was developed with Technical Assistance by the WB and, if implemented as planned, is expected to improve the financial sustainability of the sector. The policy sets the mechanism for tariff calculation on full cost-recovery basis inclusive of operating costs, maintenance cost, as well as the costs of financing and investment costs for the extension and modernization of the system. The tariffs are defined by region; the water utilities of the respective regions submit the proposed tariffs, calculated according to the new tariff methodology, to MHCS, the Ministry of Finance (MoF) and the Antimonopoly Commission for approval. An increased tariff has been adopted for Bukhara region on November 1, 2020. The

[36] 1. Decree of the President of the Republic of Uzbekistan «On measures to further improve the drinking water supply and sewerage system, as well as to increase the efficiency of investment projects in this sector», September 25, 2020, No. UP-6074
2. Resolution of the President of the Republic of Uzbekistan «On further improvement of the water supply system of the republic», November 26, 2019, NO. PP-4536
3. Decree President of the Republic of Uzbekistan «On measures to improve the management of water resources of the Republic of Uzbekistan to increase the level of provision of the population with drinking water and improve its quality», November 26, 2019, NO. UP-5883
4. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan «On organization of activities of the Agency for international cooperation and development under the Ministry of investments and foreign trade of the Republic of Uzbekistan», March 30, 2021, NO. 169

[37] Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 13, 2019, No. 309 "On Measures to Improve the Procedure for Establishing, Declaring (Approving) and Setting Regulated Prices (tariffs) for Water Supply and Sewerage Services.

adjusted tariff schedule includes an increase of water tariffs by 113 percent (from USD0.111/m^3 to USD0.236/m^3) for domestic users and an increase by 31 percent (from USD0.326/m^3 to USD0.426/m^3) for Government and commercial entities. The wastewater tariff for domestic users was increased by 168 percent (from USD0.066/m3 to USD0.178/m^3) and increased by 61 percent (from USD0.182/m^3 to USD0.293/m^3) for the Government and commercial entities. The tariff has been adjusted in subsequent years and remains at a comparable level. The most recent tariff levels as of February 2022 are reported in Annex 3. The new tariff policy is expected to strengthen the sustainability of the UZST, the national holding company of regional water companies (RWCs), and its subsidiaries, and significantly enhance the financial position of the entity.

20. **Metering Strategy and Digital Water Utility**[38]**.** With the vision Digital Uzbekistan 2030, the Government has made digital transformation a priority. Under the strategic umbrella of Digital Water Utility ("Digital Vodakanal"), the MHCS intends to foster the application of innovative technologies across the water sector to improve performance and efficiency, as well as water management systems and business processes in the sector. ADB is supporting the MHCS to define a countrywide approach to realize 100 percent metering of water production and distribution in Uzbekistan, including Supervisory Control and Data Acquisition (SCADA), bulk meters at production facilities as well as meters for households, budgetary institutions and businesses. The smart meters are planned to interlink with the utilities' IT systems and transmit water flow information remotely and automatically. This will allow utilities to establish a water balance and to react to leaks in the system and reduce water losses considerably. The measures are further expected to increase the utilities' ability to improve the service delivery to the client and to improve the billing and collection of the water and sewage tariffs, improving the financial sustainability of the sector.

21. **Water Resource Management.** Under the new legislation,[39] all relevant Government entities are required to systematically submit data on quantitative and qualitative parameters in relation to all types of water uses to MHCS, which will establish a unified centralized system of accounting, monitoring, and ensuring the safety and quality of water, as well as the maintaining a unified database of the water balance. Currently, no such unified system of water balance exists and its introduction is expected to provide a sound basis for water resource management.

[38] Decree of the President of the Republic of Uzbekistan dated November 26, 2019, UP-5883 "On measures to improve the water management of water resources of the Republic of Uzbekistan in order to increase the level of supply of drinking water to the population and improve its quality".
[39] Decree of the President of the Republic of Uzbekistan dated November 26, 2019, PP-4536 "On further improvement of the water supply system of the Republic".

Annex 5: Uzbekistan - Sovereign Credit Fact Sheet[40]

Background

1. Uzbekistan is a lower-middle-income country with income per capita of around USD1,800 and population of 33.6 million. Since taking office in 2016, the new government is pursuing a reform agenda to transform Uzbekistan from a state-led to a market-based economy. Reforms included introduction of market mechanisms, liberalization of trade and prices (including the exchange rate), reforms to the tax system, public financial management as well as land and agricultural policies.

2. The modernization agenda has made Uzbekistan an attractive destination for investment, both foreign and domestic. The robust growth potential is supported by young and abundant labor supply, diversified export base, macroeconomic stability, and modest debt levels. Investment rates have been remarkably high, at around 40 percent of GDP. That said, the state continues to dominate the economy. State-owned enterprises account for almost a half of GDP and more than three quarters of tax revenues. State banks control 85 percent of banking assets.

3. Growth has been robust, at around 5-6 percent, driven by investment, industry (including construction), and services. Inflation remained in double digits, due to high growth, continued liberalization of prices, and currency deprecation. The elevated current account deficit reflected high investment rates. Fiscal policy was relatively prudent, with moderate deficits.

Selected Economic Indicators	2018	2019	2020	2021*	2022*	2023*
GDP growth 1/	5.4	5.7	1.7	6.1	5.4	5.5
Inflation (CPI, average) 1/	17.5	14.5	12.9	11.0	10.9	8.1
General government fiscal balance	-2.1	-3.9	-4.4	-5.5	-4.0	-3.2
Gross public debt	19.5	28.3	36.4	38.9	41.0	40.5
Gross public financing need	2.6	11.6	11.1	7.7	8.0	7.1
Current account balance	-6.8	-5.6	-5.0	-6.0	-5.6	-5.3
Gross external debt	34.3	43.9	58.4	62.3	63.8	62.3
Gross external financing needs	10.4	9.3	10.1	14.4	12.4	10.0
International reserves (USD billion)	27.1	29.2	34.9	34.5	35.2	35.6
Exchange rate (UZS/USD) 2/	8,340	9,508	10,477	10,837	10,861	..

Source: IMF WEO Oct 2021; IMF Country Reports No. 21/85; in percent of GDP unless indicated otherwise; '*' = projections.
Notes: 1/ percent change year-on-year, average 2/ data from the central bank, end-of-period, for 2022: as of Feb 14

4. **Recent Developments**. The covid-19 pandemic in Uzbekistan, with around 200,000 reported cases and 1,500 deaths as of end-2021, came in two major waves peaking in the summer of 2020 and 2021, and turned out to be relatively mild compared with global averages. In January 2022 the Omicron variant reached Uzbekistan, sending daily cases to record levels again. Mobility restrictions are being introduced and lifted depending on the pandemic situation. Around 56 percent of the population have been vaccinated at least once—a modest progress.

[40] Updated as of February 14, 2022.

5. Tight lockdown measures imposed early in the pandemic led to a sharp decline in economic activity. The shock has been compounded by temporarily lower oil prices, which impacted the gas sector, an important export revenue source. The economic response, worth around 6 percent of GDP over 2020-21, has been timely, targeted and relatively large. Spending increased on healthcare, expansion of social assistance to low-income families, and lifeline support to affected businesses (subsides, tax relief, etc.). The central bank reduced the interest rate by 200bps in 2020, and provided liquidity to banks, which in turn allowed them to offer loan repayment holidays or maturity extensions to their affected clients.

6. The economic impact has been less than feared. Economic growth remined positive in 2020, at 1.7 percent, supported by agriculture, manufacturing, construction and stable remittances. The 4.4 percent of GDP fiscal deficit in 2020 was lower than budgeted and almost unchanged from 2019, thanks to the faster-than-expected recovery, higher gold revenues and some postponed capital spending. A strong recovery continued into 2021, supported by improvements in the domestic and external economic environment. Growth is estimated at between 6 and 7 percent in 2021. The 2021 budget has been relatively accommodative, with higher spending on healthcare, social assistance, and policy support. Inflation, at around 10 percent, remains elevated, reflecting strong domestic demand, continued price adjustments as well as higher food and commodity prices.

7. **Outlook and Risks.** Going forward, growth is expected to remain at its potential of around 6 percent, barring another health crisis, a sharp slowdown in major trading partners, commodity price collapse or a reversal in reforms. Further progress on vaccination is important to reduce risks. The authorities remain committed to sound macroeconomic management. Budget plans for 2022 (a deficit of 3 percent of GDP) indicate fiscal consolidation, while the monetary policy remains relatively tight to gradually reduce inflation to the target of 5 percent for end-2023.

8. Uzbekistan's debt remains sustainable. Public debt has seen a rapid increase in the past years, to round 40 percent of GDP, on account of externally financed investment projects, and, most recently, the impact of the pandemic. Debt is low by peer standards, though. According to the IMF, debt is expected to peak in 2022, and then decline to below 40 percent over the medium term, as growth stays at the potential, and fiscal prudence continues. Total external debt has grown in parallel, but remains moderate, at around 60 percent of GDP in 2020.

9. Public debt is vulnerable to the exchange rate, due to high dollarization, and to an export shock (e.g., commodity prices). There are important mitigants though, including high growth potential, ample fiscal space and substantial reserves of around USD35 billion (equivalent to over 60 percent of GDP). According to Fitch, Uzbekistan remains a net creditor. Some 90 percent of public debt is official, concessional, and long term, which limits rollover risks. To reinforce debt sustainability, the government plans to introduce a set of fiscal rules, including a debt ceiling.

10. Uzbekistan's creditworthiness has been sustained through the pandemic. After the initial spike, yields have returned to pre-pandemic levels, and the authorities have successfully issued

bonds in international markets. All three major rating agencies have affirmed Uzbekistan's sovereign credit rating (BB- for S&P and Fitch, and B1 for Moody's). In July 2021, Moody's changed outlook from stable to positive on the gradual progress with key structural reforms.

11. The key factor for the longer-term growth is the progress on the reform agenda, to which the government remains firmly committed. However, the more complex, politically and socially sensitive reforms, such as privatization, competition and a level playing field for the private sector, are in the nascent state or yet to be implemented. A comprehensive banking sector reform was initiated in October 2019. A presidential decree from October 2020 opens a path for a wide-ranging privatization of state assets (including banks), by 2025, with some progress already in 2021. Monopolies in the energy sector are being unbundled. Reform fatigue in the face of opposition from vested interest or potential social discontent remain key risks.

12. Ultimately, given large and growing working-age population, creating more and better jobs is the country's overarching priority. That will depend on the conducive environment for private-sector-led growth, better institutions, and improved infrastructure.