



# Periodic Financing Request Report

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Project Number: 42408-044  
MFF Number: 0032  
July 2016

## Republic of Azerbaijan: Water Supply and Sanitation Investment Program – Tranche 4

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## **CURRENCY EQUIVALENTS**

(as of 19 July 2016)

Currency Unit	–	Azerbaijan manat/s (AZN)
AZN1.00	=	\$0.6379
\$1.00	=	AZN1.5675

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
Azersu	–	Azersu Joint Stock Company
EMP	–	environmental management plans
IEE	–	initial environmental examination
IPMC	–	Investment Program management consultants
IPMO	–	Investment Program Management Office
LARP	–	land acquisition and resettlement plan
MFF	–	multitranches financing facility
PFR	–	periodic financing request
SAWMC	–	State Amelioration and Water Management Committee
SPS	–	Safeguard Policy Statement (2009)
WSS	–	water supply and sanitation
WWTP	–	wastewater treatment plant

## **WEIGHTS AND MEASURES**

km	–	kilometer
lpcd	–	liters per capita per day

## **GLOSSARY**

SuKanal	–	local water supply and sewerage agency
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## **NOTE**

In this report, "\$" refers to US dollars.

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## TRANCHE AT A GLANCE

<b>1. Basic Data</b>		Project Number: 42408-04	
Project Name	Water Supply and Sanitation Investment Program - Tranche 4	Department /Division	CWRD/CWUW
Country Borrower	Azerbaijan Government of Azerbaijan	Executing Agency	AzerSu JSC
<b>2. Sector</b>		<b>ADB Financing (\$ million)</b>	
✓ Water and other urban infrastructure and services	Urban sanitation		38.00
	Urban water supply		37.00
		<b>Total</b>	<b>75.00</b>
<b>3. Strategic Agenda</b>		<b>Climate Change Information</b>	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Medium
Environmentally sustainable growth (ESG)	Urban environmental improvement		
<b>4. Drivers of Change</b>		<b>Gender Equity and Mainstreaming</b>	
Governance and capacity development (GCD)	Institutional development	Effective gender mainstreaming (EGM)	✓
<b>5. Poverty Targeting</b>		<b>Location Impact</b>	
Project directly targets poverty	Yes	Urban	High
MDG-targeting (TI-M)	MDG7		
<b>6. Risk Categorization:</b>		Low	
<b>7. Safeguard Categorization</b>		Environment: B Involuntary Resettlement: B Indigenous Peoples: C	
<b>8. Financing</b>			
<b>Modality and Sources</b>		<b>Amount (\$ million)</b>	
ADB		75.00	
Sovereign MFF-Tranche (Loan): Ordinary capital resources		75.00	
<b>Cofinancing</b>		<b>0.00</b>	
None		0.00	
<b>Counterpart</b>		<b>25.00</b>	
Government		25.00	
<b>Total</b>		<b>100.00</b>	
<b>9. Effective Development Cooperation</b>			
Use of country procurement systems		No	
Use of country public financial management systems		No	
Date of Receipt by ADB of PFR: 18 March 2016		Tranche Number: 4	
<b>10. Country Operations Business Plan</b>			
CPS	<a href="http://www.adb.org/documents/azerbaijan-country-partnership-strategy-2014-2018">http://www.adb.org/documents/azerbaijan-country-partnership-strategy-2014-2018</a>		
COBP	<a href="http://www.adb.org/documents/azerbaijan-country-operations-business-plan-2016-2018">http://www.adb.org/documents/azerbaijan-country-operations-business-plan-2016-2018</a>		
<b>11. Tranche Summary</b>			
<p>The first three tranches of the multi-tranche financing facility (MFF) financed construction of water networks in Goychay, Agdash and Beylagan. Construction of wastewater treatment plants (WWTP) will be critical to minimize environmental and health impacts through proper sewage disposal. Project 4 will serve as additional financing to Project 2 of the MFF to complete civil works in Agdash and Beylagan towns. Two main components include water supply and sanitation (WSS) infrastructure development and program support. First component consists of WSS network in Agdash and WWTP in Agdash and Beylagan.</p> <p><b>Impact:</b> Improved public health and environment in Agdash and Beylagan.</p> <p><b>Outcome:</b> Improved coverage, continuity, and quality of water supplies and wastewater disposal in Agdash and Beylagan.</p> <p><b>Outputs:</b> (i) Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash, and (ii) sewerage and sanitation system efficiency improved through construction and coverage expansion in Agdash and Beylagan</p> <p><b>Implementation Arrangements:</b> AzerSu JSC will be the executing agency.</p>			

**Project Readiness:** Detailed engineering designs for the WSS network and the WWTPs have been completed and reviewed by the investment program management consultants (IPMC). The government submitted to ADB design documents for the WSS network and WWTPs for Agdash and Beylagan, along with the PFR on 18 March 2016. Bidding documents have been prepared for the Beylagan WWTP, including the bill of quantities. Tender for the Beylagan WWTP is scheduled for Q2 2016. Initial environmental examinations (IEEs) for Agdash and Beylagan were submitted, including the environmental management plans (EMPs) for works to be included in the bidding documents. For involuntary resettlement, the land acquisition and resettlement plans (LARPs) for Agdash and Beylagan towns have been prepared.

#### 12. Significant Developments in the MFF and Previous Tranches

Project 1 aims to improve WSS services in Goychay and Nakhchivan. About 22 km of water network, 18 km of sewer network and a water treatment plant with capacity of 40,000m<sup>3</sup>/day are completed in Nakhchivan. In Goychay, about 60 km of water supply and 53 km of sewer network are completed. Project 1 successfully met the output indicators for the WSS network in the design and monitoring framework. All works are completed and \$73.44 million have been disbursed. The loan will close in June 2017. The performance of Project 1 under the ADB portfolio management system is rated as on track.

Project 2 aims to complement the works under Project 1 through the provision of WSS services in the remaining parts of Goychay, Nakhchivan, as well as for Agdash and Beylagan. Key civil works include: (i) water distribution and sewage system reconstruction and extension in Agdash, Beylagan, and Goychay, and (ii) construction of wastewater treatment plant (WWTP) in each town. Under the institutional component, a public outreach program on better hygiene and sanitation practices was completed by UNICEF. Civil works in Nakhchivan and Goychay are completed. WSS works in Agdash and Beylagan are expected to be completed in Q4 2016. As of 28 July 2016, total contracts awarded under Project 2 were \$293.55 million (97% of the loan amount) and total disbursement was \$238.83 million (80% of loan amount). The performance of Project 2 under the ADB portfolio management system is rated as on track.

Project 3 aims to improve WSS network in Aghjabedi and peri-urban Nakhchivan. Key civil works include (i) rehabilitation and construction of wells and reservoirs; (ii) construction of sewage collection network; (iii) WWTP, and (iv) associated workshop and office buildings. Under Project 3, 266 km of water supply network, 8,000 m<sup>3</sup> of storage reservoirs, 245 km of sewer network, and a 20,000 m<sup>3</sup>/day WWTP will be constructed. Aghjabedi WSS network contract was awarded in June 2016. Contract awards for WWTP and IPMC are targeted for Q4 2016. Under the Nakhchivan subproject, 64.80 km of water supply network and 51.67 km of sewer network are projected for Nakhchivan. The WSS and IPMC contracts in Nakhchivan have been awarded in December 2015 and March 2016, respectively. As of 28 July 2016, total contracts awarded under Project 3 were \$33.52 million (22% of the loan amount) and total disbursement was \$21.74 (14.5% of loan amount). The performance of Project 3 under the ADB portfolio management system is rated as on track.

#### 13. Milestones

Estimated Approval	Estimated Completion <sup>a</sup>
15 August 2016	31 May 2018

#### 14. Linked Documents

	Required Document	Disclosure Date
(i) Environment	IEE - Initial Environment Examination	
Weblink:	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-ieee">http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-ieee</a>	25-MAY-2016
	IEE - Initial Environment Examination	
	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-jun-2016-ieee">http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-jun-2016-ieee</a>	10-JUN-2016
	IEE - Initial Environment Examination	
	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-ieee">http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-ieee</a>	24-MAY-2016
	IEE - Initial Environment Examination	
	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-jun-2016-iee">http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-jun-2016-iee</a>	10-JUN-2016
(ii) Involuntary resettlement	RP - Resettlement Plan	
Weblink:	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-rp">http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-rp</a>	24-MAY-2016
	RP - Resettlement Plan	
	<a href="http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-rp">http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-rp</a>	23-MAY-2016

<sup>a</sup> For Tranches, this refers to the financial closing date.

## I. BACKGROUND

1. The quality, coverage, and reliability of water supply and sanitation (WSS) infrastructure and services have not kept pace with the rapid growth of the economy and the population of secondary towns in the Republic of Azerbaijan (Azerbaijan). The deficiencies are adding to household costs and diminishing the quality of life of the residents of the towns. Recognizing the need to overcome the current problems and constraints, the State Program on Poverty Reduction and Sustainable Development for 2008–2015<sup>1</sup> (state program) committed to improving access to basic services through improved WSS coverage and service quality by 2015. This included 100% coverage in the capital city Baku and 80%–85% coverage in Azerbaijan's secondary towns and villages with 24-hour water supply. Sustainable environmental management, good governance, and institutional effectiveness were also key strategic goals of the state program.

2. In response to the request from the Government of Azerbaijan, on 15 August 2009, the Asian Development Bank (ADB) and the government negotiated a framework financing agreement for the multitranche financing facility (MFF) to finance the Water Supply and Sanitation Investment Program (the Investment Program). The MFF aims to address the development needs of Azerbaijan's secondary towns (including Agdash, Aghjabedi, Balakan, Beylagan, Goychay, Nakhchivan, and peri-urban areas surrounding Nakhchivan) through the adoption of a long-term and holistic approach to: (i) constructing WSS infrastructure to boost service coverage, quality, and reliability; (ii) developing institutional effectiveness, including management and governance; and (iii) instituting program management facilities to oversee program implementation and treatment of technical requirements.

3. On 23 September 2009, ADB's Board of Directors approved the MFF for an amount not exceeding \$600 million to finance the Investment Program. The Investment Program's executing agencies are the Azersu Joint Stock Company (Azersu) and the State Amelioration and Water Management Committee (SAWMC). Project 1, with a loan amount of \$75 million, was approved on 14 October 2009 and will close on 30 June 2017. Project 2, with a loan amount of \$300 million, was approved on 22 December 2011 and will close on 30 June 2017. Project 3, with a loan amount of \$150 million, was approved on 5 December 2013 and will close on 31 May 2018.

4. The government submitted a periodic financing request (PFR) for the fourth tranche on 31 March 2016. Project 4 will serve as additional financing for Project 2 of the MFF, to cover increased cost resulting from: (i) changes in design criteria, (ii) administrative changes in designation of geographic coverage of secondary towns, and (iii) associated time delays in implementation as detailed in paragraph 17. A fact-finding mission was fielded in April 2016 to conduct due diligence and ascertain the need and validity of the PFR. It was determined that Project 4 is in line with the overall objective of the MFF and will help meet the outcomes as outlined in paragraph 2.

## II. ASSESSMENT OF MFF IMPLEMENTATION

### A. Sector Policy, Strategy, and Road Map

5. Delivering improved urban WSS services is a key priority of the government, being essential to improve the quality of life, attract investment, and raise productivity. The government's priorities are to (i) improve access to WSS services through rehabilitation of aging infrastructure and network expansion for residents to enjoy 24-hour pressurized water supply, and (ii) reform the policy and regulatory framework to ensure the long-term sustainability of the utilities. The long-term urban WSS investment plan (2008–2020)<sup>2</sup> prepared in 2008 draws from the state program and is estimated to cost \$3.5 billion. It comprises physical and nonphysical investments to address medium-term (2008–2015) and long-term (2016–2020) needs (Table 1).

<sup>1</sup> Approved by Presidential Decree No. 3043 on 15 September 2008 (<http://www.economy.gov.az>).

<sup>2</sup> Azersu, 2008. *Water and Sanitation Investment Plan (2008–2020)*. Baku.

**Table 1: Urban Water Supply and Sanitation Investment Plan Estimates**  
(\$ million)

Item	2008–2015	2016–2020	Total	Share of Total (%)
WSS infrastructure development	1,186	2,264	3,450	97.00
Institutional effectiveness	9	21	30	1.00
Program management facility	40	25	65	2.00
<b>Total</b>	<b>1,235</b>	<b>2,310</b>	<b>3,545</b>	<b>100.00</b>

WSS = water supply and sanitation.

Source: Azersu estimates.

6. Projects 1, 2, and 3 have been structured to sustain the service delivery improvements, operational efficiency enhancement, and continuity of reforms as envisaged under the outcome and objectives of the MFF. The sector roadmap as outlined in the state program also called for specific targets, including (i) the provision of reliable and clean water supply system for 80%–85% of the population in regional towns, and (ii) establishment of 80% sewerage treatment in large cities. To this end, Projects 1, 2, and 3 have been successful in achieving the objectives of the MFF and are on track for meeting the specific targets of the sector roadmap. Projects 1, 2, and 3 are also in line with ADB's Country Partnership Strategy, 2014–2018.<sup>3</sup>

7. The policy and regulatory framework identified a series of challenges for the sector, including (i) the ability to progressively increase tariffs and overcome shortfall in operation and maintenance costs to achieve financial sustainability, (ii) the ability to develop staff capacity to plan, design, and manage the WSS system and services, and (iii) the ability to ensure infrastructure/asset creation. At the same time, a set of sequenced actions were identified to address these challenges, including (i) institutional improvements for WSS service delivery; (ii) capacity development for better system planning, operations, and maintenance; (iii) enhanced cost recovery through metering, billing, and collection tariffs; (iv) increased efficiency for timely processing of effective WSS projects; (v) asset management; (vi) introducing a performance benchmarking system; and (vii) a twinning arrangement with an external WSS utility to support capacity development. Under Projects 1, 2, and 3, some of these actions were achieved, including (i) expanding the jurisdictions of towns to ensure optimal WSS systems design; (ii) building the capacity of the utilities to efficiently reduce physical and commercial losses and helping them put together long-term master plans; (iii) facilitating a five-year capacity building program with Suez Environnement S.A.<sup>4</sup> to improve Azersu's operations; and (iv) increasing WSS tariffs by 40% across various customer groups in 2011. On 16 May 2016, tariffs were increased from 16%–20% for water, and 150%–230% for sewerage.

8. Main lessons learned from Projects 1, 2, and 3 are (i) consistent tariff increases are politically difficult, especially when service delivery is not universal in quality. In order for tariffs to be justified, continued improvement to the operations and coverage is needed; and (ii) financial sustainability is a process where both the revenue and cost have to be managed with a long-term vision. Proper asset management, continued capacity building of staff, and coordination with the Tariff Commission of Azerbaijan will be the key elements to achieve this goal.

## **B. Assessment of Investment Program Implementation**

9. **Project 1.** Project 1 aims to improve WSS services in parts of two secondary towns, Goychay and Nakhchivan. Key civil works include (i) water distribution and sewage system reconstruction and extension in Goychay; and (ii) new water intake, transmission mains and treatment facilities, and trunk sewers in Nakhchivan. In terms of institutional effectiveness, a

<sup>3</sup> ADB.2014. *Country Partnership Strategy: Azerbaijan, 2014–2018*. Manila.

<sup>4</sup> Suez Environnement S.A. is a French-based utility company with operations in the water treatment and waste management sectors.

twinning program was designed for both SAWMC and Azersu under Project 1 to improve their operational efficiency, reform their management structure, and introduce cost-saving and revenue improving measures. A Portuguese water utility operator, Aguas de Portugal Internacional, has been engaged as part of the support to SAWMC under the twinning program over a period of 2 years (2016–2018). Azersu, on the other hand, independently engaged Suez Environnement S.A., a French water company in 2013. As the Suez capacity-building program is comprehensive in nature and covers all elements envisioned under the ADB twinning program, it was deemed that the ADB twinning program for Azersu would no longer be required.

10. **Performance.** About 22 kilometers (km) of water network, 18 km of sewer network, and a water treatment plant with a capacity of 40,000 cubic meters/day ( $m^3/day$ ) have been completed in Nakhchivan. In Goychay, about 60 km of water supply and 53 km of sewer network have been completed. The total number of beneficiaries for Project 1 reached 101,960. Project 1 has successfully met the output indicators for the WSS network in the design and monitoring framework. To date, all works have been completed, and \$73.44 million have been disbursed. The loan will close in June 2017 to enable the Investment Program management consultants (IPMC) to continue supervision of Project 2, which is part of the IPMC's terms of reference. Project 1's performance under the ADB portfolio management system is rated as '*on track*'.

11. **Project 2.** Project 2 aims to complement the works under Project 1 through the provision of WSS services in the remaining parts of Goychay and Nakhchivan, as well as for two additional secondary towns—Agdash and Beylagan. Key civil works include (i) water distribution and sewage system reconstruction and extension in Agdash, Beylagan, and Goychay, and (ii) construction of wastewater treatment plant (WWTP) in each town. Under the institutional component, UNICEF has also completed a public outreach program on better hygiene and sanitation practices for children and teachers in selected schools.

12. **Performance.** The total number of beneficiaries for Project 2 reached over 183,000. In total, about 480 km of water supply network, 1,000  $m^3$  of storage reservoirs, 460 km of sewer network, and two WWTPs with a total capacity of 43,000  $m^3/day$  have been completed. All civil works in Nakhchivan and Goychay towns have been completed. WSS works in Agdash and Beylagan will be completed in December 2016. Due to cost overruns in the Azersu subprojects, the WWTPs in Agdash and Beylagan, as well as some remaining WSS network extensions were dropped from Project 2 and included under Project 4.

13. As of 28 July 2016, total contracts awarded under Project 2 were \$293.55 million (97% of the loan amount) and total disbursement was \$238.83 million (80% of loan amount). Project 2's performance under the ADB portfolio management system is rated as '*on track*'.

14. **Project 3.** Project 3 aims to improve the water supply and sewerage network in Aghjabedi town and peri-urban towns of Nakhchivan. Key civil works include (i) rehabilitation of existing bore wells and construction of new wells; (ii) rehabilitation of the existing reservoirs and construction of new reservoirs; (iii) construction of sewage collection network; (iv) WWTP, and (v) associated workshop and office buildings.

15. **Performance.** Project 3 will benefit a total population of 50,394. Under the Aghjabedi subproject, approximately 266 km of water supply network, 8,000  $m^3$  of storage reservoirs, 245 km of sewer network, and a WWTP with 20,000  $m^3/day$  capacity will be constructed. The contract for Aghjabedi WSS was awarded in June 2016 and contract awards for WWTP network and IPMC are targeted for Q4 2016. Under the Nakhchivan subproject, 64.80 km of water supply network and 51.67 km of sewer network will be constructed for peri-urban Nakhchivan. The water treatment plant and the WWTP for Nakhchivan are being completed under Project 1 and Project 2 respectively, and would also serve the peri-urban towns. The WSS contract in Nakhchivan was awarded in December 2015, while IPMC contract was awarded in March 2016.

16. As of 28 July 2016, total contracts awarded under Project 3 were \$33.52 million (22% of the loan amount) and total disbursement was \$21.74 (14.5% of loan amount). Project 3's performance under the ADB portfolio management system is rated as 'on track'.

17. **Compliance.** The government has complied with all undertakings in the FFA. Azersu has complied with all sector and financial covenants. For safeguards covenants, environmental management plans (EMPs) were incorporated in civil works contracts prior to tender. Azersu has also complied with environmental covenants under ongoing civil works contracts. The status of compliance with all covenants and undertakings is summarized in Supplementary Appendix B.

18. **Cost Overruns.** The factors for the cost overruns under Project 2 are three-fold: (i) design changes—Azersu made a technical decision to increase the per-capita water consumption from 120 liters per capita per day (lpcd) to 180 lpcd for all service areas under its coverage. As the original design was based on the 120 lpcd consumption rate, the engineering designs for Agdash, Beylagan, and Goychay were modified to comply with the new parameters, which is outside of the control of Project 2.<sup>5</sup> The design for a network of larger capacity resulted in a significant increase in total cost, as all assumptions, including diameters of pipes, number of wells, size of reservoirs all increased; (ii) time delays—the change in design also led to delays in the implementation of civil works and the subsequent award of contracts. Starting dates for contracts were delayed by 2 years on average. Due to the significant delays, the overall price escalation of raw materials and equipment also contributed to the cost overruns; and (iii) administrative changes—in December 2012, a Presidential Decree was issued for Agdash, redefining the boundaries of Agdash town to include additional areas not anticipated under the original design. The combination of this administrative reallocation and the change in design criteria has led to significant cost escalations in Agdash in particular.

19. In order to achieve the outputs and outcomes under the MFF, Balakan town, which was originally envisaged under the MFF, has been moved to the second MFF that will be processed in 2019, as the additional financing is necessary to complete the WSS networks in Agdash and provide the much-needed wastewater treatment in Agdash and Beylagan towns. Without proper wastewater treatment facilities, the provision of water will lead to significant environmental impacts and will negate the broader goal of the Investment Program. With the additional financing in place, the civil works and the beneficiary targets will be met despite the changes discussed in paragraph 1.

### III. PERIODIC FINANCING REQUEST

20. The additional financing will be used for completing the civil works in Agdash and Beylagan towns overseen by Azersu. The government's PFR is included in Supplementary Appendix A. Project 4 meets the additional financing eligibility criteria in ADB's Operations Manual Section D14.<sup>6</sup> Specifically, it meets the criteria for the second scenario where additional financing is needed for individual projects under an MFF (to scale up, change the scope and/or implementation arrangements, and/or meet cost overruns and/or financing gaps) but is within the original facility amount approved by the Board. Further, Project 4 also complies with the eligibility criteria set forth in paragraph 4 of ADB's Operations Manual Section H5 through meeting the following standards:

- (i) **Delivery of expected outputs.** Consistent with the overall MFF's development objectives, the outcome and target values of the outcome indicators remain unchanged (paragraphs 21–23). The revised design and monitoring framework is in Appendix 1. It is also consistent with Azerbaijan Country Operations Business Plan,

<sup>5</sup> From 2012–2013, 30 Turkish technical experts helped Azersu on technical and operational matters. One of the recommendations was to increase the consumption from 120 lpcd to 180 lpcd. This recommendation was adopted by Azersu at the corporate level and implemented across all of Azersu's operational areas.

<sup>6</sup> ADB. 2015. Multitranches Financing Facility. *Operations Manual*. OM D14/BP. Manila.

- 2016–2018.<sup>7</sup>
- (ii) **Satisfactory implementation progress and on track rating.** Projects 1, 2, and 3 under the MFF have achieved ‘on-track’ rating. Project 4 is financially sound, technically feasible, and economically viable (paragraphs 9–16, 30–31).
  - (iii) **Satisfactory compliance with safeguard policy requirements.** Project 4 complies with the Safeguard Policy Statement (2009) (SPS) in its design and implementation (paragraph 17).
  - (iv) **Successful management of risks.** Project 4 is at an advanced stage of readiness in terms of design and contracting (paragraphs 27–28); measures are in place for improving its performance (paragraphs 32–35); and risk mitigation measures are in place and successful implementation of Project 4 will not be threatened by major risks (paragraph 41).

#### **A. Impact and Outcome**

21. The impact of Project 4 will be improved water supply and sanitation services in the urban centers of Agdash and Beylagan. The outcome of Project 4 will be improved coverage, continuity, and quality of water supplies and wastewater disposal in Agdash and Beylagan.<sup>8</sup>

#### **B. Outputs**

22. The selection of activities under Project 4 is based on the same objectives, namely to (i) increase the extraction of water from existing and new sources, (ii) improve water distribution network to provide between 90% to 100% of the households with safe and reliable water supply, and (iii) minimize the environmental impact to ground water and health for the local population. Outputs for Project 4 include: (i) improved water supply system efficiency through the rehabilitation and replacement, and expanded coverage in Agdash, and (ii) improved sewerage and sanitation system efficiency through construction and expanded coverage in Agdash and Beylagan. Overall, approximately 37.2 km of water supply network, 5,000 m<sup>3</sup> of reservoirs, 42.6 km of sewerage network, and two WWTPs, each with capacity of 20,000 m<sup>3</sup>/day will be constructed under Project 4.

23. Program Support will also provide the management and technical support by IPMC to the Investment Program Management Office (IPMO) staff for overseeing construction of the WSS network and WWTPs in Agdash and Beylagan. IPMO staff from previous projects will be retained.

#### **C. Investment and Financing Plans**

24. Project 4 is estimated to cost \$100 million (Table 2). The government has requested a loan of \$75 million from ADB’s ordinary capital resources to help finance Project 4. The loan will have a 21-year term, including a grace period of 4 years, an annual interest rate determined in accordance with ADB’s London Interbank Offered Rate (LIBOR-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements.<sup>9</sup>

<sup>7</sup> ADB. 2014. *Country Operations Business Plan: Azerbaijan, 2016–2018*. Manila.

<sup>8</sup> Project 4 focuses on the remaining works in Agdash and Beylagan that were not covered under Project 2 financing, while Goychay and Nakhchivan are fully financed under Project 2.

<sup>9</sup> The maturity premium on the loan is not applicable.

**Table 2: Project Investment Plan**  
(\$ million)

Item <sup>a,b</sup>	Agdash	Beylagan	Total
<b>A. Civil Works<sup>c</sup></b>			
1. Wastewater Treatment Plant (20,000 m <sup>3</sup> / day)	20.00	20.00	40.00
2. Water Supply and Sanitation Network	44.00		44.00
<b>Subtotal</b>	<b>64.00</b>	<b>20.00</b>	<b>84.00</b>
<b>B. Investment Program Management Consultants</b>	1.57	0.49	2.06
<b>C. Contingencies<sup>c</sup></b>	9.04	2.83	11.87
<b>D. Financing Charges During Implementation<sup>d</sup></b>	1.58	0.49	2.07
<b>Total (A+B+C+D)</b>	<b>76.19</b>	<b>23.81</b>	<b>100.00</b>

<sup>a</sup> Includes taxes and duties of \$13.12 million to be financed from government resources.

<sup>b</sup> Estimates based on mid-2016 prices.

<sup>c</sup> Physical contingencies are estimated at about 11% for civil works. Price contingencies computed at 2% on foreign exchange costs and 8% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes: (i) interest during construction computed at the 3-year fixed swap rate plus a spread of 0.5%; (ii) commitment charges computed as 0.15% per year on the undisbursed loan amount.

Sources: Azersu and Asian Development Bank estimates.

25. The financing plan is presented in Table 3.

**Table 3: Financing Plan**

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank (OCR loan)	75.00	75.00
Government <sup>a</sup>	25.00	25.00
<b>Total</b>	<b>100.00</b>	<b>100.00</b>

<sup>a</sup> Government resources will fund taxes, duties, and civil works.

Sources: Azersu and Asian Development Bank estimates.

#### D. Implementation Arrangements

26. Azersu will remain the executing agency as it has acquired the necessary technical, financial, and managerial capabilities to implement ADB projects. The IPMO will comprise counterpart staff from Azersu as well as from the IPMC. The IPMO established at Azersu is headed by a full-time program director and staffed with technical, financial, procurement, and safeguards specialists. In line with the IPMC terms of reference attached to the Facility Administration Manual, the existing IPMC will continue design-related and supervision of works in Project 4. The IPMC will include a team of international and national consultants. The implementation arrangements are summarized in Table 4 and described in the Project Administration Manual (PAM) in Appendix 4.

**Table 4: Implementation Arrangements**

Aspects	Arrangements		
Implementation period	September 2016–November 2017		
Estimated completion date	30 November 2017 (Loan closing date: 31 May 2018)		
Management			
(i) Oversight body	Cabinet of Ministers and Office of the Deputy Prime Minister		
(ii) Executing agency	Azersu Joint Stock Company		
(iii) Implementing agency	Azersu Joint Stock Company		
(iv) Implementation unit	Investment Program Management Office in Azersu		
Procurement	International Competitive Bidding	3 civil works contracts	\$84 million
Consulting services	IPMC	87 person-months	\$1.96 million
	Least Cost Selection (auditor)	24 person-months	\$0.1 million
Retroactive financing and/or advance contracting	Advance action for recruitment of consultants and procurement of civil works. Retroactive financing is available for up to 20% of the loan amount.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook 2015</i> (as amended from time to time) and detailed arrangements agreed upon between the Government and ADB.		

ADB = Asian Development Bank, IPMC = investment program management consultants.

Sources: Azersu and Asian Development Bank estimates.

## **E. Project Readiness**

27. Detailed engineering designs for the WSS network and the WWTPs have been completed and reviewed by the IPMC. The government submitted to ADB design documents for the WSS network and WWTPs for Agdash and Beylagan, along with the PFR on 18 March 2016. Bidding documents have been prepared for the Beylagan WWTP, including the bill of quantities (see Appendix 4). Tender for the Beylagan WWTP is scheduled for Q3 2016. Initial environmental examinations (IEEs) for Agdash and Beylagan were submitted, including the EMPs for works to be included in the bidding documents. For involuntary resettlement, the land acquisition and resettlement plans (LARPs) for Agdash and Beylagan towns have been prepared.

## **F. Advance Contracting and Retroactive Financing**

28. In order to ensure the timely implementation of Project 4, the following will apply: (i) advance contracting of consulting services and civil works; and (ii) retroactive financing of advance contracting actions for consulting services and civil works expenditures not exceeding an amount equal to 20% of the loan amount incurred before loan effectiveness but not earlier than 12 months before the signing of the loan agreement. The government has been advised that the approval of advance contracting and retroactive financing would not commit ADB to subsequently approve its financing.

# **IV. DUE DILIGENCE**

## **A. Technical**

29. Detailed surveys and investigations were carried out before the design of the WSS network in Agdash. Locations of the WWTPs in Agdash and Beylagan were determined based on the topography, location of the treated effluent discharge point, other environmental considerations and land availability. The executing agency has established and improved their operations and maintenance capacity through the previous projects, thereby improving the efficiency and lowering the cost for operations and maintenance as a whole.

## **B. Economic and Financial**

30. **Economic Analysis.** Economic analysis was conducted separately for Agdash and Beylagan and was based on the consideration of project alternatives, results of the socioeconomic survey, and available national statistics. As Project 4 is additional financing, evaluations were made on the level of benefits that are gained through the implementation of both Project 2 and 4, and are measured against the status quo in each town. Both subprojects are economically viable, as the economic internal rate of return in the base case (14.0% for Agdash and 12.70% for Beylagan) exceeds the economic opportunity cost of capital, assumed at 12%. Sensitivity analysis indicates that the subprojects' economic rate of return is viable under certain stressed conditions. The detailed analysis is presented in Appendix 6.

31. **Financial Analysis.** Even though the tariff structure was increased in May 2016, it remains insufficient to ensure operations and maintenance costs. Azersu's financial position remains heavily subsidized by the government, as it is a 100% state-owned entity. Government transfers are allocated to Azersu on an annual basis to cover capital investments as well as operational expenses. However, Azersu has been taking steps to improve its financial position by (i) establishing a master plan to improve current assets, increase customer base, reduce water loss and increase collections; (ii) engaging Suez Environnement S.A. to conduct an overall technical training program to ensure that operational aspects of the business are conducted in a professional manner. ADB's engagement with Azersu through the MFF and Project 4 is founded on the belief that the economic benefits derived from the MFF are significant and also provide the platform for

ADB to engage with Azersu to assist them in achieving financial sustainability in the long run. Financial analysis has been conducted for Agdash and Beylagan and is presented in Appendix 6.

### **C. Governance**

32. A procurement capacity assessment indicated that Azersu staff capacity has significantly improved in terms of understanding ADB procurement guidelines and their application. The IPMC has supported the IPMO in procurement activities. Under Projects 1, 2, and 3, the IPMC has provided on-the-job training to IPMO staff. However, ADB experience shows that Azersu needs continued support during bid document preparation and evaluation to achieve a higher standard of procurement. Project 4 will continue ADB's support through the engagement of a procurement consultant under IPMC and the proactive involvement of ADB staff in bid evaluation.

33. The financial management assessment concluded that the financial management, reporting, and monitoring systems of Azersu are generally satisfactory, with moderate risk to ADB. Areas for improvement include updating audit operations manual, integration of financial systems with project accounts, establishing a system for coordinating financial transactions, and timely submission of audited project financial statements. Azersu IPMO is adequately staffed with efficient and experienced personnel. Project staff is trained in procedural requirements of ADB and the national accounting standards. The financial management systems at Azersu applied in the agency's project operations are found to provide a reasonable and sufficient basis for determining the state of finances at agency and project levels. Fund flows from ongoing projects and local sources are satisfactory. Separate project accounts in Azersu's financial systems and funds flow procedures are established for each project to facilitate monitoring and control.

34. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and Azersu. The specific policy requirements and supplementary measures are described in the PAM. Thus far, Project 4 has not raised any integrity concerns.

35. Project 4 intends to maximize transparency by communicating relevant project information to stakeholders by various means. The executing agency will disclose all key project-related information, including the scope, cost, and financial and institutional arrangements of Project 4, required project safeguard reports, and procurement related information. When the WWTP is completed or when Azersu introduces new tariffs, extensive consultations must be made to ensure effective participation, understanding, and support of the stakeholders.

### **D. Poverty, Social, and Gender Dimensions**

36. Poverty and social assessments indicate that women strongly support the Investment Program. Women perceive that it will improve their living environment, create employment, decrease their time in poverty, and reduce the incidence of waterborne illnesses. Projects 1, 2, and 3 are categorized as Effective Gender Mainstreaming (EGM) in design and Project 4 continues the EGM. The gender action plans prepared for Projects 1, 2, and 3 are being implemented by Azersu, which is being guided by a gender consultant appointed under a regional technical assistance.<sup>10</sup> Project 4 will be similarly implemented.

37. Project 4 will directly benefit more than 75,215 residents, including a female population of 37,864, and improve living conditions and the economic and urban environment of Agdash and Beylagan. Specifically, Project 4 will benefit all households in the project area, including the poor, the internally displaced, and households headed by women, the latter estimated at 25% of households. Gender features are integrated into the Gender Action Plan for Project 4 and will

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<sup>10</sup> ADB. 2010. *Technical Assistance for Promoting Gender-Inclusive Growth in Central and West Asia Developing Member Countries*. Manila. Under Output 4 of the RETA, ADB supports national capacity for incorporating gender through learning events and monitoring of loan gender activities.

include women in (i) recruitment in the utilities including customer service agents; (ii) awareness programs on health, hygiene, and customer rights; and (iii) a strong emphasis on collecting qualitative data to assess the project's impact on improving the quality of women's lives. The public outreach program is being extended to support Project 4 and a gender specialist will be appointed for the IPMC to ensure implementation of the gender action plan. The inclusion of a target for female employment, although small, is also a new development to show the government's commitment to women in male-dominated sectors.

## **E. Safeguards**

38. **Environment.** Azersu updated the environmental assessment and review framework based on the SPS and endorsed the framework in November 2011. Project 4 is classified as category B for the environment. The IEEs prepared under Project 2 have been revised and updated to incorporate all new elements of Project 4.<sup>11</sup> No significant environmental impacts are anticipated during or after construction. Most of the predicted impacts that are likely during construction, such as dust, disturbance to residents, and traffic, etc., have been addressed through mitigation measures in the IEEs and EMPs. Consultations were undertaken with stakeholders and incorporated into the IEEs. Azersu has one full-time environment specialist in the IPMO. Furthermore, the contractor in Project 4 will be required to prepare site-specific EMPs for each subproject in order to implement the environmental requirements of the IEEs. The EMPs will be part of the construction contracts. Implementation of the EMPs will be monitored by the IPMC, as well as the safeguard specialists appointed under IPMO in close coordination with the environmental specialists of the contractors. Project 4 was screened 'medium' risk for climate change. Hence, the project design will be assessed during implementation, against expected climate change and appropriate adaptation measures will be incorporated.

39. **Involuntary Resettlement.** Project 4 is classified as category B for involuntary resettlement. Azersu updated the land acquisition and resettlement framework (LARF) based on the SPS and endorsed it in November 2011.<sup>12</sup> The LARF was posted on the ADB and the executing agency's websites on 17 November 2011. Project 4 includes constructing water supply and sewerage infrastructure along the existing road network and within the existing right of way. The land for boreholes, water intake, reservoirs, and associated facilities in Agdash and Beylagan towns is mostly owned by SuKanals.<sup>13</sup> There are 0.27 hectares of privately owned land being acquired for the construction of three wells in the Agdash subproject. The land will be acquired from two households with a total of 11 members. In the Beylagan subproject, a total of 4.95 hectares of land will be acquired prior to project initiation from 44 households (with a total of 207 members) for the provision of a 28-meter wide easement and construction of a 1,769-meter-long sewer pipe. In Beylagan, a squatter (with a total of four members) will lose temporary structures in the wastewater treatment plant site. LARPs have been prepared for the Agdash and Beylagan subprojects in consultation with the affected persons. Any unanticipated impacts will be mitigated based on the provisions of the LARF. Azersu has sufficient institutional capacity for supervising and monitoring the LARPs with support from the IPMC.

40. **Indigenous Peoples.** Project 4 is classified as category C for indigenous peoples. The Investment Program area does not include communities that may be defined as indigenous peoples under the SPS.

<sup>11</sup> The IEEs for Agdash and Beylagan subprojects were disclosed on ADB's website on 10 June 2016.

<sup>12</sup> The LARPs were posted on ADB's website on 23 May 2016 for the Beylagan subproject and 24 May 2016 for the Agdash subproject.

<sup>13</sup> SuKanals are local water supply and sewerage agencies.

## F. Risks and Mitigating Measures

41. Major risks and mitigating measures are summarized in Table 5 and described in detail in the risk assessment and risk management plans (Appendix 9).

**Table 5: Summary of Risks and Mitigating Measures**

<b>Risks</b>	<b>Mitigating Measures</b>
Government's inability to protect the environment from discharge of untreated sewage into water bodies	Project 4 will support Azersu in constructing sewage treatment plants to meet sewage discharge standards compliant with national legislation.
Lack of construction contractor meeting the qualifications criteria of the subproject and industry interest in bidding for projects in Azerbaijan	Azersu and ADB will conduct market surveys to assess contractor availability and will extend invitations to high potential bidders during the tender process. In the event there is no explicit interest, Azersu will also contact contractors who have worked on previous projects.
Lack of capacity to evaluate bids to assess potential integrity issues	The capacity of Azersu in bid evaluation will be enhanced by the engagement of a procurement consultant under the IPMC, and through the proactive involvement of ADB staff during procurement reviews.
Insufficient viability gap funding from the government to Azersu, to ensure financially sustainable service delivery	The proposed twinning program will help put in place efficient operation and maintenance, and prudent financial management practices. Improved service delivery and revenue surplus generation plans through progressive tariff increase will ensure that any viability gap funding shortfalls are adequately managed.

ADB = Asian Development Bank, Azersu = Azersu Joint Stock Company, IPMC = Investment Program management consultants.

Source: Asian Development Bank.

## G. Risk Categorization

42. Project 4 is low risk as (i) it is financed by a loan amount not exceeding \$200 million, (ii) ADB has a sound track record in the sector in Azerbaijan, (iii) the executing agency has capacity with externally financed project administration, and (iv) safeguards categorization is lower than A.

## V. ASSURANCES

43. The government and Azersu have assured ADB that implementation of Project 4 shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents.

44. The government and Azersu have agreed with ADB on certain covenants for Project 4, which are set forth in the loan agreement and project agreement.

## VI. RECOMMENDATION

45. On the basis of the approval by ADB's Board of Directors for the provision of loans under the multitranche financing facility in an aggregate principal amount not exceeding \$600,000,000 to the Republic of Azerbaijan for the Water Supply and Sanitation Investment Program, it is recommended that the President approve the proposed tranche as described in paragraphs 20–28 and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements for the proposed tranche.

## DESIGN AND MONITORING FRAMEWORK FOR PROJECT 4

### Impact the Project is Aligned with:

Improved water supply and sanitation services in the urban centers of Agdash and Beylagan (project defined)

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<b>Outcome</b> Improved coverage, continuity, and quality of water supplies and wastewater disposal in Agdash and Beylagan <sup>1</sup>	a. Residents' (including 100% female headed households) access to sanitation facilities increased from 36% in 2011 to 95% by 2018  b. Residents' (including 100% female headed households) access to 24-hour potable water supply increased from 57% in 2011 to 95% by 2018	a-b. Executing Agency (AZERSU) Annual Reports, project component completion and commissioning certificates provided by investment program construction supervision consultant	Government's inability to protect the environment and natural resources from unregulated discharge of untreated sewage into water bodies
<b>Outputs</b> 1. Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash	By 2018: 1a. Pressurized water of 180 liters per capita supplied for 24-hour daily (2016 baseline: 80)  1b. Additional 37.2 km of distribution networks constructed to connect 3,493 households (2016 baseline: 0)  1c. Additional 5,000 m3 storage reservoirs constructed (2016 baseline: 0)	1.a-c. Quarterly progress reports prepared by Azersu, monthly reports by IPMC	Lack of construction contractor and industry experience with similar capacity while bidding for projects in Azerbaijan  Substantial variance between the bid prices and engineer's estimate
2. Sewerage and sanitation system efficiency improved through construction and coverage expansion in Agdash and Beylagan	By 2018; 2a. Additional 42.6 km of sewer lines constructed to connect 3,200 households connected to sewerage facilities (2016 baseline: 0)	2.a-b. Quarterly progress reports prepared by Azersu, monthly progress reports by IPMC	

<sup>1</sup> Tranche 4 will be additional financing for Agdash and Beylagan only. Investments in Goychay and Nakhchivan are financed under Tranche 2 of the MFF.

	2b. 2 Sewage treatment plants with 20,000 m <sup>3</sup> /day capacity each constructed to treat and safely discharge of sewage benefiting 37,864 females in Agdash and Beylagan (2016 baseline: 0)		
<p><b>Key Activities with Milestones</b></p> <p><b>Output 1.</b> Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash and Beylagan</p> <p>1.1 Advanced contracting process for water supply and sanitation network completed (Q4 2016)  1.2 WSS contract awarded (Q4 2016)  1.3 Construction of WSS network completed (Q4 2017)</p> <p><b>Output 2.</b> Sewerage and sanitation system efficiency improved through construction and coverage expansion</p> <p>2.1 Master bid documents and engineering designs approved (Q2 2016)  2.2 Advanced contracting process for WWTPs in Agdash and Beylagan completed (Q4 2016)  2.3 Contracts for WWTPs awarded (Q4 2016)  2.4 Construction of WWTPs completed (Q4 2017)</p> <p>Program Management  3.1 IPMC consultants hired (Q4 2016)  3.2 Supervision works completed (Q4 2017)</p>			
<p><b>Inputs</b></p> <p>ADB Finance: OCR = \$75 million (additional finance)  Government: \$25 million</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not Applicable</p>			

IPMC = investment program management consultants, km = kilometer, m<sup>3</sup> = cubic meter, OCR = ordinary capital resources, Q = quarter, WSS = water supply and sanitation, WWTP = wastewater treatment plant.

Source: Asian Development Bank.

LOAN NUMBER \_\_\_\_\_-AZE

LOAN AGREEMENT  
(Ordinary Operations)

(Water Supply and Sanitation Investment Program - Project 4)

between

REPUBLIC OF AZERBAIJAN

and

ASIAN DEVELOPMENT BANK

DATED \_\_\_\_\_

**LOAN AGREEMENT  
(Ordinary Operations)**

LOAN AGREEMENT dated \_\_\_\_\_ between REPUBLIC OF AZERBAIJAN ("Borrower") and ASIAN DEVELOPMENT BANK ("ADB").

WHEREAS

(A) by a framework financing agreement dated 15 August 2009 between the Borrower and ADB, ADB has agreed to provide a multitranche financing facility to the Borrower for the purposes of financing projects under the Water Supply and Sanitation Investment Program ("Investment Program");

(B) by a periodic financing request dated 18 March 2016, as amended, the Borrower has applied to ADB for a loan for the purposes of the Project described in Schedule 1 to this Loan Agreement;

(C) the Project will be carried out by the Azersu Open Joint Stock Company ("Azersu"), and for this purpose the Borrower will make available to Azersu the proceeds of the loan provided for herein upon terms and conditions satisfactory to ADB; and

(D) ADB has agreed to make a loan to the Borrower from ADB's ordinary capital resources upon the terms and conditions set forth herein and in the Project Agreement of even date herewith between ADB and Azersu;

NOW THEREFORE the parties hereto agree as follows:

**ARTICLE I**

**Loan Regulations; Definitions**

Section 1.01. All the provisions of the Ordinary Operations Loan Regulations Applicable to LIBOR-Based Loans Made from ADB's Ordinary Capital Resources, dated 1 July 2001 ("Loan Regulations"), are hereby made applicable to this Loan Agreement with the same force and effect as if they were fully set forth herein, subject, however, to the following modifications:

(a) Section 3.03 is deleted and the following is substituted therefor:

**Commitment Charge; Credit.** (a) The Borrower shall pay a commitment charge on the unwithdrawn amount of the Loan at the rate and on the terms specified in the Loan Agreement.

(b) ADB shall provide to the Borrower a credit at the rate specified in the Loan Agreement, which credit shall

remain fixed for the term of the Loan. ADB shall apply the credit against the interest payable by the Borrower.

- (b) Section 3.06 is deleted and the following is substituted therefor:

**Rebate.** (a) Following any announcement by ADB that the Fixed Spread applicable to new Loans shall be reduced, ADB shall provide a Rebate to any Borrower with an outstanding Loan on which a higher Fixed Spread is applicable. The amount of the Rebate shall be determined by multiplying (i) the difference between the Fixed Spread applicable to the outstanding Loan and the Fixed Spread that will be applied to new Loans (expressed as a percentage per annum); by (ii) the principal amount of the outstanding Loan on which the Borrower shall pay interest for all interest periods commencing on and after the effective date of the lower Fixed Spread that will be applied to new Loans.

(b) Following any announcement by ADB that its Funding Cost Margin calculations with respect to any Loan Currency (or Approved Currency) in any Semester resulted in ADB achieving savings, ADB shall provide a Rebate to the Borrower. The amount of the Rebate shall be determined by multiplying (i) the Funding Cost Margin (expressed as a percentage per annum); by (ii) the principal amount of the Loan on which the Borrower shall pay interest for the Interest Period commencing immediately after the Semester for which the Funding Cost Margin was calculated. ADB shall apply the amount of the Rebate against the interest payable by the Borrower for the Interest Period commencing immediately after the Semester for which the Funding Cost Margin was calculated.

- (c) Section 3.07 is deleted and the following is substituted therefor:

**Surcharge.** (a) Following any announcement by ADB that the Fixed Spread applicable to new Loans shall be increased, any Borrower with an outstanding Loan on which a lower Fixed Spread is applicable shall pay ADB a Surcharge. The amount of the Surcharge shall be determined by multiplying (i) the difference between the Fixed Spread that will be applied to new Loans and the Fixed Spread applicable to the outstanding Loan (expressed as a percentage per annum), by; (ii) the principal amount of the outstanding Loan on which the Borrower shall pay interest for all interest periods commencing on and after the effective date of the higher Fixed Spread that will be applied to new Loans.

(b) Following any announcement by ADB that its Funding Cost Margin calculations with respect to any Loan Currency (or Approved Currency) in any Semester resulted in

ADB incurring additional costs, the Borrower shall pay ADB a Surcharge. The amount of the Surcharge shall be determined by multiplying (i) the Funding Cost Margin (expressed as a percentage per annum); by (ii) the principal amount of the Loan on which the Borrower shall pay interest for the Interest Period commencing immediately after the Semester for which the Funding Cost Margin was calculated. ADB shall add the amount of the Surcharge to the interest payable by the Borrower for the Interest Period commencing immediately after the Semester for which the Funding Cost Margin was calculated.

Section 1.02. Wherever used in this Loan Agreement, the several terms defined in the Loan Regulations have the respective meanings therein set forth unless modified herein or the context otherwise requires. Additional terms used in this Loan Agreement have the following meanings:

(a) “Azersu” means the Azersu Open Joint Stock Company established under Decree 252 dated 11 June 2004 of the President of the Borrower;

(b) “Consulting Guidelines” means the Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers (2013, as amended from time to time);

(c) “Consulting Services” means the services to be financed out of the proceeds of the Loan as described in paragraph 2 of Schedule 1 to this Loan Agreement;

(d) “Environmental Assessment and Review Framework” or “EARF” means the environmental assessment and review framework for the Investment Program, including any update thereto, agreed between the Borrower and ADB and incorporated by reference in the FFA;

(e) “Environmental Management Plan” or “EMP” means each environmental management plan for the Project, including any update thereto, incorporated in the IEE;

(f) “Environmental Safeguards” means the principles and requirements set forth in Chapter V, Appendix 1, and Appendix 4 (as applicable) of the SPS;

(g) “Facility” means the multitranche financing facility provided by ADB to the Borrower for purposes of financing projects under the Investment Program;

(h) “FFA” means the framework financing agreement dated 15 August 2009 between ADB and the Borrower with respect to the Facility;

(i) “GAP” means the gender action plan for the Project, including any update thereto, prepared by the Borrower and cleared by ADB;

(j) “Initial Environmental Examination” or “IEE” means each initial environmental examination for the Project, including any update thereto, prepared and

submitted by the Borrower pursuant to the requirements set forth in the EARF and cleared by ADB;

(k) “Involuntary Resettlement Safeguards” means the principles and requirements set forth in Chapter V, Appendix 2, and Appendix 4 (as applicable) of the SPS;

(l) “LARF” means the land acquisition and resettlement framework for the Investment Program, including any update thereto, agreed between the Borrower and ADB and incorporated by reference in the FFA;

(m) “LARP” means each land acquisition and resettlement plan for the Project, including any update thereto, prepared and submitted by the Borrower pursuant to the requirements set forth in the LARF and cleared by ADB;

(n) “Loan Disbursement Handbook” means ADB’s Loan Disbursement Handbook (2015, as amended from time to time);

(o) “Output” means an output specified in Schedule 1 to this Loan Agreement;

(p) “PAM” means the project administration manual for the Project dated 22 July 2016 and agreed between the Borrower and ADB, as updated from time to time in accordance with the respective administrative procedures of the Borrower and ADB;

(q) “PFR” means the periodic financing request submitted or to be submitted by the Borrower, for the purposes of each loan under the Facility, and for the purpose of this Loan Agreement means the periodic financing request dated 18 March 2016, as amended;

(r) “Procurement Guidelines” means ADB’s Procurement Guidelines (2015, as amended from time to time);

(s) “Procurement Plan” means the procurement plan for the Project dated 22 July 2016 and agreed between the Borrower and ADB, as updated from time to time in accordance with the Procurement Guidelines, the Consulting Guidelines, and other arrangements agreed with ADB;

(t) “Safeguard Policy Statement” or “SPS” means ADB’s Safeguard Policy Statement (2009);

(u) “Safeguards Monitoring Report” means each report prepared and submitted by the Borrower to ADB that describes progress with implementation of, and compliance with, the EMPs and the LARPs, including any corrective and preventative actions;

(v) “Works” means construction or civil works to be financed out of the proceeds of the Loan, including services such as drilling or mapping, and project related services that are provided as part of a single responsibility or turnkey contract, but excluding Consulting Services; and

(w) “WSS” means water supply and sanitation.

## ARTICLE II

### The Loan

Section 2.01. (a) ADB agrees to lend to the Borrower from ADB's ordinary capital resources an amount of seventy-five million Dollars (\$75,000,000), as such amount may be converted from time to time through a Currency Conversion in accordance with the provisions of Section 2.06 of this Loan Agreement.

(b) The Loan has a principal repayment period of 17 years, and a grace period as defined in subsection (c) hereinafter.

(c) The term "grace period" as used in subsection (b) hereinabove means the period prior to the first Principal Payment Date in accordance with the amortization schedule set forth in Schedule 2 to this Loan Agreement.

Section 2.02. The Borrower shall pay to ADB interest on the principal amount of the Loan withdrawn and outstanding from time to time at a rate for each Interest Period equal to the sum of:

- (a) LIBOR; and
- (b) 0.60% as provided by Section 3.02 of the Loan Regulations less a credit of 0.10% as provided by Section 3.03 of the Loan Regulations.

Section 2.03. The Borrower shall pay a commitment charge of 0.15% per annum. Such charge shall accrue on the full amount of the Loan (less amounts withdrawn from time to time), commencing 60 days after the date of this Loan Agreement.

Section 2.04. Interest and other charges on the Loan shall be payable semiannually on 15 February and 15 August in each year.

Section 2.05. The Borrower shall repay the principal amount of the Loan withdrawn from the Loan Account in accordance with the provisions of Schedule 2 to this Loan Agreement.

Section 2.06. (a) The Borrower may at any time request any of the following Conversions of the terms of the Loan in order to facilitate prudent debt management:

- (i) a change of the Loan Currency of all or any portion of the principal amount of the Loan, whether withdrawn and outstanding or unwithdrawn, to an Approved Currency;
- (ii) a change of the interest rate basis applicable to all or any portion of the principal amount of the Loan withdrawn and outstanding from a Floating Rate to a Fixed Rate, or vice versa; and

- (iii) the setting of limits on the Floating Rate applicable to all or any portion of the principal amount of the Loan withdrawn and outstanding by the establishment of an Interest Rate Cap or Interest Rate Collar on said Floating Rate.

(b) Any conversion requested pursuant to subsection (a) hereinabove that is accepted by ADB shall be considered a "Conversion", as defined in Section 2.01(6) of the Loan Regulations, and shall be effected in accordance with the provisions of Article V of the Loan Regulations and the Conversion Guidelines.

### **ARTICLE III**

#### **Use of Proceeds of the Loan**

Section 3.01. The Borrower shall make the proceeds of the Loan available to Azersu upon terms and conditions satisfactory to ADB and shall cause Azersu to apply such proceeds to the financing of expenditures on the Project in accordance with the provisions of this Loan Agreement and the Project Agreement.

Section 3.02. The proceeds of the Loan shall be allocated and withdrawn in accordance with the provisions of Schedule 3 to this Loan Agreement, as such Schedule may be amended from time to time by agreement between the Borrower and ADB.

Section 3.03. Except as ADB may otherwise agree, the Borrower shall procure, or cause to be procured, the items of expenditure to be financed out of the proceeds of the Loan in accordance with the provisions of Schedule 4 to this Loan Agreement. ADB may refuse to finance a contract where any such item has not been procured under procedures substantially in accordance with those agreed between the Borrower and ADB or where the terms and conditions of the contract are not satisfactory to ADB.

Section 3.04. Except as ADB may otherwise agree, the Borrower shall cause all items of expenditure financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.

Section 3.05. The Loan Closing Date for the purposes of Section 9.02 of the Loan Regulations shall be 31 May 2018 or such other date as may from time to time be agreed between the Borrower and ADB.

## **ARTICLE IV**

### **Particular Covenants**

Section 4.01. (a) The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound applicable technical, financial, business, and development practices.

(b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 5 to this Loan Agreement and the Project Agreement.

Section 4.02. The Borrower shall make available, or cause to be made available, promptly as needed, the funds, facilities, services, land and other resources, as required, in addition to the proceeds of the Loan, for the carrying out of the Project.

Section 4.03. The Borrower shall enable ADB's representatives to inspect the Project and the Works, and any relevant records and documents.

Section 4.04. The Borrower shall take all actions which shall be necessary on its part to enable Azersu to perform its obligations under the Project Agreement, and shall not take or permit any action which would interfere with the performance of such obligations.

## **ARTICLE V**

### **Effectiveness**

Section 5.01. A date 90 days after the date of this Loan Agreement is specified for the effectiveness of this Loan Agreement for the purposes of Section 10.04 of the Loan Regulations.

## **ARTICLE VI**

### **Miscellaneous**

Section 6.01. The Minister of Finance of the Borrower is designated as representative of the Borrower for the purposes of Section 12.02 of the Loan Regulations.

Section 6.02. The following addresses are specified for the purposes of Section 12.01 of the Loan Regulations:

For the Borrower

Ministry of Finance  
S. Vurgun Street, 135  
AZ1022  
Baku, Republic of Azerbaijan

Facsimile Numbers:

(994-12) 404 4720  
(994-12) 404 4721.

For ADB

Asian Development Bank  
6 ADB Avenue  
Mandaluyong City  
1550 Metro Manila  
Philippines

Facsimile Numbers:

(632) 636-2444  
(632) 636-2484.

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Loan Agreement to be signed in their respective names as of the day and year first above written and to be delivered at the principal office of ADB.

REPUBLIC OF AZERBAIJAN

By \_\_\_\_\_  
[Name and designation]

ASIAN DEVELOPMENT BANK

By \_\_\_\_\_  
[Name and designation]

## SCHEDULE 1

### Description of the Project

1. The objective of the Investment Program is to finance projects with one or more of the following components:

- (a) development of WSS infrastructure;
- (b) improvement of institutional effectiveness; and
- (c) establishment of program management facilities.

2. As a part of the Investment Program, the Project shall comprise the following Outputs:

**Output A. Water Supply and Sanitation Infrastructure Development:**

This Output comprises:

- (a) construction in Agdash of: (i) four new bore wells; (ii) a new reservoir with an approximate capacity of 5,000 cubic meters; (iii) water distribution networks; (iv) a sewage collection network, pump stations, and effluent discharge pipelines; and (iv) a waste water treatment plant with an approximate capacity of 20,000 cubic meters per day; and
- (b) construction in Beylagan of a waste water treatment plant with an approximate capacity of 20,000 cubic meters per day.

**Output B. Program Support:** This Output comprises provision of management and technical support to the program management office for overseeing construction of WSS and sewage treatment facilities in Agdash and Beylagan.

3. The Project is expected to be completed by 30 November 2017.

**SCHEDULE 2****Amortization Schedule****(Water Supply and Sanitation Investment Program - Project 4)**

1. The following table sets forth the Principal Payment Dates of the Loan and the percentage of the total principal amount of the Loan payable on each Principal Payment Date (Installment Share). If the proceeds of the Loan shall have been fully withdrawn as of the first Principal Payment Date, the principal amount of the Loan repayable by the Borrower on each Principal Payment Date shall be determined by ADB by multiplying: (a) the total principal amount of the Loan withdrawn and outstanding as of the first Principal Payment Date; by (b) the Installment Share for each Principal Payment Date, such repayment amount to be adjusted, as necessary, to deduct any amounts referred to in paragraph 4 of this Schedule, to which a Currency Conversion applies.

Sequence	Date Payment Due	Installment Share <sup>1</sup> (Expressed as a %)
1	15 August 2020	2.941176
2	15 February 2021	2.941176
3	15 August 2021	2.941176
4	15 February 2022	2.941176
5	15 August 2022	2.941176
6	15 February 2023	2.941176
7	15 August 2023	2.941176
8	15 February 2024	2.941176
9	15 August 2024	2.941176
10	15 February 2025	2.941176
11	15 August 2025	2.941176
12	15 February 2026	2.941176
13	15 August 2026	2.941176
14	15 February 2027	2.941176
15	15 August 2027	2.941176
16	15 February 2028	2.941176
17	15 August 2028	2.941176
18	15 February 2029	2.941176
19	15 August 2029	2.941176
20	15 February 2030	2.941176
21	15 August 2030	2.941176
22	15 February 2031	2.941176
23	15 August 2031	2.941176
24	15 February 2032	2.941176
25	15 August 2032	2.941176
26	15 February 2033	2.941176
27	15 August 2033	2.941176

28	15 February 2034	2.941176
29	15 August 2034	2.941176
30	15 February 2035	2.941176
31	15 August 2035	2.941176
32	15 February 2036	2.941176
33	15 August 2036	2.941176
34	15 February 2037	2.941192
	Total	100.000000

2. If the proceeds of the Loan shall not have been fully withdrawn as of the first Principal Payment Date, the principal amount of the Loan repayable by the Borrower on each Principal Payment Date shall be determined as follows:

(a) To the extent that any proceeds of the Loan shall have been withdrawn as of the first Principal Payment Date, the Borrower shall repay the amount withdrawn and outstanding as of such date in accordance with paragraph 1 of this Schedule.

(b) Any withdrawal made after the first Principal Payment Date shall be repaid on each Principal Payment Date falling after the date of such withdrawal in amounts determined by ADB by multiplying the amount of each such withdrawal by a fraction, the numerator of which shall be the original Installment Share specified in the table in paragraph 1 of this Schedule for said Principal Payment Date (the Original Installment Share) and the denominator of which shall be the sum of all remaining Original Installment Shares for Principal Payment Dates falling on or after such date, such repayment amounts to be adjusted, as necessary, to deduct any amounts referred to in paragraph 4 of this Schedule, to which a Currency Conversion applies.

3. Withdrawals made within two calendar months prior to any Principal Payment Date shall, for the purposes solely of calculating the principal amounts payable on any Principal Payment Date, be treated as withdrawn and outstanding on the second Principal Payment Date following the date of withdrawal and shall be repayable on each Principal Payment Date commencing with the second Principal Payment Date following the date of withdrawal.

4. Notwithstanding the provisions of paragraphs 1 and 2 of this Schedule, upon a Currency Conversion of all or any portion of the withdrawn principal amount of the Loan to an Approved Currency, the amount so converted in said Approved Currency that shall be repayable on any Principal Payment Date occurring during the Conversion Period, shall be determined by ADB by multiplying such amount in its currency of denomination immediately prior to said Conversion by either: (i) the exchange rate that reflects the amounts of principal in said Approved Currency payable by ADB under the Currency Hedge Transaction relating to said Conversion; or (ii) if ADB so determines in accordance with the Conversion Guidelines, the exchange rate component of the Screen Rate.

5. If the principal amount of the Loan withdrawn and outstanding from time to time shall be denominated in more than one Loan Currency, the provisions of this Schedule shall apply separately to the amount denominated in each Loan Currency, so as to produce a separate amortization schedule for each such amount.

### SCHEDULE 3

#### Allocation and Withdrawal of Loan Proceeds

##### General

1. The table attached to this Schedule sets forth the Categories of items of expenditure to be financed out of the proceeds of the Loan and the allocation of the Loan proceeds to each such Category ("Table"). (Reference to "Category" in this Schedule is to a Category or Subcategory of the Table).

##### Basis for Withdrawal from the Loan Account

2. Except as ADB may otherwise agree, the proceeds of the Loan shall be disbursed on the basis of the withdrawal percentage for each item of expenditure set forth in the Table.

##### Reallocation

3. Notwithstanding the allocation of Loan proceeds and the withdrawal percentages set forth in the Table,

- (a) if the amount of the Loan allocated to any Category appears to be insufficient to finance all agreed expenditures in that Category, ADB may, by notice to the Borrower, (i) reallocate to such Category, to the extent required to meet the estimated shortfall, amounts of the Loan which have been allocated to another Category but, in the opinion of ADB, are not needed to meet other expenditures; and (ii) if such reallocation cannot fully meet the estimated shortfall, reduce the withdrawal percentage applicable to such expenditures in order that further withdrawals under such Category may continue until all expenditures thereunder shall have been made; and
- (b) if the amount of the Loan allocated to any Category appears to exceed all agreed expenditures in that Category, ADB may, by notice to the Borrower, reallocate such excess amount to any other Category.

##### Disbursement Procedures

4. Except as ADB may otherwise agree, the Loan proceeds shall be disbursed in accordance with the Loan Disbursement Handbook.

##### Retroactive Financing

5. Withdrawals from the Loan Account may be made to finance eligible expenditures incurred under the Project before the Effective Date, but not earlier than 12 months before the date of this Loan Agreement in connection with items to be retroactively financed, subject to a maximum amount equivalent to 20% of the Loan amount.

TABLE

<b>ALLOCATION AND WITHDRAWAL OF LOAN PROCEEDS (Water Supply and Sanitation Investment Program - Project 4)</b>			
<b>Number</b>	<b>Item</b>	<b>Total Amount Allocated for ADB Financing (\$) Category</b>	<b>Basis for Withdrawal from the Loan Account</b>
1	Works and Consulting Services	75,000,000	84.75% of total expenditure claimed
	Total	75,000,000	

## SCHEDULE 4

### Procurement of Works and Consulting Services

#### General

1. The procurement of Works and Consulting Services shall be subject to and governed by the Procurement Guidelines, and the Consulting Guidelines, respectively.
2. Except as ADB may otherwise agree, Works shall be procured and Consulting Services shall be selected and engaged only on the basis of the procurement methods and the selection methods set forth below. These methods are subject to, among other things, the detailed arrangements and threshold values set forth in the Procurement Plan. The Borrower may only modify the procurement method and the selection methods or threshold values with the prior agreement of ADB, and modifications must be set out in updates to the Procurement Plan.
3. All terms used in this Schedule and not otherwise defined in this Loan Agreement have the meanings provided in the Procurement Guidelines and/or the Consulting Guidelines, as applicable.

#### Works

4. Works shall be procured on the basis of International Competitive Bidding.

#### Conditions for Award of Contract

5. The Borrower shall not award any Works contract which involves environmental impacts until Azersu has incorporated the relevant provisions from the EMP into the Works contract.
6. The Borrower shall not award any Works contract involving involuntary resettlement impacts until the Borrower has prepared and submitted to ADB the final LARP based on the detailed design, and obtained ADB's clearance of such LARP.

#### Consulting Services

7. Except as set forth in the paragraph below, the Borrower shall apply Quality- and Cost-Based Selection for Consulting Services.
8. The Borrower shall apply the following selection methods for the specified Consulting Services, in accordance with, among other things, the procedures set forth in the Procurement Plan:
  - (a) Least-Cost Selection for auditing services; and
  - (b) Quality- and Cost-Based Selection for the investment program management consultants.

Industrial or Intellectual Property Rights

9. (a) The Borrower shall ensure that all Works procured (including without limitation all computer hardware, software and systems, whether separately procured or incorporated within other goods and services procured) do not violate or infringe any industrial property or intellectual property right or claim of any third party.

(b) The Borrower shall ensure that all contracts for the procurement of Works contain appropriate representations, warranties and, if appropriate, indemnities from the contractor or supplier with respect to the matters referred to in subparagraph (a) of this paragraph.

10. The Borrower shall ensure that all ADB-financed contracts with consultants contain appropriate representations, warranties and, if appropriate, indemnities from the consultants to ensure that the Consulting Services provided do not violate or infringe any industrial property or intellectual property right or claim of any third party.

ADB's Review of Procurement Decisions

11. Contracts procured under international competitive bidding procedures and contracts for Consulting Services shall be subject to prior review by ADB, unless otherwise agreed between the Borrower and ADB and set forth in the Procurement Plan.

12. In the case of a contract for Works, which is subject to ADB's prior review, the Borrower shall seek ADB's prior approval of any modification or waiver of the terms and conditions of the contract, including:

- (a) granting an extension of the stipulated time for completion of a contract for a period of 1 month or more, or which is likely to require an extension of the Loan Closing Date, and
- (b) increases in aggregate of the original price by more than 5% (for the avoidance of doubt, such increase shall take into account any previous change under such contract).

13. In the case of a contract for Works, which is subject to ADB's post review, ADB shall review the required contract modification or waiver and respond to the Borrower as soon as practicable, but not later than 1 month after the receipt of the required document.

14. The Borrower shall provide to ADB copies of all time extensions, modifications or waivers to the contracts (including change orders) within 1 month following amendment of the contract.

## SCHEDULE 5

### Execution of Project; Financial Matters

#### Implementation Arrangements

1. The Borrower and Azersu shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the PAM. Any subsequent change to the PAM shall become effective only after approval of such change by the Borrower and ADB. In the event of any discrepancy between the PAM and this Loan Agreement, the provisions of this Loan Agreement shall prevail.

#### Counterpart Support

2. The Borrower shall ensure that (a) counterpart funds necessary for the smooth and successful completion of the Project are provided in a timely manner; (b) additional funds, as and when needed, are provided to meet any funding shortfall or cost overruns during the Project implementation; and (c) funds necessary for the operation and maintenance costs of Azersu, including, with limitation, (i) costs of sales; (ii) administrative expenses; (iii) selling and distribution expenses; and (iv) other operating expenses are provided in a timely manner until the Project completion.

#### Tariff Levels and Payment Recovery

3. The Borrower shall ensure that tariffs are reviewed annually for customers receiving improved WSS services to ensure that they are set at appropriate levels, taking into account the real costs of delivering the improved services. The Borrower shall cause Azersu to ensure that such revised tariffs are implemented.

4. The Borrower shall cause Azersu to ensure that the WSS service providers in Agdash and Beylagan have an adequate enforcement mechanism for effective collection of service fees and penalizing defaulters, deterring non-payment and ensuring sustainability of their operations.

#### Financial Covenant

5. Prior to Project completion, the Borrower shall cause Azersu to undertake the following critical actions to improve its financial management capacity, operational efficiency and financial sustainability:

- (a) introduce internal corporate audit system for internal control;
- (b) introduce analytical cost accounting system that can serve as a basis for comprehensive financial modelling and average cost pricing;
- (c) introduce fully automated accounting, financial control and reporting systems based on the accounting principles under the international financial reporting system, including fully automated billing and collection system;

- (d) achieve 100% coverage through metering to ensure 100% collection (pre-payment) in Agdash, Aghjabedi, Beylagan and Goychay; and
- (e) introduce a computerized control system for the water distribution services to optimize the water supply operations and to bring to the minimum technical losses caused by the non-revenue water.

### Environment

6. The Borrower shall cause Azersu to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the IEEs and EMPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.

### Land Acquisition and Involuntary Resettlement

7. The Borrower shall cause Azersu to ensure that all land and all rights-of-way required for the Project, are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with (a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; (c) the LARF; and (d) all measures and requirements set forth in the respective LARPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.

8. Without limiting the application of the Involuntary Resettlement Safeguards, the LARF or the LARPs, the Borrower shall cause Azersu to ensure that no physical or economic displacement takes place in connection with the Project until:

- (a) compensation and other entitlements have been provided to affected people in accordance with the LARPs; and
- (b) a comprehensive income and livelihood restoration program has been established in accordance with the LARPs.

### Indigenous Peoples

9. The Borrower shall cause Azersu to ensure that the Project does not have any indigenous peoples impacts, all within the meaning of the SPS. In the event that the Project does have any such impact, the Borrower shall cause Azersu to take all steps required to ensure that the Project complies with the applicable laws and regulations of the Borrower and with the SPS.

### Human and Financial Resources to Implement Safeguards Requirements

10. The Borrower shall make available or cause Azersu to make available necessary budgetary and human resources to fully implement the EMPs and the LARPs.

### Safeguards – Related Provisions in Bidding Documents and Works Contracts

11. The Borrower shall cause Azersu to ensure that all bidding documents and contracts for Works contain provisions that require contractors to:

- (a) comply with the measures and requirements relevant to the contractor set forth in the IEEs, the EMPs and the LARPs (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;
- (b) make available a budget for all such environmental and social measures;
- (c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs or the LARPs;
- (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and
- (e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.

#### Safeguards Monitoring and Reporting

12. The Borrower shall cause Azersu to do the following:

- (a) submit semiannual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;
- (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs or the LARPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and
- (c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMPs or the LARPs promptly after becoming aware of the breach.

#### Prohibited List of Investments

13. The Borrower shall cause Azersu to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.

#### Labor Standards, Health and Safety

14. The Borrower shall ensure that the core labor standards and the Borrower's applicable laws and regulations are complied with during Project implementation. The Borrower shall cause Azersu to include specific provisions in the bidding documents and contracts financed by ADB under the Project requiring that the contractors, among other things: (a) comply with the Borrower's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; (b) do not use child labor; (c) do not discriminate workers in respect of employment and occupation; (d) do not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.

15. The Borrower shall cause Azersu to strictly monitor compliance with the requirements set forth in paragraph 14 above and provide ADB with regular reports.

#### Gender and Development

16. The Borrower shall cause Azersu to ensure that (a) the GAP is implemented in accordance with its terms; (b) adequate resources are allocated for implementation of the GAP; and (c) progress on implementation of the GAP, including progress toward achieving key gender outcome and output targets, are regularly monitored and reported to ADB.

#### Public Consultation and Participation

17. The Borrower shall ensure that Azersu implements a public consultation and participation plan comprising (a) a community awareness and participation program; (b) a hygiene and sanitation program; and (c) a training program for rayon water users associations.

#### Governance and Anticorruption

18. The Borrower and Azersu shall (a) comply with ADB's Anticorruption Policy (1998, as amended to date) and acknowledge that ADB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the Project; and (b) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation.

19. The Borrower and Azersu shall ensure that the anticorruption provisions acceptable to ADB are included in all bidding documents and contracts, including provisions specifying the right of ADB to audit and examine the records and accounts of the executing and implementing agencies and all contractors, suppliers, consultants, and other service providers as they relate to the Project.



LOAN NUMBER \_\_\_\_\_-AZE

PROJECT AGREEMENT

(Water Supply and Sanitation Investment Program - Project 4)

between

ASIAN DEVELOPMENT BANK

and

AZERSU OPEN JOINT STOCK COMPANY

DATED \_\_\_\_\_

## **PROJECT AGREEMENT**

PROJECT AGREEMENT dated \_\_\_\_\_ between ASIAN DEVELOPMENT BANK (“ADB”) and Azersu Open Joint Stock Company (“Azersu”).

### **WHEREAS**

(A) by a Loan Agreement of even date herewith between the Republic of Azerbaijan (“Borrower”) and ADB, ADB has agreed to make to the Borrower a loan of seventy-five million Dollars (\$75,000,000) on the terms and conditions set forth in the Loan Agreement, but only on the condition that the proceeds of the loan be made available to Azersu and that Azersu agrees to undertake certain obligations towards ADB set forth herein; and

(B) Azersu, in consideration of ADB entering into the Loan Agreement with the Borrower, has agreed to undertake the obligations set forth herein;

NOW THEREFORE the parties hereto agree as follows:

## **ARTICLE I**

### **Definitions**

Section 1.01. Wherever used in this Project Agreement, unless the context otherwise requires, the several terms defined in the Loan Agreement and in the Loan Regulations (as so defined) have the respective meanings therein set forth.

## **ARTICLE II**

### **Particular Covenants**

Section 2.01. (a) Azersu shall carry out the Project with due diligence and efficiency, and in conformity with sound applicable technical, financial, business, and development practices.

(b) In the carrying out of the Project and operation of the Project facilities, Azersu shall perform all obligations set forth in the Loan Agreement to the extent that they are applicable to Azersu, and all obligations set forth in this Project Agreement.

Section 2.02. Azersu shall make available, promptly as needed, the funds, facilities, services, land and other resources as required, in addition to the proceeds of the Loan, for the carrying out of the Project.

Section 2.03. (a) In the carrying out of the Project, Azersu shall employ competent and qualified consultants and contractors, acceptable to ADB, to an extent and upon terms and conditions satisfactory to ADB.

(b) Except as ADB may otherwise agree, Azersu shall procure all items of expenditures to be financed out of the proceeds of the Loan in accordance with the provisions of Schedule 4 to the Loan Agreement. ADB may refuse to finance a contract where any such item has not been procured under procedures substantially in accordance with those agreed between the Borrower and ADB or where the terms and conditions of the contract are not satisfactory to ADB.

Section 2.04. Azersu shall carry out the Project in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to ADB. Azersu shall furnish, or cause to be furnished, to ADB, promptly after their preparation, such plans, design standards, specifications and work schedules, and any material modifications subsequently made therein, in such detail as ADB shall reasonably request.

Section 2.05. Azersu shall take out and maintain with responsible insurers, or make other arrangements satisfactory to ADB for, insurance of Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice.

Section 2.06. Azersu shall maintain, or cause to be maintained, records and accounts adequate to identify the items of expenditure financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, its operations and financial condition.

Section 2.07. (a) ADB and Azersu shall cooperate fully to ensure that the purposes of the Loan will be accomplished.

(b) Azersu shall promptly inform ADB of any condition which interferes with, or threatens to interfere with, the progress of the Project, the performance of its obligations under this Project Agreement, or the accomplishment of the purposes of the Loan.

(c) ADB and Azersu shall from time to time, at the request of either party, exchange views through their representatives with regard to any matters relating to the Project, Azersu and the Loan.

Section 2.08. (a) Azersu shall furnish to ADB all such reports and information as ADB shall reasonably request concerning (i) the Loan and the expenditure of the proceeds thereof; (ii) the items of expenditure financed out of such proceeds; (iii) the Project; (iv) the administration, operations and financial condition of Azersu; and (v) any other matters relating to the purposes of the Loan.

(b) Without limiting the generality of the foregoing, Azersu shall furnish to ADB periodic reports on the execution of the Project and on the operation and management of the Project facilities. Such reports shall be submitted in such form and in such detail and within such a period as ADB shall reasonably request, and shall indicate, among other

things, progress made and problems encountered during the period under review, steps taken or proposed to be taken to remedy these problems, and proposed program of activities and expected progress during the following period.

(c) Promptly after physical completion of the Project, but in any event not later than 3 months thereafter or such later date as ADB may agree for this purpose, Azersu shall prepare and furnish to ADB a report, in such form and in such detail as ADB shall reasonably request, on the execution and initial operation of the Project, including its cost, the performance by Azersu of its obligations under this Project Agreement and the accomplishment of the purposes of the Loan.

Section 2.09. (a) Azersu shall (i) maintain separate accounts and records for the Project; (ii) prepare annual financial statements for the Project in accordance with financial reporting standards acceptable to ADB; (iii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with auditing standards acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report, which includes the auditors' opinion(s) on the financial statements and the use of the Loan proceeds, and a management letter (which sets out the deficiencies in the internal control of the Project that were identified in the course of the audit, if any); and (v) furnish to ADB, no later than 6 months after the close of the fiscal year to which they relate, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.

(b) ADB shall disclose the annual audited financial statements for the Project and the opinion of the auditors on the financial statements within 14 days of the date of ADB's confirmation of their acceptability by posting them on ADB's website.

(c) In addition to annual audited financial statements referred to in subsection (a) hereinabove, Azersu shall (i) provide its annual financial statements prepared in accordance with financing reporting standards acceptable to ADB; (ii) have its financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with auditing standards acceptable to ADB; (iii) as part of each such audit, have the auditors prepare the auditors' opinion(s) on the financial statements; and (iv) furnish to ADB, no later than 1 month after approval by the relevant authority, copies of such audited financial statements and auditors' opinion(s), all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.

(d) Azersu shall enable ADB, upon ADB's request, to discuss the financial statements for the Project and Azersu and its financial affairs where they relate to the Project with the auditors appointed by Azersu pursuant to subsections (a)(iii) and (c)(ii) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted only in the presence of an authorized officer of Azersu, unless Azersu shall otherwise agree.

Section 2.10. Azersu shall enable ADB's representatives to inspect the Project, the Goods and Works and any relevant records and documents.

Section 2.11. (a) Azersu shall, promptly as required, take all action within its powers to maintain its corporate existence, to carry on its operations, and to acquire, maintain and renew all rights, properties, powers, privileges and franchises which are necessary in the carrying out of the Project or in the conduct of its operations.

(b) Azersu shall at all times conduct its operations in accordance with sound applicable technical, financial, business, development and operational practices, and under the supervision of competent and experienced management and personnel.

(c) Azersu shall at all times operate and maintain its plants, equipment and other property, and from time to time, promptly as needed, make all necessary repairs and renewals thereof, all in accordance with sound applicable technical, financial, business, development, operational and maintenance practices.

Section 2.12. Except as ADB may otherwise agree, Azersu shall not sell, lease or otherwise dispose of any of its assets which shall be required for the efficient carrying on of its operations or the disposal of which may prejudice its ability to perform satisfactorily any of its obligations under this Project Agreement.

Section 2.13. Except as ADB may otherwise agree, Azersu shall apply the proceeds of the Loan to the financing of expenditures on the Project in accordance with the provisions of the Loan Agreement and this Project Agreement, and shall ensure that all items of expenditures financed out of such proceeds are used exclusively in the carrying out of the Project.

Section 2.14. Azersu shall promptly notify ADB of any proposal to amend, suspend or repeal any provision of its Charter, which, if implemented, could adversely affect the carrying out of the Project or the operation of the Project facilities. Azersu shall afford ADB an adequate opportunity to comment on such proposal prior to taking any affirmative action thereon.

### **ARTICLE III**

#### **Effective Date; Termination**

Section 3.01. This Project Agreement shall come into force and effect on the date on which the Loan Agreement comes into force and effect. ADB shall promptly notify Azersu of such date.

Section 3.02. All the provisions of this Project Agreement shall continue in full force and effect notwithstanding any cancellation or suspension under the Loan Agreement.

**ARTICLE IV****Miscellaneous**

Section 4.01. Any notice or request required or permitted to be given or made under this Project Agreement and any agreement between the parties contemplated by this Project Agreement shall be in writing. Such notice or request shall be deemed to have been duly given or made when it shall be delivered by hand, mail or facsimile to the party to which it is required or permitted to be given or made at its address hereinafter specified, or at such other address as such party shall have designated by notice to the party giving such notice or making such request. The addresses so specified are:

For ADB

Asian Development Bank  
6 ADB Avenue  
Mandaluyong City  
1550 Metro Manila  
Philippines

Facsimile Numbers:

(632) 636-2444  
(632) 636-2484.

For Azersu

Azersu Open Joint Stock Company  
67 Moscow Avenue  
AZ.1012  
Baku  
Republic of Azerbaijan

Facsimile Number:

(994-12) 430 2911.

Section 4.02. (a) Any action required or permitted to be taken, and any documents required or permitted to be executed, under this Project Agreement or on behalf of Azersu may be taken or executed by its President or by such other person or persons as he or she shall so designate in writing notified to ADB.

(b) Azersu shall furnish to ADB sufficient evidence of the authority of each person who will act under subsection (a) hereinabove, together with the authenticated specimen signature of each such person.

Section 4.03. No delay in exercising, or omission to exercise, any right, power or remedy accruing to either party under this Project Agreement upon any default shall impair any such right, power or remedy or be construed to be a waiver thereof or an acquiescence in such default; nor shall the action of such party in respect of any default, or any acquiescence in any default, affect or impair any right, power or remedy of such party in respect of any other or subsequent default.

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Project Agreement to be signed in their respective names as of the day and year first above written, and to be delivered at the principal office of ADB.

ASIAN DEVELOPMENT BANK

By \_\_\_\_\_  
[Name and Designation]

AZERSU OPEN JOINT STOCK  
COMPANY

By \_\_\_\_\_  
[Name and Designation]

# Project Administration Manual

Project Number: 42408-044  
Loan No. xxxx-AZE  
July 2016

Republic of Azerbaijan: Water Supply and Sanitation  
Investment Program – Project 4

## ABBREVIATIONS

ADB	– Asian Development Bank
Azersu	– Azersu Joint Stock Company
EA	– executing agency
EARF	– environmental assessment and review framework
EIRR	– economic internal rate of return
EMP	– environmental management plan
EOCC	– economic opportunity cost of capital
FAM	– facility administration manual
FFA	– framework financing agreement
FIRR	– financial internal rate of return
FGD	– focus group discussion
GAP	– gender action plan
GDP	– gross domestic product
GoA	– Government of Azerbaijan
IEC	– Information, education and communication
IEE	– initial environmental examination
JSC	– joint stock company
LIBOR	– London interbank offered rate
MFF	– multitranches financing facility
MOF	– Ministry of Finance
NGO	– nongovernment organization
PAM	– Project Administration Manual
PFR	– periodic financing request
PMF	– program management facility
ICB	– international competitive bidding
IPMC	– investment program management consultants
IPMO	– investment program management office
LARP	– land acquisition and resettlement plan
PPMS	– project performance management system
SAWMC	– State Amelioration and Water Management Corporation
SOE	– statement of expenditure
SPS	– Safeguards Policy Statement
TWUA	– town water users' association
WACC	– weighted average cost of capital
WSS	– water supply and sanitation
WWTP	– wastewater treatment plant

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### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the Water Supply and Sanitation Investment Program (Investment Program) on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the FAM.

Azersu Joint Stock Company (Azersu), the investment program executing agency, is wholly responsible for the implementation of ADB financed project, as agreed jointly between the borrower and ADB, and in accordance and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible to support implementation including compliance by Azersu of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the {loan/grant} agreement, the provisions of the loan agreement shall prevail.

After ADB President's approval of the loan, changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

## I. PROJECT DESCRIPTION

1. **Investment Program.** In response to the request of the Government of Azerbaijan (the government), a framework financing agreement (FFA) for the multitranche financing facility (MFF) to finance the Water Supply and Sanitation Investment Program (the Investment Program) was negotiated between the government and the Asian Development Bank (ADB) on 15 August 2009. The Investment Program aims to address development needs of Azerbaijan's secondary towns<sup>1</sup> through the adoption of a long-term and holistic approach to (i) build institutions, capacities and systems, and improve service delivery; (ii) promote reforms to bring about sustainable water supply and sanitation (WSS) service financing; and (iii) support the execution of priority components based upon a detailed sector analysis and the sector roadmap.

2. On 23 September 2009, ADB's Board of Directors approved the MFF for the amount not exceeding \$600 million to finance the Investment Program. The Investment Program's executing agencies (EAs) are the Azersu Joint Stock Company (Azersu), and the State Amelioration and Water Management Committee (SAWMC). Project 1 with the loan amount of \$75 million was approved on 14 October 2009. Project 2 with the loan amount of \$300 million was approved on 22 December 2011. Project 3 with the loan amount of \$150 million was approved on 5 December 2013. The loan closing dates for Projects 1, 2 and 3 are 30 June 2017, 30 June 2017 and 31 May 2018, respectively.

3. **Project 4.** Project 4 will serve as supplementary financing to Project 2 of the MFF for completing civil works in Agdash and Beylagan towns overseen by Azersu. Two components comprise the Project 4: (i) water supply and sanitation infrastructure development and (ii) program support. The first component consists of physical investments to improve the water supply and sanitation (WSS) network and construct a wastewater treatment plant in Agdash and wastewater treatment plant (WWTP) in Beylagan. The WWTPs being critical components of the MFF will minimize the environmental impact to ground water and health for the local population.

4. The second component will continue the management and technical support to the program through the investment program management consultants (IPMC) and investment program management office (IPMO).

5. Azersu will be the executing agency for Project 4.

6. **Impact and Outcome.** The impact of Project 4 is improved water supply and sanitation services in the urban centers of Agdash and Beylagan. The outcome of Project 4 will be improved coverage, continuity and quality of water supplies and wastewater disposal in Agdash and Beylagan.

7. **Outputs.** The project outputs are (i) improved efficiency of water supply system through rehabilitation and replacement, and expanded coverage in Agdash, and (ii) improved sewerage and sanitation system through construction and expanded coverage in Agdash and Beylagan.

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<sup>1</sup> The secondary towns included in the Investment Program are Agdash, Aghjabedi, Balakan, Beylagan, Goychay, Nakhchivan and peri-urban areas surrounding Baku and Nakhchivan, covering a total of about 500,000 residents.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

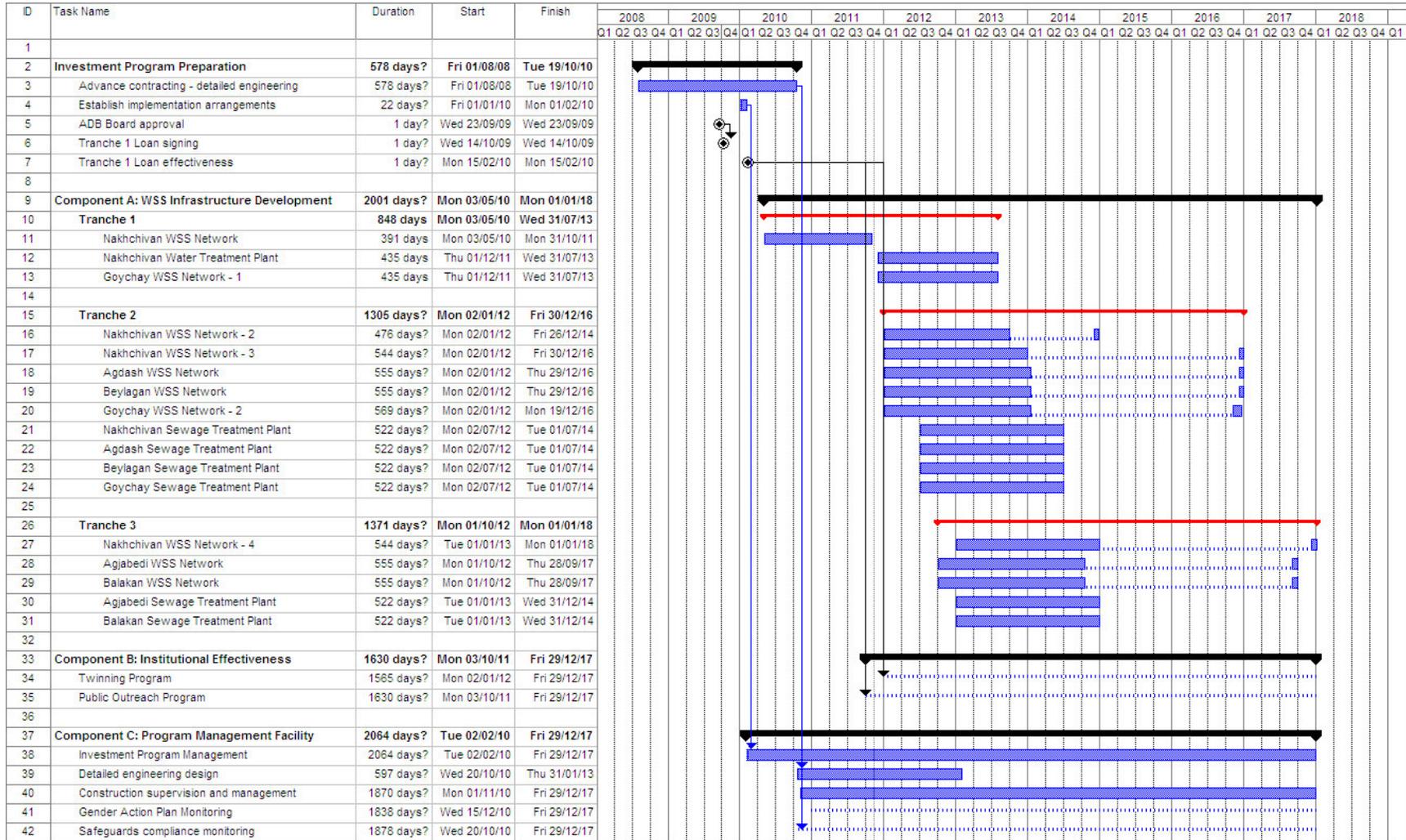
#### Project 4

		2016						
Indicative Activities		May	Jun	Jul	Aug	Sept	Oct	Party
1	Advance contracting actions	■	■	■	■	■		AZERSU, ADB
2	Management Approval			■				ADB
3	Tranche 2 Loan signing				■	■	■	MOF, AZERSU, ADB
4	Government legal opinion provided				■	■		MOF, AZERSU,
5	Government budget inclusion					■		MOF
6	Tranche 2 Loan effectiveness					■		MOF, MOJ

ADB = Asian Development Bank, Azersu = Azersu Joint Stock Company, MFF = multitranches financing facility, MOJ = Ministry of Justice, MOF = Ministry of Finance.

## B. Overall Project Implementation Plan

### Investment Program





### III. PROJECT MANAGEMENT ARRANGEMENT

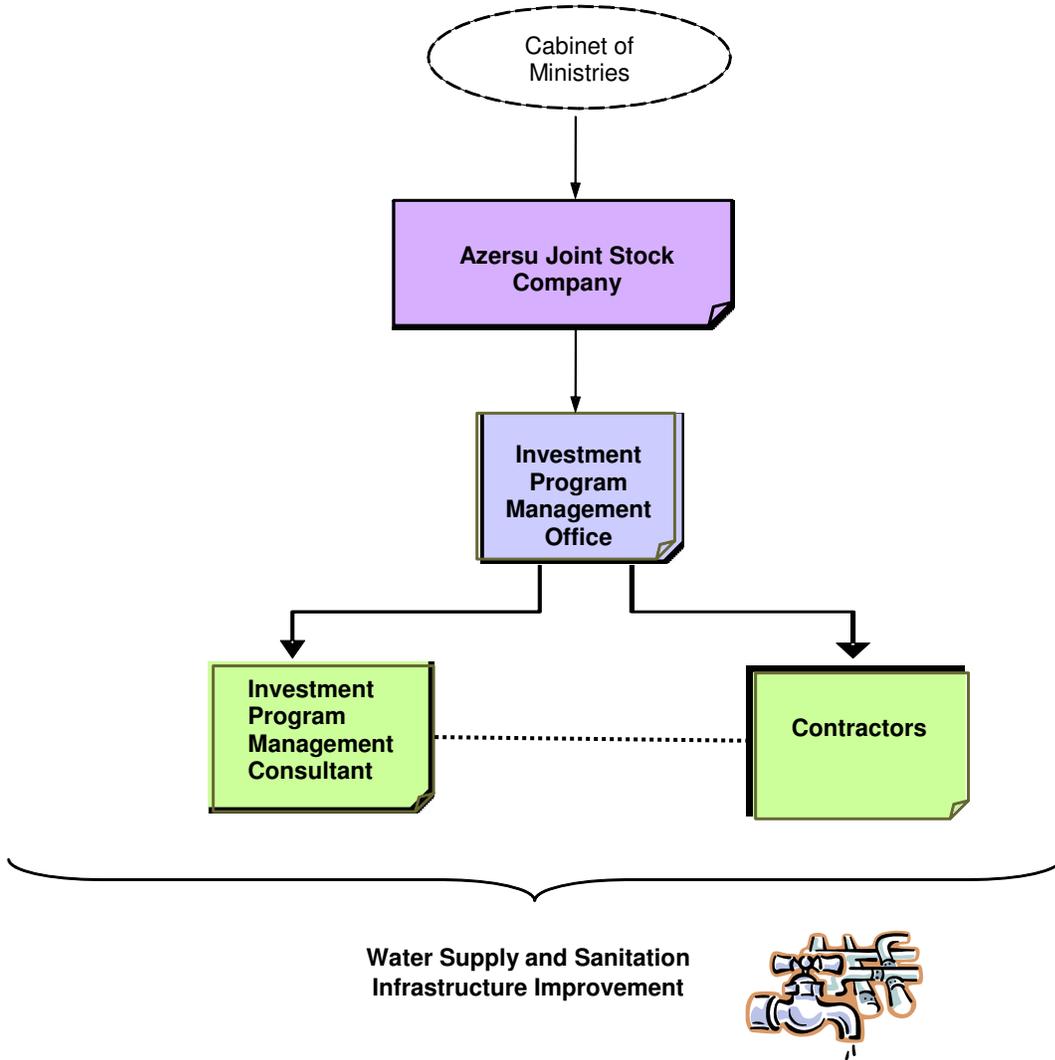
#### A. Project Implementation Organizations– Roles and Responsibilities

Implementation Organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> <li>• Program Steering Committee (Azersu, Ministry of Economic Development, Ministry of Finance, Ministry of Health, rayon administrations)</li> </ul>	<ul style="list-style-type: none"> <li>• provide policy direction and strategic oversight on ongoing and new government initiatives</li> <li>• resolve interagency problems</li> <li>• oversee the overall implementation progress of ongoing subprojects, and decide on the scope of future PFRs</li> <li>• meet at least once every 3 months and share the minutes of its meeting with ADB until investment program completion</li> </ul>
<ul style="list-style-type: none"> <li>• Executing Agency (Azersu)</li> </ul>	<ul style="list-style-type: none"> <li>• responsible for investment program oversight and administration</li> <li>• hold monthly meetings with JSCs and Sukanals to review progress</li> <li>• submit progress reports to the PSC for decision making</li> <li>• ensure compliance with investment program covenants</li> <li>• submit Investment Program documents, including audit reports, to ADB on time</li> </ul>
<ul style="list-style-type: none"> <li>• Investment Program Management Office (IPMO)</li> </ul>	<ul style="list-style-type: none"> <li>• responsible for executing the investment program including its development and management</li> <li>• provide hands-on training to JSCs and SuKanals staff</li> </ul>
<ul style="list-style-type: none"> <li>• Investment Program Management Consultant (IPMC)</li> </ul>	<ul style="list-style-type: none"> <li>• responsible for tendering, and construction supervision</li> <li>• responsible for completion safeguards compliance documents for all subprojects</li> <li>• responsible for assisting Azersu in preparing the periodic financing request</li> </ul>
<ul style="list-style-type: none"> <li>• ADB</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure technical and financial support and oversight according to the framework financing, and loan and project agreements</li> </ul>

**B. Key Persons Involved in Implementation**

<b>Executing Agency</b>	<b>Contact Information</b>
Azersu Joint Stock Company	Officer's Name: Mr. Ilgar Tagiyev Position: Head of Tenders and International Projects Management Department Telephone: + 994-12-431-4767 Email address: i.tagiyev@Azersu.az
<b>Asian Development Bank</b>	
Urban Development and Water Division Central and West Asia Department	Staff Name: Yong Ye Position: Director Telephone: +63-2-632 6864 Email address: <a href="mailto:yye@adb.org">yye@adb.org</a>
Mission Leader	Staff Name: Lu Shen Position: Senior Urban Development Specialist Telephone: +63-2-632 5417 Email address: <a href="mailto:lushen@adb.org">lushen@adb.org</a>

### C. Investment Program Organization Structure



#### IV. COSTS AND FINANCING

8. ADB will finance the cost of civil works and the consultancy costs for IPMC and auditor. The Government will finance all taxes and duties, land acquisition and resettlement costs, operation and maintenance costs, and financing charges.

##### A. Cost Estimates Preparation and Revisions

9. Project team and Azersu staff prepared the cost estimates following ADB's *Financial Management Technical Guidance Note*. During project implementation, reallocation of loan funds between categories may be necessary to meet the actual project needs..

##### B. Key Assumptions

10. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: AZN1.501 = \$1.00 (as of 17 May 2016).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 4: Escalation Rates for Price Contingency Calculation**

Item	2016	2017	2018	Average
Foreign rate of price inflation	1.5%	1.4%	1.5%	1.47%
Domestic rate of price inflation	12.0%	5.2%	6.0%	7.73%

Source: ADB's Economics and Research Department (<http://lnadbg1.asiandevbank.org/erd0004p.nsf/>)

##### C. Detailed Cost Estimates by Expenditure Category

(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost	% of Base Cost
<b>A. Investment Costs</b>				
1. Civil Works	71.19	12.81	84.00	97.61
2. Consultants				
a. Project Management and Audit	1.75	0.31	2.06	2.39
<b>Total Base Cost</b>	<b>72.94</b>	<b>13.12</b>	<b>86.06</b>	<b>100.00</b>
<b>B. Contingencies</b>				
1. Physical	8.28	0.97	9.25	
2. Price	1.51	1.11	2.62	
<b>Subtotal (B)</b>	<b>9.78</b>	<b>2.09</b>	<b>11.87</b>	
<b>C. Financing Charges During Implementation</b>				
1. Interest During Construction and Commitment Charges	2.07	0.00	2.07	
	-	-	-	
<b>Subtotal (C)</b>	<b>2.07</b>	<b>0.00</b>	<b>2.07</b>	
<b>Total Project Cost (A+B+C)</b>	<b>84.79</b>	<b>15.21</b>	<b>100.00</b>	

Source: ADB and Azersu estimates.

**D. Allocation and Withdrawal of Tranche 4 Loan Proceeds**

<b>Number</b>	<b>Category</b>	<b>Total Amount Allocated for ADB financing (\$)</b>	<b>ADB Financing Percentage and Basis for Withdrawal from the Loan Account</b>
1	Works and Consulting Services	75,000,000	84.75% of total expenditure claimed
	<b>Total</b>	<b>75,000,000</b>	

**E. Detailed Cost Estimates by Financier**

(\$ million)

<b>Item</b>	<b>ADB</b>		<b>Government</b>		<b>Total Cost</b>
	<b>Amount</b>	<b>% of Cost Category</b>	<b>Amount</b>	<b>% of Cost Category</b>	
<b>A. Investment Costs</b>					
1. Civil Works	71.19	0.85	12.81	0.15	84.00
2. Consultants					
a. Project management and	1.75	0.85	0.31	0.15	2.06
<b>Total Base Cost (A)</b>	<b>72.94</b>	<b>1.70</b>	<b>13.12</b>	<b>0.31</b>	<b>86.06</b>
<b>B. Contingencies</b>	2.06	17.39	9.81	82.61	11.87
<b>C. Financing Charges During</b>	0.00	0.00	2.07	100.00	2.07
<b>Total Project Cost (A+B+C)</b>	<b>75.00</b>		<b>25.00</b>		<b>100.00</b>
<b>% of Total Project Cost</b>	<b>75.00%</b>		<b>25.00%</b>		<b>100.00%</b>

Source: ADB and Azersu estimates.

## F. Detailed Cost Estimates by Outputs/Components

(\$ million)

Item	Total Cost	Output 1		Output 2	
		Amount	% of Cost Category	Amount	% of Cost Category
<b>A. Investment Costs</b>					
1. Civil Works	84.00	84.00	100.00%	0.00	0.00%
2. Consultants					
a. Project management and Audit	2.06	0.00	0.00%	2.06	100.00%
<b>Total Base Cost</b>	<b>86.06</b>	<b>84.00</b>	<b>97.61%</b>	<b>2.06</b>	<b>2.39%</b>
<b>B. Contingencies</b>					
1. Physical	9.25	9.03	97.62%	0.22	2.38%
2. Price	2.62	2.56	97.71%	0.06	2.29%
<b>Subtotal (B)</b>	<b>11.87</b>	<b>11.59</b>	<b>97.64%</b>	<b>0.28</b>	<b>2.36%</b>
<b>C. Financing Charges During Implementation</b>					
1. Interest During Construction and Commitment Charges	2.07	2.02	97.58%	0.05	2.42%
	-	-	-	-	-
<b>Subtotal (C)</b>	<b>2.07</b>	<b>2.02</b>	<b>97.58%</b>	<b>0.05</b>	<b>2.42%</b>
<b>Total Project Cost (A+B+C)</b>	<b>100.00</b>	<b>97.61</b>	<b>97.61%</b>	<b>2.39</b>	<b>2.39%</b>

Source: Azersu estimates.

<sup>a</sup> Includes taxes and duties of \$13.12 million to be financed from government resources.

<sup>b</sup> Estimates based on mid-2016 prices.

<sup>c</sup> Physical contingencies are estimated at about 11% of the cost of works. Price contingencies computed at 2% on foreign exchange costs and 8% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 3-year fixed swap rates plus a spread of 0.5%. Commitment charges for the ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Sources: Azersu and Asian Development Bank estimates.

### G. Project 2 Detailed Cost Estimates by Year

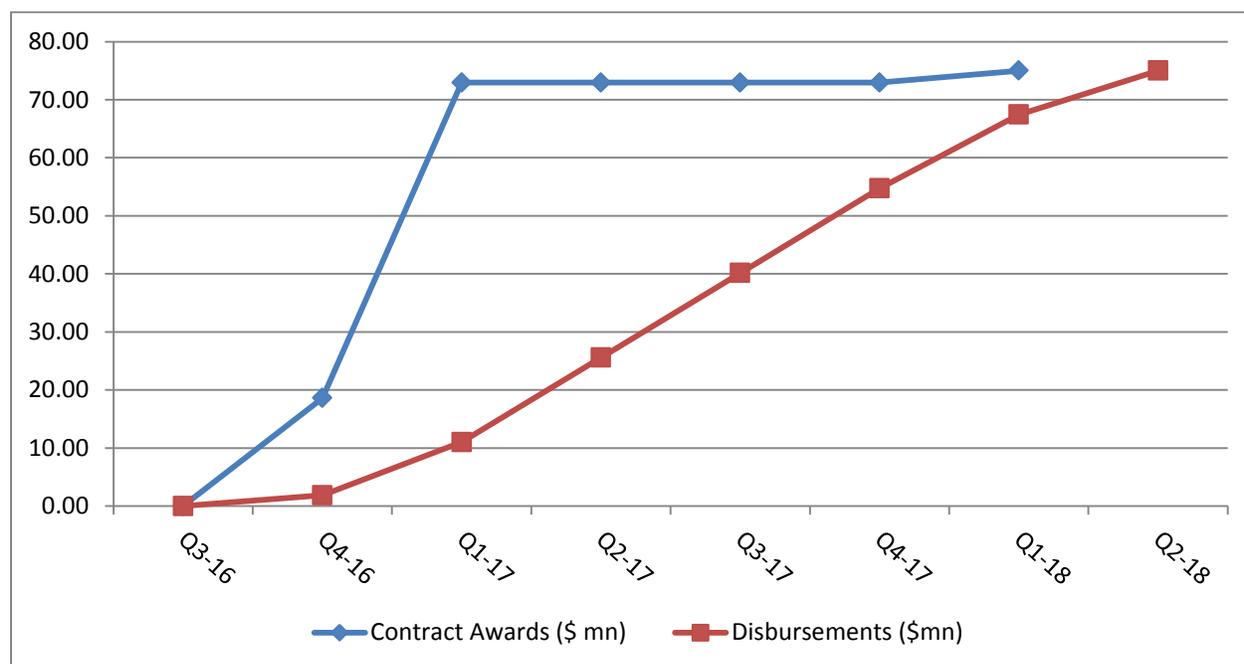
(\$ million)

Item	Total Cost	Year 1	Year 2	Year 3
<b>A. Investment Costs</b>				
1. Civil Works	71.19	3.73	44.41	23.05
2. Consultants				
a. Project management & Audit	1.75	0.00	1.08	0.67
<b>Subtotal (A)</b>	<b>72.94</b>	<b>3.73</b>	<b>45.49</b>	<b>23.72</b>
<b>Total Base Cost</b>	<b>72.94</b>	<b>3.73</b>	<b>45.49</b>	<b>23.72</b>
<b>B. Contingencies</b>	<b>11.87</b>	<b>0.50</b>	<b>7.45</b>	<b>3.92</b>
<b>C. Financing Charges During Implementation</b>	<b>2.07</b>	<b>0.21</b>	<b>0.83</b>	<b>1.04</b>
<b>Total Project Cost (A+B+C)</b>	<b>86.88</b>	<b>4.44</b>	<b>53.77</b>	<b>28.67</b>
<b>% of Total Project Cost</b>	<b>100%</b>	<b>5%</b>	<b>62%</b>	<b>33%</b>

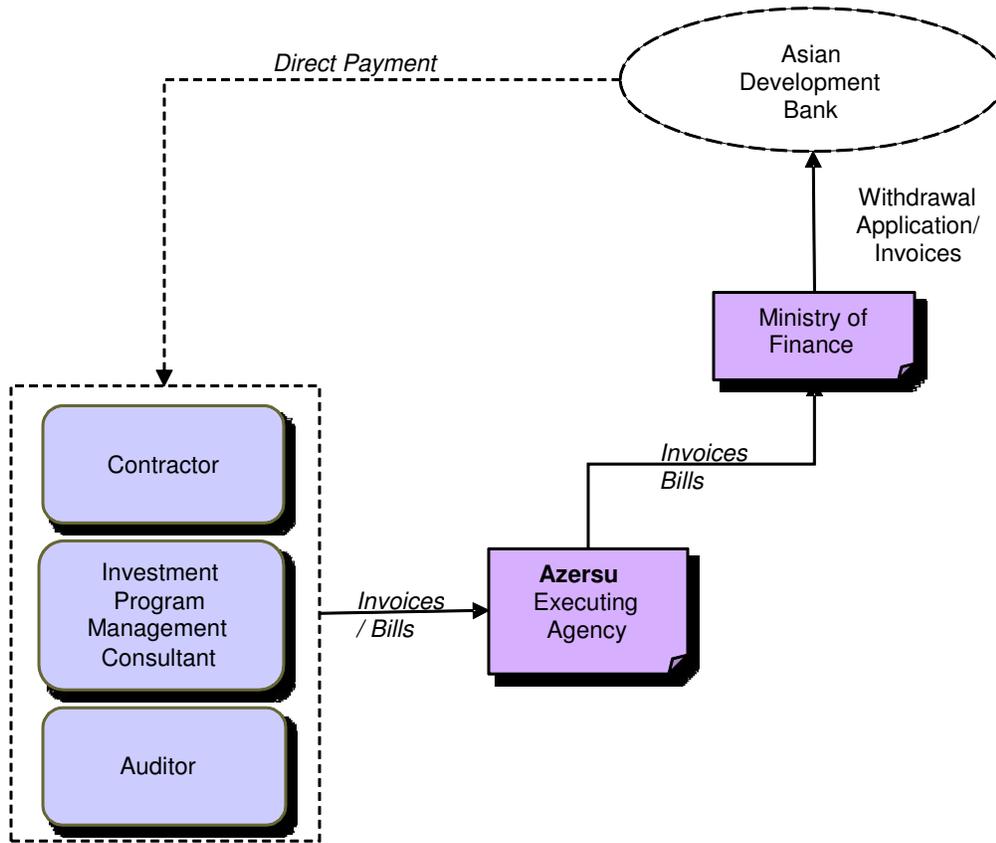
Source: ADB and Azersu estimates.

### H. Contract and Disbursement S-curve

Year	Contract Award (in USD million)					Disbursement (in USD million)					
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	
2016	0.000	0.000	0.000	18.611	18.611	0.000	0.000	0.000	1.861	1.861	
2017	54.240	0.000	0.000	0.085	54.325	9.146	14.570	14.570	14.570	52.857	
2018	2.064	0.000	0.000	0.000	2.064	12.709	7.573	0.000	0.000	20.282	
<b>Total Contract Awards</b>					<b>75.000</b>	<b>Total Disbursement</b>					<b>75.000</b>



I. Fund Flow Diagram



## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

10. The financial management assessment (FMA) for Azersu indicated that it has gained sufficient experience with international lending institutions and currently meets ADB minimum financial management requirements. Azersu has the financial management capability to satisfactorily record all transactions and balances, support the preparation of regular and reliable financial statements and financial monitoring reports, safeguard the assets, and subject these to auditing arrangements acceptable to ADB.

11. Azersu has experience managing and implementing water supply and wastewater treatment projects of the scale and scope as in the proposed ADB project. Apart from implementing projects funded by other international lending institutions, Azersu has been implementing the first three tranches of the MFF from 2010 to present.

12. Fund flows from ongoing projects and local sources are satisfactory. Separate project accounts in Azersu's financial systems and funds flow procedures are established for each project to facilitate monitoring and control. Azersu has substantial experience in ADB disbursement arrangements, as well as funding arrangements in other international lending agencies. Azersu is familiar in the use of ADB Loan Information System. While Azersu IPMO is familiar with the process and requirements of preparing withdrawal applications, there were few instances when the interim payment certificates (attached to the withdrawal application) deviate from the approved bill of quantities. Hence, Azersu's risk assessment in this regard could be moderate. To address this risk, the project team will continue to review the interim payment certificates until control measures within IPMO and IPMC are strengthened.

13. Azersu IPMO is sufficiently staffed with personnel experienced in procurement and financial management. Project accountant in ongoing tranches of the MFF have strong familiarity with ADB procedures.

14. Azersu procedures follow International Financial Reporting Standards. Manual on systems and procedures to effect policies is available to accounting and finance staff. Project financial management manual satisfies Ministry of Finance (MOF) and ADB requirements. Guideline manuals are updated as new accounting policies are formulated at national level. Local/in-house policies, all within purview of national accounting law, are formulated and locally approved. The audited project financial statements in the ongoing ADB project include a finding on use of Excel for maintaining financial records, which could lead to errors and inaccurate financial statements. IPMO staff reported to ADB that the project has actually started using 1C accounting software starting 2016.

15. Azersu is audited annually by an external auditor. Projects are subject to external audit annually using International Standards on Auditing in compliance with International reporting Standards requirements.

16. Azersu comply with reporting needs of MOF and other agencies as well as ADB project periodic reporting. IPMO and project management consultants are required to report directly to Azersu and provide quarterly and monthly progress reports. Past project experience shows consistent and timely submission of reports

17. Azersu has adequate management information systems and IT personnel in place that are sufficient to meet the project needs.

18. Azersu's financial management performance has improved. However, there are weak points that need to be monitored. These include: updating audit operations manual, integration of financial systems with project accounts, establishing a system for coordinating financial transactions, and timely submission of audited project financial statements. Overall, FMA rates the associated risks for Azersu's financial management, reporting and monitoring systems practices as moderate.

## **B. Disbursement**

19. The loan proceeds for financing Goods, Works, and consulting services shall be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended to date)<sup>2</sup> and detailed arrangements agreed upon between the Government and ADB.

20. The minimum value per withdrawal application is set in the Loan Disbursement Handbook. Individual payments below this amount should be paid by Azersu and subsequently claimed from ADB through reimbursement, unless otherwise accepted by ADB. Withdrawal applications and other loan disbursement information are available at ADB Controller's Department's website, <http://lfis.adb.org>.

21. IPMO will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

Online training for project staff on disbursement policies and procedures is available at: [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning). Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control

22. **Loan Signatories.** Before the submission of the first withdrawal application, MOF should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person.

## **C. Accounting**

23. Azersu will maintain separate project accounts and records by funding source for all expenditures incurred on the Project. Project accounts will follow international accounting principles and practices (such as Public Sector Accounting Standards) or those prescribed by the Government's accounting laws and regulations.

## **D. Auditing**

24. Azersu will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and with the GoA's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements will be submitted in the English language to ADB within six months of the end of the fiscal year by Azersu.

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<sup>2</sup> Available at: <http://www.adb.org/sites/default/files/institutional-document/33606/adb-loan-disbursement-handbook.pdf>

25. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; and (iv) the use of the statement of expenditure (SOE) procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents.

26. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

27. The government and Azersu have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements<sup>3</sup>. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

28. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).<sup>4</sup> After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

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<sup>3</sup> ADB Policy on delayed submission of audited project financial statements:

- i. When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- ii. When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- iii. When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

<sup>4</sup> Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

29. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (2015, as amended from time to time) and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time). The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The government and Azersu have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Investment Program.

30. **Advance contracting.** The government has requested ADB's approval of advance contracting for civil works construction and consulting services. Civil works construction will include development of WWTP and WSS network in Agdash and WWTP in Beylagan. Consulting services will include recruitment of an IPMC and auditor.

31. **Retroactive financing.** ADB will finance a maximum amount of eligible expenditures up to the equivalent of 20% of the loan for Tranche 4 (approximately \$15,000,000) incurred before Tranche 4 loan effectiveness but not earlier than 12 months before the signing of the Loan Agreement for Tranche 4. Retroactive financing shall apply to civil works and consulting services under Tranche 4 loan.

### B. Procurement of Goods, Works and Consulting Services

32. The investment program will follow ADB's *Procurement Guidelines* (2015, as amended time to time) and Tranche 4 loan includes: (i) one international competitive bids (ICB) for procurement of civil works for WSS network and WWTP in Agdash (2 lots); (ii) one ICB for procurement of civil works for WWTP Beylagan; (iii) one consulting package for IPMC<sup>5</sup>; (iv) one consulting package using least cost selection method to recruit an auditor. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages is listed in Section C.

33. Bidders eligibility will be determined in accordance with ADB's *Procurement Guidelines* (2015, as amended from time to time). Accordingly, no bidder or potential bidder shall be declared ineligible for ADB financed contracts for any reason other than those set out in ADB's Procurement Guidelines.

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<sup>5</sup> The contract of the existing IPMC will be modified to include design-related- and supervision works. Budget for this variation will be funded under Tranche 4.

## C. Procurement Plan

### Basic Data

<b>Project Name:</b> Water Supply and Sanitation Investment Program – Project 4	
<b>Project Number:</b> 42408-044	<b>Approval Number:</b>
<b>Country:</b> AZERBAIJAN	<b>Executing Agency:</b> Azersu Open Joint Stock Company
<b>Project Procurement Classification:</b> B	<b>Implementing Agency:</b> Azersu Open Joint Stock Company
<b>Procurement Risk:</b> Moderate	
<b>Project Financing Amount:</b> \$ 100 million <b>ADB Financing:</b> \$75 million <b>Cofinancing (ADB Administered):</b> \$0 <b>Non-ADB Financing:</b> \$25 million	<b>Project Closing Date:</b> 31 May 2018
<b>Date of First Procurement Plan:</b> 21 July 2016	<b>Date of this Procurement Plan:</b> 21 July 2016

### A. Methods, Thresholds, Review and 18-Month Procurement Plan

#### 1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Works	\$10,000,000	

Consulting Services	
Method	Comments
	Program and Engineering Supervision Consultants package (The contract of the existing IPMC will be modified to include design-related- and supervision works in T4)
Least-Cost Selection	Auditor

#### 2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
ICB 001	Procurement of civil works for water supply and sewerage network in Agdash	\$44 million	ICB - Works	Prior	1S1E	Q4/2016	Prequalification of bidders and domestic preference were not applied.  Bidding documents used: Large Works
ICB 002	Procurement of civil works	\$20 million	ICB - Works	Prior	1S1E	Q3 2016	Prequalification of bidders and

	for sewage treatment plant in Beylagan						domestic preference were not applied.  Bidding documents used: Large Works
ICB 003	Procurement of civil works for sewage treatment plant in Agdash	\$20 million	ICB - Works	Prior	1S1E	Q4 2016	Prequalification of bidders and domestic preference were not applied.  Bidding documents used: Large Works

### 3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
Cons-1	Program Management and Supervision Consultant	\$1.96 million	The contract of the existing IPMC will be modified to include design-related- and supervision works in T4	Prior	Q3/2016	Full Technical Proposal	International type of assignment
Cons-2	Auditor	\$0.1 million	LCS	Prior	Q4 2016	Biodata Technical Proposal	International type of assignment

### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number <sup>5</sup>	General Description	Estimated Value	Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	Not applicable							

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments



						<b>Award<sup>10</sup></b>		

<sup>10</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>13</sup> The Date of Completion is the physical completion date of the contract.

Consulting Services								
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award <sup>10</sup>	Date of Completion <sup>13</sup>	Comments

#### D. Non-ADB Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments

#### D. Consultant's Terms of Reference

The terms of reference for procurement of consultants for various activities as per the procurement plan are attached as per details given below:

- Investment Program Management Consultants (Annex 1)
- Auditor (Annex 2)

## VII. SAFEGUARDS

34. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),<sup>6</sup> ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

35. **Social Safeguards.** In order to ensure compliance with ADB Safeguard Policy Statement, 2009 (SPS), Azersu as executing agency will ensure social safeguards compliance under the Investment Program. Azersu endorsed the Resettlement Framework that was prepared for the investment program and updated based on the SPS on 11 November 2011. The involuntary resettlement process as required under the Resettlement Framework will be followed during implementation and necessary resettlement plans have been prepared based in the resettlement framework.

36. The Resettlement Framework is reviewed regularly and, if necessary, updated as required to address any unanticipated new types of impacts, or to update applicability and relevance. The eligibility and entitlement provisions of the Resettlement Framework have not and will not be lowered in subsequent revisions and updates.

37. Two land acquisition and resettlement plans (LARPs) have been prepared for Project 4, based on the approved framework and approved by ADB - one for Agdash and one for Beylagan. The LARPs will be implemented by Azersu and a final compliance report prepared for each LARP by Azersu and endorsed by ADB prior to civil works proceeding in any area subject to involuntary land acquisition.

38. A grievance resolution mechanism has been designed and will be operationalized by Azersu prior to commencement of implementation of each LARP (where applicable) or prior to commencement of implementation activities (where no LARP is applicable). A grievance log will be maintained at local and at project level, maintained by Azersu with the assistance of project management consultants.

39. **Grievance Management.** A grievance mechanism will be setup to allow affected persons to refer any disagreeable decision, practice or activity arising from land or other assets compensation. Affected persons will be fully informed of their rights and of the procedures for addressing complaints whether verbally or in writing.

40. Procedure on grievance resolution mechanism is described in Table 1.

**Table 1: Grievance Resolution Procedure**

Step	Responsible Units and Time Frame
Step 1	Complaint resolution is first attempted at the rayon level with the involvement of the SuKanal office and rayon authorities. Timeframe for the review and solution is a month.
Step 2	If still no solution, a grievance can then be lodged to the IPMO of Azersu. Within 15 days IPMO in assistance with the related departments of Azersu will resolve the problem.
Step 3	If solution is still not reached at Azersu and IPMO level, a grievance can be directly lodged at MoF (as the government designated control agency on LAR issues). The affected person must lodge the complaint within 1 month after receiving response from the IPMO and provide the necessary documents supporting his/her claim. MoF will provide a response within 15 days of registering the complaint. The MoF decision should be in compliance with the provisions of the LARF.
Step 4	If the affected person is still not satisfied with the MoF decision, the affected person can submit his/her complaint to the appropriate court of law for resolution.

41. **Environmental Safeguards.** In order to ensure compliance with ADB Safeguard Policy Statement (2009), Azersu as executing agency will ensure the implementation of the following

<sup>6</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

requirements and procedures for the investment program. Azersu endorsed the Environmental Assessment and Review Framework (EARF) that was prepared for the investment program and updated based on the SPS on 11 November 2011..

42. To ensure compliance with ADB SPS 2009, Azersu, through the IPMO, will implement the environmental assessment and review framework and the EMPs provided in the respective subproject IEEs. The IPMO will:

- (i) complete the rapid environmental assessment checklists, and classify new subprojects;
- (ii) based on the completed rapid environmental assessment checklists and following the SPS, and national environmental rules and regulations, prepare as required either environmental impact assessment or initial environmental examination, and environmental management plans (EMPs);
- (iii) submit the checklists and environmental assessment reports to ADB as part of the approval of subprojects;
- (iv) include EMPs in bidding documents for future contracts;
- (v) obtain all regulatory clearances from the concerned environmental protection agency (provincial) before starting civil works;
- (vi) ensure that contractors prepare and implement site-specific EMPs for each subproject;
- (vii) monitor the implementation of the site-specific EMP;
- (viii) disclose environment-related documents at the IPMO and on the project website;
- (ix) ensure that the grievance redress mechanism described in the IEE report is implemented on site to address and community concerns regarding the environmental impacts of the project;
- (x) in case of unpredicted environmental impacts occurring during project implementation, prepare and implement a corrective action plan; and
- (xi) submit semi-annual safeguard monitoring reports to ADB.

43. The EARF will be reviewed regularly and, if necessary, updated during later tranches of the MFF, if indicated by any changes to the MFF or any national regulatory requirements. The eligibility and entitlement provisions of the EARF will not be lowered in subsequent revisions and updates.

## VIII. GENDER AND SOCIAL DIMENSIONS

44. **Gender Development Strategy.** Project 4 will improve access to WSS through construction of water supply and sewerage networks. Local communities will be informed on sanitation and hygiene issues. The management capacity of sukanals and joint stock companies (JSCs) will be enhanced and human resources management will be gender mainstreamed to give women and men equal employment opportunities.

45. The role of women will be expanded through their engagement in complaints redress mechanisms, which will provide feedback on service quality. Based on the analysis, an information, education and communication (IEC) campaign on WSS, customer rights, and water efficiency will be conducted.

46. The resident mission-based gender specialist, financed through TA 7563, will closely work with the gender consultant of the EA and will supervise and monitor the timely implementation of the GAP.

### GENDER ACTION PLAN (GAP)

Objective/ Impact on gender equality	Actions and Description	Target/Indicator and Timeframe	Institutional Responsibility
<b>Output 1: Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash</b>	<ol style="list-style-type: none"> <li>1. Ensure construction of water supply and sewerage networks for equal access of potable water for men and women including female-headed households provided</li> <li>2. Ensure equal employment opportunities for women in Sukanals and JSCs</li> <li>3. Train female staff working on Management Information System (MIS) and accounting</li> <li>4. Establish complaint redress mechanism and database in customer care centers</li> <li>5. Ensure of benefits of the program for women, as a result of improved water supply,</li> </ol>	<ol style="list-style-type: none"> <li>1. Direct gender benefits of continuous 24-hour potable water supply to 37,864 females in Agdash and Beylagan project towns including 100% female-headed households</li> <li>2a. At least 20% of Sukanals and JSC staff are women.</li> <li>2b. At least 20% of Customer Care Centre staff are women</li> <li>3a. Sex-disaggregated database established.</li> <li>3b. At least 20% staff trained are women??</li> <li>4. Annual report with gender analysis &amp; feedback on WSS services on quantity and redress of complaints published (2013 – continuous) with at least 50% of those providing feedback to be women.</li> <li>5. Qualitative Survey. Collect SDD data and information towards project end on the level of satisfaction from women and they provide feedback through 3 Focus Group</li> </ol>	Agdash JSC and Azersu

Objective/ Impact on gender equality	Actions and Description	Target/Indicator and Timeframe	Institutional Responsibility
	<p>6. Azersu will conduct an institutional gender analysis and will provide a short 2-4 page report to its Executive Management and Board assessing “institutional gender “ including the numbers of women and men at different levels of Azersu, opportunities for promotion and training, and the pipeline for women’s leadership within Azersu.</p>	<p>Discussions (FGD) (with at least 8-10 women in each FGD) to assess the impact of the program on women.</p> <p>6. A Short Report for management will be prepared by ADB’s gender specialist on Azersu’s institutional gender during a gender review Mission in July 2016 or thereabouts. If needed, the Report will provide recommendations to make Azersu’s Human Resources Policy more gender responsive in recruitment, training, and promotions.</p>	
<p><b>Output 2: Sewerage and sanitation system efficiency improved through construction and coverage expansion in Agdash and beylagan</b></p> <p>(Increased participation in decision making)</p>	<p>7. Ensure access to sewerage treatment to all households in project towns Agdash and Beylagan</p> <p>8. Separate gender-sensitive sanitation and washing facilities for girls and boys in 15 public schools in 2 towns (focus on menstruating girls)</p> <p>9. Operate a 24-hour customer care hotline and train staff of customer care centers as hygiene and sanitation advocates</p> <p>10. Two (2) or more sexual harassment staff training seminars, at least 1 in each project town</p> <p>11. Gender equality results stories to be facilitated and produced.</p>	<p>7. Direct gender benefits of continuous 24-hour sanitation facilities to 37,864 females in Agdash and Beylagan project towns including 100% female-headed households</p> <p>8. Separate gender inclusive sanitation and hygiene facilities for girls and boys constructed in at least 75% of schools</p> <p>9. Customer care hotline operating with 20% women staff and 100% of all staff are trained on water, hygiene, sanitation practices, customer rights and complaint mechanisms (issue resolutions)</p> <p>10. At least 30% of those staff trained to be men.</p> <p>11. At least 1 story with qualitative interviews to be produced featuring how the project has improved women’s lives.</p>	<p>Sukanal, Agdash JSC and Azersu</p> <p>Sukanal, Agdash JSC and Azersu</p>

Azersu = Azersu Joint Stock Company, IEC= Information, education and communication, JSC = Joint Stock Company, WSS = water supply and sanitation.

## IX. Performance Monitoring, Evaluation, Reporting, and Communication

### A. Project Design and Monitoring Framework

<p><b>Impact the Project is Aligned with:</b></p> <p>Improved water supply and sanitation services in the urban centers of Agdash and Beylagan (project defined)</p>
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Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p><b>Outcome</b></p> <p>Improved coverage, continuity, and quality of water supplies and wastewater disposal in Agdash and Beylagan<sup>7</sup></p>	<p>a. Residents' (including 100% female headed households) access to sanitation facilities increased from 36% in 2011 to 95% by 2018</p> <p>b. Residents' (including 100% female headed households) access to 24-hour potable water supply increased from 57% in 2011 to 95% by 2018</p>	<p>a-b. Executing Agency (Azersu) Annual Reports, project component completion and commissioning certificates provided by investment program construction supervision consultant</p>	<p>Government's inability to protect the environment and natural resources from unregulated discharge of untreated sewage into water bodies</p>
<p><b>Outputs</b></p> <p>1. Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash</p>	<p>By 2018:</p> <p>1a. Pressurized water of 180 liters per capita supplied for 24-hour daily (2016 baseline: 80)</p> <p>1b. Additional 37.2 km of distribution networks constructed to connect 3,493 households (2016 baseline: 0)</p> <p>1c. Additional 5,000 m<sup>3</sup> storage reservoirs constructed (2016 baseline: 0)</p>	<p>1.a-c. Quarterly progress reports prepared by Azersu, monthly reports by IPMC</p>	<p>Lack of construction contractor and industry experience with similar capacity while bidding for projects in Azerbaijan</p> <p>Substantial variance between the bid prices and engineer's estimate</p>
<p>2. Sewerage and sanitation system efficiency improved</p>	<p>By 2018;</p> <p>2a. Additional 42.6 km of sewer lines constructed to connect 3,200</p>	<p>2.a-b. Quarterly progress reports prepared by</p>	

<sup>7</sup> Tranche 4 will be additional financing for Agdash and Beylagan only. Investments in Goychay and Nakhchivan are financed under Tranche 2 of the MFF.

through construction and coverage expansion in Agdash and Beylagan	households connected to sewerage facilities (2016 baseline: 0)  2b. 2 Sewage treatment plants with 20,000 m <sup>3</sup> /day capacity each constructed to treat and safely discharge of sewage benefiting 37,864 females in Agdash and Beylagan (2016 baseline: 0)	Azersu, monthly progress reports by IPMC	
<p><b>Key Activities with Milestones</b></p> <p><b>Output 1.</b> Water supply system efficiency improved through rehabilitation and replacement, and coverage expanded in Agdash and Beylagan</p> <p>1.1 Advanced contracting process for water supply and sanitation network completed (Q4 2016) 1.2 WSS contract awarded (Q4 2016) 1.3 Construction of WSS network completed (Q2 2018)</p> <p><b>Output 2.</b> Sewerage and sanitation system efficiency improved through construction and coverage expansion</p> <p>2.1 Master bid documents and engineering designs approved (Q3 2016) 2.2 Advanced contracting process for WWTPs in Agdash and Beylagan completed (Q4 2016) 2.3 Contracts for WWTPs awarded (Q4 2016) 2.4 Construction of WWTPs completed (Q2 2018)</p> <p>Program Management 3.1 IPMC consultants hired (Q4 2016) 3.2 Supervision works completed (Q2 2018)</p>			
<p><b>Inputs</b></p> <p>ADB Finance: OCR = \$75 million (additional finance) Government: \$25 million</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not Applicable</p>			

IPMC= investment program management consultants, km= kilometer, m<sup>3</sup>= cubic meter, OCR = ordinary capital resources, Q= quarter, WSS = water supply and sanitation, WWTP= wastewater treatment plants.  
Source: Asian Development Bank

## B. Monitoring

47. **Project performance monitoring.** Disaggregated baseline data for output and outcome indicators gathered during Investment Program and each tranche processing will be updated and reported quarterly through investment program quarterly progress reports prepared by Azersu, and after each ADB review mission. These quarterly reports will provide information necessary to update ADB's project performance reporting system.<sup>8</sup>

<sup>8</sup> ADB's project performance reporting system is available at:

48. **Compliance monitoring.** Compliance on covenants will be monitored through regular ADB review missions and on a quarterly basis in discussion with Azersu.

49. **Safeguards monitoring.** Monitoring reports on the implementation of safeguards requirements and procedures will be prepared by Azersu for the social and environmental safeguards covering the involuntary resettlement process and the implementation of the environmental impact assessment report.

**(i) Involuntary Resettlement.** The IPMO will undertake internal monitoring of safeguard covenants' compliance to be included in the quarterly project progress report. ADB consultants will validate the internal monitoring reports and evaluate compliance of Investment Program activities with the ADB's Safeguard Policy Statement (2009). External monitoring will be carried out by an Independent Monitoring Agency appointed by Azersu in two phases, once during the resettlement plan implementation and once a year later.

**(ii) Environment.** The contractor will conduct monthly monitoring of the implementation of the EMP and will submit them to the IPMC. The IPMC will conduct detailed environmental monitoring of the projects and will prepare and submit quarterly environmental monitoring reports to the IPMO. The IPMO, with the assistance of IPMC will undertake internal monitoring of the EMP and will prepare semi-annual environmental monitoring reports and will submit these to ADB.

50. **Gender and social dimensions monitoring.** See DMF and the GAP for monitoring indicators. Currently, the IPMO reports on GAP indicators and an ADB staff consultant confirms the figures.

### C. Evaluation

51. Within 6 months of physical completion of each project under the investment program, Azersu will submit a project completion report to ADB.<sup>9</sup>

### D. Reporting

52. Azersu will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) semi-annual environmental monitoring reports; (iii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iv) a project completion report within 6 months of physical completion of each tranche of the Investment Program. To ensure that the investment program is efficiently managed, accounts of every tranche of the facility together with the associated auditor's report, should be adequately reviewed.

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<http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>

<sup>9</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

## X. ANTICORRUPTION POLICY

53. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.<sup>10</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project.<sup>11</sup>

54. To support these efforts, relevant provisions are included in the framework financing agreement, loan and project agreements, loan regulations, and the bidding documents for the investment program. The Government will disclose to the public, and update annually the current status of the investment program and how the proceeds of the facility are used. For each contract financed under the Investment Program, Azersu will disclose on their respective websites information on, among others, the: (a) list of participating bidders; (b) name of the winning bidder; (c) basic details on bidding procedures and procurement methods adopted; (d) amount of contract awarded; (e) list of goods/services, including consulting services procured; and (f) intended and actual utilization of the facility proceeds.

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<sup>10</sup> Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>11</sup> ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

## XI. ACCOUNTABILITY MECHANISM

55. People who are, or may in the future be, adversely affected by the project may address complaints to ADB, or request the review of ADB's compliance under the Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>12</sup>

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<sup>12</sup> For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

**XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

## **ANNEX 1**

### **Investment Program Management Consultants Terms of Reference**

#### **I. OVERVIEW**

1. By a framework financing agreement dated 15 August 2009 between the Government of Azerbaijan and the Asian Development Bank (ADB), a multitranche financing facility (MFF) has been provided for the purpose of financing projects under Water Supply and Sanitation Investment Program.

2. Azerbaijan has 3 large cities, 23 secondary towns with populations of 20,000 to 100,000 and about 25 small towns with populations of 5,000 to 20,000. The focus of this Program is on the water supply and sanitation (WSS) sector in selected secondary towns and areas surrounding Baku.

3. This Investment Program will cover: (i) WSS infrastructure development in the towns of Agdash, Goychay, Nakhchivan, Aghjabedi, Beylagan, Balakan and other developing urban centers, and the peripheral areas of Baku; (ii) Management Improvement and Capacity Development of WSS agencies; and (iii) a Program Management Facility (PMF) that will oversee the Program development, implementation and management. This will be implemented through multi-tranche financing facility of ADB over a period of 8 years (2010-2018). The Azersu Joint Stock Company (Azersu) is the Executing Agency. PMF, created at Azersu, is responsible for project implementation, and is supported by international and national consultants

#### **A. Component A: Water Supply and Sanitation Infrastructure Development**

4. Component A will finance WSS infrastructure in Agdash, Agdjabedi, Balaken, Beylagan, Goychay, Nakhchivan with its periurban towns, peri-urban areas surrounding Baku, and other developing urban centers. This component will increase water supply coverage and the number of metered connections to piped networks; reduce system leaks to ensure 24-hour supply of pressurized, safe drinking water; and improve the disposal and treatment of wastewater.

#### **B. Component B: Institutional Effectiveness**

5. Component B will be implemented in Agdash, Agdjabedi, Balaken, Beylagan, Nakhchivan, peri-urban areas surrounding Baku, and other urban centers. This component will finance nonphysical instruments targeting (i) institutional improvements for water supply and sanitation (WSS) service delivery; (ii) capacity development for better system planning, operation, and maintenance; (iii) enhanced cost recovery through metering, billing, and collection tariffs; (iv) increased efficiency for timely processing of effective WSS projects; and (v) a twinning arrangement with an external WSS utility to support capacity development.

#### **C. Component C: Program Management Facility**

6. Component C will finance implementation oversight at joint stock companies (JSCs) and sukanals, and consulting services for supervising works in the remaining investment program towns.

## II. PROJECT 4

7. Project 4 of the Investment Program will improve WSS services in Agdash and construct WWTPs in Agdash and Beylagan. The outcome of Project 4 is improved coverage, and the continuity and quality of water supplies and wastewater disposal in Agdash and Beylagan.

8. The project outputs are described in paragraphs 9-10 below.

9. **Component A: Water Supply and Sanitation Infrastructure Development.** The Agdash subproject will include (i) construction of 4 new bore wells; (ii) construction of new reservoir with a capacity of 5,000 m<sup>3</sup>; (iii) construction of water distribution networks; (iii) construction of sewage collection network, pump stations, and effluent discharge pipelines; and (iv) construction of a wastewater treatment plant (WWTP) with 20 mld capacity. The Beylagan subproject consists of the construction of a WWTP. Overall, approximately 37.2 km of water supply network, 5,000 m<sup>3</sup> of reservoirs, 42.6 km of sewerage network, and two WWTPs of 20 mld capacity will be constructed under Project 4.

10. **Component B: Program Support.** Program support through IPMC and Investment Program Management Office (IPMO) will be continued for Project 4. The same IPMO staff as in the previous projects will be retained, while the investment program management consultant (IPMC) which will be recruited using competitive selection will provide management and technical support to the IPMO during project implementation.

## III. OBJECTIVES

11. The Program objective is to improve public health and environment by improving the quality, reliability, and sustainability of WSS services in the selected secondary towns. This objective will be achieved through:

- (i) construction of new optimally sized WSS infrastructure and strategic rehabilitation of selected facilities; and
- (ii) institutional effectiveness of JSCs and SuKanals.

## IV. INSTITUTIONAL STRUCTURE AND STATUS

12. The WSS sector in Azerbaijan has weak institutions, inefficient operations, outdated and dilapidated physical infrastructure, and severe financial constraints. As a result, consumers receive a low level and poor quality WSS services.

13. **Administrative Structure.** AzersuKanal had 51 local branches (water and wastewater enterprises, known as SuKanals) to provide WSS services in provincial towns and other residential areas. Under PD 252, Azersu now manages all SuKanals and JSCs<sup>13</sup>, coordinates their activities, and prepares proposals on implementing state policy to improve WSS systems.

14. SuKanals' institutional capacity is limited. They are predominantly engineering-focused, with insufficient attention to systems operation and infrastructure maintenance. SuKanals lack operational efficiency planning, financial management, and commercial performance.

<sup>13</sup> In Agdash, Goychay, Ganja and Sheki, the WSS operations are currently being carried out under separate joint stock companies (JSCs) - the subsidiary companies of Azersu, formed under ADB and KfW projects.

Comprehensive reforms are necessary in institutional structure, management, staff composition, and skills mix for SuKanals to transform themselves into proper WSS utilities in market economies.

## V. PROJECT STRUCTURE

15. The Azersu Joint Stock Company (Azersu) will be the Executing Agency for all project activities.

16. The Program Management Facility (PMF), created at Azersu, will be responsible for executing the Program including its development and management. The PMF will comprise the existing Investment Program Management Office (IPMO) and a team of experienced international and domestic consultants to be engaged through an international firm. In addition to the consultants, the EAs will maintain qualified PMF staffing with at least the program manager/contract management specialist, financial management/disbursement specialist, WSS/monitoring and evaluation specialist, and safeguards expert. The PMF will submit the periodic financing requests (PFRs); undertake due diligence, evaluation, detailed designs, procurement, and construction supervision; oversee safeguards compliance; coordinate among agencies; prepare progress reports; and monitor and evaluate the program progress. With the assistance of PMF, Azersu and JSC/SuKanal will be responsible for their subprojects implementation. JSCs/SuKanals will designate a qualified implementation team including Chief Implementation Officer, water supply engineer, sewerage specialist, field inspectors, and electro-mechanical technicians.

17. The IPMO will submit PFRs; undertake due diligence for subsequent projects; prepare detailed design for future investments; supervise procurement and construction; oversee safeguards and gender compliance; coordinate among *rayon* (town) agencies; monitor and evaluate project progress; prepare progress reports; and provide expertise in project management, planning, results measurement, and training. The IPMO will also provide hands-on training to staff of Joint Stock Companies.

## VI. CONSULTING SERVICES

### A. Scope of work

- (i) Construction supervision of WSS and WWTPs works in Agdash and Beylagan.
- (ii) Compliance of social and environmental safeguards.
- (iii) Technical training of Azersu in all phases of design, construction, operation and maintenance.
- (iv) Organizing Trainings and Study Tours for IPMO and Joint Stock Company to be familiar with Water Supply and Sanitation Services in the developed countries.

### B. Activities

18. Project 4 under the Water Supply and Sanitation Investment Program (Investment Program) will improve the water supply and sewerage network and wastewater treatment plant in Agdash and wastewater treatment plant in Beylagan. Description of the works components are mentioned in paragraph 11.

19. Main activities for the Consulting services are described below (the description may not be exhaustive and the activities shall not necessarily be limited to those described):

- (i) Detailed supervision of all WSS and WWTP construction and maintenance works.
- (ii) Monitoring of compliance to social and environmental safeguards requirements.
- (ii) Preparing tender documents for civil works and other procurement documents,
- (iii) Bid evaluation and help on preparation of evaluation report,
- (iv) Interaction with the householders in rectifying the service connection with the public awareness campaigns.
- (v) Ensuring pressure testing of all laid water mains with new service connections.
- (vi) Assistance for commissioning and handing over of works to JSCs
- (vii) Organizing trainings and Study Tours for Azersu IPMO and JSCs' staff members in Aghjbedi and in abroad to present WSS systems' operation and maintenance in developed countries.
- (viii) Training of JSC personnel on operation and maintenance of infrastructure together with preparation of O&M manuals

### C. Staffing Requirement

20. The consultant shall make available the following personnel for a 14-month period intermittently from October 2016 to May 2018.

<b>Investment Project Management Consultants</b>	
<b>Consultants (International)</b>	Professional Staff (pm)
	International
Team Leader/ Water Supply and Sewerage Engineer	14
Construction Management/ Construction Supervision Specialist	14
Financial Management Specialist	4
Environmental Engineer	4
<b>Subtotal (1)</b>	<b>36</b>
<b>Consultants (National)</b>	National
Quantity Surveyor/Field Inspector 1	14
Quantity Surveyor/Field Inspector 2	14
Quantity Surveyor/Field Inspector 3	14
Public Outreach/Community Management Specialist	3
Gender Specialist	6
<b>Procurement Specialist (to be suggested to Azersu)</b>	
<b>Subtotal (2)</b>	<b>51</b>
<b>TOTAL</b>	<b>87</b>

21. In addition of professional staff, support staff input of 36 person months has been estimated for office staff, accountant, CAD operator, etc.

22. In preparing the TOR for the individual consultants the inputs have been grouped around the predominant responsibility of the team member as outlined in the table above.

## **B. Detailed Terms of Reference**

### **1. Team Leader/Water Supply and Sewerage Engineer (14 person-months, International)**

23. The Team Leader will be responsible for overall management and implementation of the Program. In the first two months of the program he/she will set up the management system and train other consultants and Azersu IPMO staff in their management responsibilities. He will be present almost full time to ensure that the system is running smoothly.

24. The management system must among other things show:

- (i) The interrelationship of activities with one another with time as per critical path method of construction management.
- (ii) Responsibilities of key stakeholders and a monthly assessment of performance
- (iii) Program cost commitments and disbursements as against budget.
- (iv) Constraints encountered and progress with resolution.
- (v) Monthly reporting on program progress against program implementation schedule.
- (vi) Minutes of monthly program management meetings.
- (vii) Summary details on all contracts
- (viii) Compliance with loan covenants and assurance, including safeguards
- (ix) Set up for quality assurance in construction supervision

25. The team leader will be in charge of all other consultants, including the timing of their inputs and the quality of their products, liaise with Azersu IPMO on a day to day basis and with ADB. With each consultant he/she will prepare and supervise a work plan. Once a week the team leader/program management specialist will hold a program progress meeting with other consultants and the EA to review progress on all fronts and resolve constraints. The team leader/program management specialist will be responsible for all reporting on the program in a timely manner. He/she will be responsible for updating the program schedule as per the critical path method of construction management.

26. The team leader will prepare training programs in project towns and abroad, and will prepare programs for Study Tours. The team leader will have to establish these trainings parallel to the approved training program of Azersu Management. The team leader will also accompany staff members during Study Tours.

27. The International team leader will:

- (i) prepare the timetable and budget for program implementation, and with the PMO, review and update the timetable and budget every three (3) months;
- (ii) manage the team's performances in data collection, detailed design and documentation, tendering and contract award, supervision of contract execution;
- (iii) develop the program critical path timeline and design and construction sequencing for future tranches to prioritize joint water supply and sewerage implementation through major international construction companies;
- (iv) monitor the rate of progress of contract implementation pro-actively dealing with bottlenecks as they are likely to occur;
- (v) assist in preparing loan withdrawal applications and supporting documents;

- (vi) maintain accurate and up-to-date accounting records for the Program;
- (vii) prepare detailed quarterly progress reports and annual summaries, and submit them to EA;
- (viii) closely coordinate with the MICD twinning consultants on optimizing the functionality of JSCs.
- (ix) oversee and coordinate implementation of the environmental monitoring plan (EMP),
- (x) monitor the impact of the transfer of knowledge components; and
- (xi) help the IPMO prepare and submit the program completion report.

28. The position of the team leader/program management specialist will require a Degree in Engineering (civil/ water resource) plus at least a Masters or equivalent in water supply engineering/program management/development management. He/she should have at least 20 years experience in planning, design and implementation of large-scale water supply and sanitation projects, preferably construction of water transmission mains and distribution networks, sewerage networks and wastewater treatment plants. Among the stated 20 years, he must have at least 5 years' experience as Team Leader and a minimum 10 years' experience in developing countries, preferably in inland Asia. He/she must have demonstrated skills in human resource management. He/she must have had experience on an ADB project or other MDBs-financed projects. Familiarity with ADB Guidelines would be advantageous. He/she shall also be required to give references for at least three recent projects.

## **2. Construction Management Specialist (14 person-months, international)**

29. The consultant will be responsible for the execution of WSS and WWTP contracts using FIDIC Construction contract conditions, maintaining continued liaison with the international contractors, ensuring that the work timelines are being adhered to, that bottle-necks are removed proactively, that the reporting from the field is up-to-date in all respects and that modifications are appropriately and in a timely manner dealt with. The duties of the specialist will be to:

- (i) guide the contract award process, ensuring that all formalities are being complied with;
- (ii) monitor the execution of the works and the adherence to the contracted implementation schedule documented as a detailed and verifiable Gantt chart;
- (iii) verify the presented payment requests submitted by the contractors and certified by the field staff;
- (iv) carry out regular site visits to ascertain the accuracy of the data presented against the tangible progress demonstrated in the field;
- (v) attend progress review meetings on a two monthly basis between field staff and contractors;
- (vi) verify the claims received from the contractor and certified by the field staff on necessary contract variations and claims for extension in contract time;
- (vii) prepare the necessary progress reports for the review by the higher authorities, making recommendations on the progress of the works and possible deviations from the agreed timeline.

30. The construction management specialist shall have a Degree in civil/structure/ water supply engineering, supplemented with a master in construction management. In addition, he must have 15 years of experience in planning, and implementation of large-scale water supply and sanitation projects.

### **3. Quantity Surveyor/Field Inspector (3 nationals, each for 14 person-months)**

31. The Field Supervision Staff will be responsible for the day-to-day supervision and contract management of the respective implementation contracts. The construction supervision staff for the subprojects will comprise of a construction manager and 3 field inspectors/quantity surveyors. The Construction Manager will have appropriate seniority and experience, managing the field inspector and guiding and ensuring that the supervisors at the contractors work fronts maintain the required quality standards and are fully conversant with the specification requirements on material testing, work quality assurance and safety standards. The staff will have appropriate experience in the supervision of civil engineering construction work involving inter alia water distribution networks, sewerage networks, treatment plants, transmission mains, and structural works. The engineers shall have a degree in civil / water supply engineering and at least 10 years of construction experience. The field inspectors shall have a diploma in civil /water supply engineering with at least 10 years construction supervision experience. The supervisors shall have construction experience either employed in a supervisory capacity or by a contractor as head foreman. Experience with international organizations shall be an added advantage.

### **4. Environmental Engineer (4 person-months, international)**

32. Environmental Specialist will check the designs of the WSS network and WWTP of Agdash and Beylagan. He will perform design and quality checks on the necessary components to be constructed.

33. Environmental Specialist will also monitor the construction works in project towns in accordance with ADB's Safeguards Policy (2009), the initial environmental examination and Azerbaijan Environmental Guidelines. The environmental mitigation and monitoring measures should ensure that (a) any adverse environmental impacts are minimized by the mitigating measures and monitoring program detailed in the EMP in the IEE; (b) implementation of the EMP and any violation of environmental standards are reported to ADB (c) EMP is incorporated in the bidding documents.

### **5. Financial Management Specialist (4 person-months, international)**

34. The Financial Specialist is responsible for developing the financial structure by which the JSCs are to manage their finances. The program financial specialist will be responsible for:

- (i) financial management of the project, including budgeting, accounting, and reporting;
- (ii) establishing rules and procedures in IPMO for fund flow and internal control, and train IPMO staff to utilize them;
- (iii) assisting the IPMO in negotiating the contracts regarding financial matters;
- (iv) Implementing the transfer of knowledge program on financial management.

35. The Financial Specialist will be responsible for financial management of the project, including budgeting, accounting, and reporting. He/she will establish rules and procedures in PMO for fund flow and internal control, and train IPMO staff to utilize them and assist with preparing bid documents and negotiating the contracts regarding financial matters. The project financial specialist shall be a CA/CPA or a master degree in Finance, along with at least 10

years' experience in financial management of large scale infrastructure projects. For national consultant(s), experiences with international organizations shall be an added advantage.

#### **6. Public Outreach/Community Management Specialists (3 person-months, national)**

36. The specialist will design and implement a public outreach program for the project towns including preparation of all materials and media campaign. They will interact with the householders in rectifying the service connection with the public awareness campaigns. The consultants will (i) mobilize the communities and generate Investment Program awareness and mainstream consumers in supporting project implementation; (ii) facilitate TWUAs in monitoring consumer satisfaction to the improved service quality and ensure timely reporting of any system malfunction, leakages, or environmental issues to SuKanals/JSCs; (iii) assist TWUAs in educating consumers on their responsibility to pay for improved services; (iv) develop TWUAs capacity in public awareness, hygiene and sanitation, and information, education and communication (IEC) campaign. Both men and women to participate in public hygiene awareness campaign; and (v) develop a comprehensive communications strategy to encourage information sharing and effective press relations.

#### **7. Gender Specialist (6 person-months, national)**

37. A gender specialist shall be a National Consultant to facilitate the implementation of the Gender Action Plan (GAP) and to support Azersu in meeting its targets. The responsibilities of the gender specialist include, but are not limited to the following:

- Give guidance to the players involved in GAP implementation to effectively reach targets;
- Identify gender focal points at program implementation sites;
- Ensure implementation of the GAP activities in time;
- Follow the monitoring tool and regular reporting system for implementation of GAP;
- Conduct regular monitoring and reporting;
- Consult both men and women during planning and implementation of WSS systems;
- Develop and hold meetings based on needs assessment of women and men in the program areas;
- Support in establishing partnership between Town Water Users Association, local women and NGOs and better reaching to women customers;
- Provide input in developing an awareness campaign, which caters to women's needs as customers and refers to the issues of water, hygiene, sanitation, customer rights and water usage efficiency;
- Support implementation of the public outreach campaigns;
- Ensure gender is considered in tranche relevant surveys;
- Support in consolidating gender specific indicators to highlight project effects on women's empowerment and development.

38. The Gender Specialist shall have a university degree in social sciences, or social science related areas with additional experience in Gender and Development. At least 5 years professional experience is required preferably on project implementation level. A profound knowledge of the country specific needs of men and women in Azerbaijan would be of great advantage. English/Azerbaijani language skills are essential.

39.

#### IV. Reporting Requirements

40. The project reporting requirements are tabled below and will provide the basis for progress payments. The Consultant shall prepare and submit these reports and documents in both hard copy and digital version.

Report	Submission Date
Inception Report	Week 6 <sup>1</sup>
Quarterly progress reports	Each quarter (2016-2018)
Contract Completion Report	Month 18 <sup>1</sup>
Working papers and presentations as specified from time-to-time by the Azersu.	As appropriate

Notes: <sup>1</sup> Relative to consultancy contract commencement date.

**ANNEX 2**  
**TERMS OF REFERENCE FOR THE**  
**AUDIT OF THE WATER SUPPLY AND SANITATION INVESTMENT PROGRAM – PROJECT 4**  
**FOR Azersu FROM OCTOBER 2016 TO MAY 2018**

***[ENTITY NAME: XYZ]***  
**AUDITED PROJECT FINANCIAL STATEMENTS (APFS)**  
**STATEMENT OF AUDIT NEEDS (AUDITOR’S TERMS OF REFERENCE<sup>14</sup>)**

**I. INTRODUCTION**

1. *[A description of the project will be provided with a focus on the purpose for which the funds are intended consistent with broad project objectives and budget. A description of the executing and implementing agencies will be included along with the related accounting and financial management practices, loan amount, financial reporting periods to be audited, and other relevant information that should be brought to the attention of the auditors.]*

**II. MANAGEMENT RESPONSIBILITY FOR PREPARING PROJECT FINANCIAL STATEMENTS**

2. Management is responsible for preparing and fairly presenting the project financial statements, and for maintaining sufficient internal controls to ensure that the financial statements are free from material misstatement, whether due to fraud or error. In addition, management is responsible for ensuring that funds were used only for the purpose(s) of the project, for compliance with financial covenants (where applicable), and for ensuring that effective internal controls, including over the procurement process, are maintained.

*[In this regard, management must:*

- (i) Prepare and sign the Audited Project Financial Statements.*
- (ii) Prepare and sign a Statement of Compliance.*

3. *Management must include the following in the Statement of Compliance:*

- (i) That project financial statements are free from material misstatements including omissions and errors, and are fairly presented;*
- (ii) That the borrower or executing agency has utilized the proceeds of the loan only for the purpose(s) of the project;*
- (iii) That the borrower or executing agency was in compliance with the financial covenants of the legal agreement(s) (where applicable);*
- (iv) That the imprest fund procedure, where applicable, has been operated in accordance with the Asian Development Bank’s (ADB) Loan Disbursement Handbook;*
- (v) That adequate supporting documentation has been maintained to authenticate claims stated on the statement of expenditures (SOE), where applicable, for reimbursement of eligible expenditures incurred and liquidation of advances provided to the imprest account; and*
- (vi) That effective internal control, including over the procurement process, was maintained.]*

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<sup>14</sup> This statement of audit needs was developed to guide project teams and executing and implementing agencies in communicating the Asian Development Bank’s (ADB) auditing requirements to private auditors. This statement of audit needs may also be used as a guide when communicating auditing requirements with supreme audit institutions, where applicable.

### III. OBJECTIVES

4. The objectives of the audit of the project financial statements is to enable the auditor to (i) express an independent and objective opinion as to whether the project financial statements present fairly, in all material respects, or give a true and fair view of the project's financial position, its financial performance and cash flows, and (ii) provide a reasonable assurance opinion over certain specific representations made in the Statement of Compliance. *(please refer to paragraph 10).*

### IV. AUDITING STANDARDS

5. The *[statutory]* audit is required to be conducted in accordance with *[specify the relevant auditing standards]*. These standards require that the auditor comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the project financial statements are free from material misstatement. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the project financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the project financial statements whether due to fraud or error. In making those risk assessments, the auditor considers the internal control relevant to the entity's preparation and fair presentation of the project financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the project financial statements.

6. The standards to be applied will be documented in the project/loan documents, and will include:

*[Option A: Standards promulgated by the International Auditing and Assurance Standards Board (IAASB):*

1. *International Standards on Auditing (ISA); and*
2. *International Standards on Assurance Engagements (ISAE).*

*Option B: Standards promulgated by the International Organisation of Supreme Audit Institutions (INTOSAI):*

1. *International Standards of Supreme Audit Institutions (ISSAI).*

*Option C: National Auditing Standards:*

*The auditing standards promulgated by {national authority}. ]*

7. In complying with ISA, the auditor will pay particular attention to the following standards:

- ISA 800/ISSAI 1800 – Special Considerations – Audits of Financial Statements Prepared in Accordance with Special Purpose Frameworks.
- ISA 240/ISSAI 1240 – The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements.
- ISA 250/ISSAI 1250 – Consideration of Laws and Regulations in an Audit of Financial Statements.
- ISA 260/ISSAI 1260 – Communication With Those Charged with Governance.
- ISA 265/ISSAI 1265 – Communicating Deficiencies in Internal Control To Those Charged with Governance and Management.
- ISA 330/ISSAI 1330 – The Auditor's Responses to Assessed Risks.

## V. PROJECT FINANCIAL REPORTING FRAMEWORK

8. The auditor will verify that the project financial statements have been prepared in accordance with *[International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), International Public Sector Accounting Standards (IPSAS) promulgated by the International Public Sector Accounting Standards Board (IPSASB), or national equivalents]*. The executing agency and/or implementing agency are responsible for preparing the project financial statements, not the auditor.

## VI. AUDIT DELIVERABLES

### A. Audited Project Financial Statements

9. An auditor's opinion providing reasonable assurance over the project financial statements, and project financial statements comprising the following:

**Table 1: Content of the Project Financial Statements**

For Cash-Based Financial Statements	For Accrual-Based Financial Statements
A statement of cash receipts and payments	A statement of financial position (balance sheet)
A statement of budgeted versus actual expenditures	A statement of financial performance (income statement)
A statement of imprest account (where applicable)	A statement of cash flows
A summary statement of expenditures (where applicable)	A statement of changes in net assets/equity (where applicable)
Significant accounting policies and explanatory notes	A statement of imprest account (where applicable)
Any additional schedules agreed (e.g., a summary of assets)	Significant accounting policies and explanatory notes
	Statement of budgeted versus actual expenditures
	Summary statement of expenditures (where applicable)
	Any additional schedules agreed

### B. Reasonable Assurance Opinion over the Use of Loan Proceeds and Compliance with Financial Covenants

10. The auditor will provide a reasonable assurance opinion following *[ISAE 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information" or ISSAI 4200 "Compliance Audit Related to the Audit of Financial Statements"]* for the following confirmations provided by Management in the Statement of Compliance:

- (i) That the proceeds of the loan were used only for the purpose(s) of the project; and
- (ii) That the borrower or executing agency was in compliance with the financial covenants of the legal agreement(s), where applicable.

11. The auditor will outline the degree of compliance for each of the financial covenants in the loan agreement.

### C. Management Letter

12. The auditor will provide a management letter containing, at a minimum, the following:

- (i) Any weaknesses in the accounting and internal control systems that were identified during the audit, including any irregularity in the use of the imprest fund and statement of expenditures (SOE) procedures (where applicable);
- (ii) Any identified internal control weaknesses related to the procurement process such as, over the bidding, evaluation and contract management domains;
- (iii) Recommendations to rectify identified weaknesses;
- (iv) Management's comments on the audit recommendations along with the timeframe for implementation;
- (v) The status of significant matters raised in previous management letters;
- (vi) Any other matters that the auditor considers should be brought to the attention of the project's management; and
- (vii) Details of any ineligible expenditure<sup>15</sup> identified during the audit. Expenditure is considered ineligible if it refers to (i) expenditures incurred for purposes other than the ones intended under the legal agreement(s); (ii) expenditures not allowed under the terms of the legal/financing agreements; and (iii) expenditures incurred in violation of applicable government regulations.

#### **D. Specific Considerations**

13. The auditor will, during the course of the audit, pay particular attention to the following:
- (i) The use of external funds in accordance with the relevant legal and financing agreements;
  - (ii) The provision of counterpart funds in accordance with the relevant agreements and their use only for the purposes intended;
  - (iii) The maintenance of proper books and records;
  - (iv) The existence of project fixed assets and internal controls related thereto;
  - (v) Where the audit report has been issued under ISA 800 or ISSAI 1800, it shall include the mandatory Emphasis of Matter paragraph alerting users of the audit report that the project financial statements are prepared in accordance with a special purpose framework and that, as a result, the project financial statements may not be suitable for another purpose. The auditor shall include this paragraph under an appropriate heading;
  - (vi) Where reasonable assurance has been provided using ISAE 3000 or ISSAI 4200, the assurance report must contain, among others:
    - A statement that the engagement was performed in accordance with ISAE 3000 or ISSAI 4200;
    - Subject matter;
    - Criteria for measurement;
    - A summary of the work performed; and
    - The auditor's conclusion.
  - (vii) On the imprest fund procedure (where applicable), audit procedures are planned and performed to ensure (a) the imprest account (and any sub-accounts) has been managed in accordance with ADB's Loan Disbursement Handbook, (b) the cash balance of the imprest account (and any sub-accounts) is supported by evidence, (c) the expenditures paid from the imprest account (and any sub-accounts) comply with the approved project purpose and cost categories stipulated in the loan agreement, and (d) the amount of expenditures paid from

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<sup>15</sup> If the auditor reports any ineligible expenditure in the management letter, the details of the findings should include the funding source to which the observation relates.

- the imprest account (and any sub-accounts) comply with disbursement percentages stipulated in the loan agreement;
- (viii) Adequate supporting documentation has been maintained to authenticate claims stated in the SOE for reimbursement of eligible expenditures incurred and liquidation of advances provided to the imprest account (where applicable);
  - (ix) On the SOE procedure (where applicable), audit procedures are planned and performed to ensure that (a) the SOEs have been prepared in accordance with ADB's Loan Disbursement Handbook, (b) the individual payments for expenditures stated in the SOE are supported by evidence, (c) the expenditures stated in the SOEs comply with the approved project purpose and cost categories stipulated in loan agreement, and (d) the amount of expenditures stated in the SOEs comply with disbursement percentages stipulated in the loan agreement; and
  - (x) Any weaknesses in internal controls over the procurement process.

14. All reports must be presented in the English language within 6 months following the end of the fiscal year.

15. Public disclosure of the project financial statements, including the auditor's opinion on the audited project financial statements, will be guided by ADB's Public Communications Policy (2011). After review, ADB will disclose the audited project financial statements and the opinion of the auditor on the audited project financial statements no later than 14 calendar days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter and the additional auditor's opinions will not be disclosed<sup>16</sup>.

## **VII. OTHER MATTERS**

### **A. Statement of Access**

16. The auditor will have full and complete access, at all reasonable times, to all records and documents including books of account, legal agreement(s), bank records, invoices and any other information associated with the project and deemed necessary by the auditor.

17. The auditor will be provided with full cooperation by all employees of [XYZ] and the project implementing units, whose activities involve, or may be reflected in, the annual project financial statements. The auditor will be assured rights of access to banks and depositories, consultants, contractors and other persons or firms hired by the employer.

### **B. Independence**

18. The auditor will be impartial and independent from any aspects of management or financial interest in the entity or project under audit. In particular, the auditor should be independent of the control of the entity. The auditor should not, during the period covered by the audit, be employed by, or serve as director for, or have any financial or close business relationship with the entity. The auditor should not have any close personal relationships with any senior participant in the management of the entity. The auditor must disclose any issues or relationships that might compromise their independence.

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<sup>16</sup> This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

**C. Auditor Experience**

19. The auditor must be authorized to practice in the country and be capable of applying the agreed auditing standards. The auditor should have adequate staff, with appropriate professional qualifications and suitable experience, including experience in auditing the accounts of projects or entities comparable in nature, size and complexity to the project or entity whose audit they are to undertake. To this end, the auditor is required to provide curriculum vitae (CV) of the personnel who will provide the opinions and reports, together with the CVs of managers, supervisors and key personnel likely to be involved in the audit work. These CVs should include details of audits carried out by these staff, including ongoing assignments.

**ANNEX 3  
BID DOCUMENTS**

**UPDATED CONTRIBUTION TO THE ADB RESULTS FRAMEWORK**

<b>Level 2 Results Framework Indicators</b>			
<b>No.</b>	<b>(Outputs and Outcomes)</b>	<b>Targets</b>	<b>Methods / Comments</b>
1	Households with new or improved water supply (number)	3,493	Detailed engineering designs - Agdash: 3,493 households - Beylagan: 0 households
2	Households with new or improved sanitation (number)	3,200	Detailed engineering designs - Agdash: 3,200 households - Beylagan: 0 households
3	Wastewater treatment capacity added or improved (cubic meters per day)	20,000	Preliminary design of STP in Agdash and Beylagan
4	Water supply pipes installed or upgraded (length of network in kilometer)	37.2	Detailed engineering designs: - Agdash: 37.2 km - Beylagan: 0 km

Source: Asian Development Bank estimates.

## AGDASH FINANCIAL ANALYSIS

### A. Introduction

1. The financial analysis was conducted on the projected costs and revenues over 28 years (between 2016 and 2043) covering the entire water supply (WS), water supply and sanitation (WSS) network and wastewater treatment plant (WWTP) constructed under in all Tranches including Project 4 of the Investment Program. The main financial viability parameters analyzed were (i) the financial internal rate of return (FIRR), which should be greater than the weighted average cost of capital (WACC) with the financial net present value as proxy; (ii) operating ratio, which should be less than or equal to one when the WS and WSS system becomes fully operational; and (iii) tariff affordability, normally considered affordable if the resulting monthly charge is 5% or less than the average monthly household income. The analysis looked closely at the operating ratio as a main indicator of sustainability.

### B. Basis for Financial Projections

2. **Revenue.** Revenues were based on domestic and non-domestic demand for water and sewerage services. Tariffs are programmed to increase every 2 years (from 2018 onwards after the system is commissioned and fully operational until 2028), to cover (i) operation and maintenance (O&M) costs; (ii) O&M costs plus depreciation; and (iii) O&M costs plus total debt service. Tariff increments are benchmarked on domestic customers' affordability and targeted cost recovery level. The demand forecast assumes that all water from existing alternative sources will be replaced with subproject water supply.

3. **Operation & Maintenance.** It is assumed that the current O&M costs will remain at their existing level until 2018, when the new water and sewerage system will start operation. The current O&M costs are adjusted for inflation from 2016.

4. Keeping the staff requirement norm of 10 staff/1000 household connections, the required staff strength for water and waste water operation is estimated. The annual average cost of staff is estimated to \$8,899 including taxes and social security premiums for 2013. This figure is escalated annually according to the real gross domestic product (GDP) growth rate. The energy expenditure of the Utility is calculated to be \$0.071/m<sup>3</sup> and expenditures for chemicals \$0.014/m<sup>3</sup> produced after 2013. Those figures are also adjusted for inflation. The maintenance of civil works is taken as 1% of asset value while the repair and maintenance of electrical and mechanical equipment is calculated as 1% of the value of assets. There will be a dramatic increase in O&M expenditures starting from 2016. This is mostly due to the recruitment of additional staff. Also, the repair and maintenance of new assets will constitute a major portion of the O&M expenditures.

5. **Current Tariffs.** Current water and sewerage tariffs were increased and made effective from May 2016,<sup>1</sup> for both domestic and non-domestic customers, whereas standard (norm)

<sup>1</sup>

#### Water Tariff Revision in Azerbaijan from May 2016

Details	2016 AZN/m3	2016 USD/m3
<b>Water</b>		
Domestic	0.300	0.199
Non-Domestic AZN/m4	1.000	0.663
<b>Sewerage</b>		
Domestic AZN/m3	0.150	0.099
Non-Domestic AZN/m4	1.000	0.663

Source: <http://www.azernews.az/business/96585.html>; @ 1.5093 AZN/USD.

domestic water consumption was reduced from 6 cubic meters (m<sup>3</sup>)/capita/month to 5 m<sup>3</sup>/capita/month for consumers having no water meters (unmeasured consumption). As of the beginning of 2018, all customers are assumed to be billed based on actual water meters since all customers will have water meters upon completion of the subproject. For financial analysis, the revised water and sewer tariff are considered from 2016. For houses without installed meters, the consumption is fixed as 4.97 m<sup>3</sup> per person, per month.

6. Detailed breakdown of tariff increase to 2016 includes:
  - a. domestic water supply: from \$0.151/m<sup>3</sup> to \$0.199/m<sup>3</sup> (32% increase);
  - b. domestic sanitation charge: from \$0.032/ m<sup>3</sup> to \$0.099/m<sup>3</sup>.(211% increase);
  - c. non-domestic water supply: from \$0.663/m<sup>3</sup> to \$0.663/m<sup>3</sup> (0% increase); and
  - d. non-domestic sanitation: from \$0.216/m<sup>3</sup> to \$0.663/m<sup>3</sup> (207% increase).

### C. Financial Projection

7. **Tariff.** In the financial projections, where revenues and costs are given in nominal terms, the tariffs are projected to increase biennially between 2018 and 2028 to cover O&M cost and total debt service. The same biennial tariff increase is applied to both water and wastewater tariffs of domestic and non-domestic customers (25% biennial from 2018 to 2028 for water supply; and 50% in 2018 and 2020; 25% every 2 years from 2022 to 2028 for sewerage).

8. **Affordability Analysis.** The future tariff revenue needs to be sufficient for the Agdash Water and Sewerage Administration to operate on a sustainable basis. At the same time the tariffs should be affordable to the clients of water related services. An affordability analysis was undertaken to compare the level of household water expenditure with the average household income presents the affordability levels for the subproject for years 2016, 2020, and 2025. Average water and wastewater affordability ratio (bill/monthly household income) is calculated to be 0.15% in 2016, 0.23% in 2020 and 0.30% in 2025 which is well below the internationally accepted threshold limit of 5%, which implies that the proposed domestic tariffs are easily affordable by population.

9. In Agdash, no special study has been conducted to measure people's willingness to pay for piped water. However, the price people pay for alternative sources can be a good indicator of willingness to pay. Under current circumstances, only 32% of the population in Agdash can be served by piped water, many people buy water from private vendors that bring water to their door by trucks. The price of this service is AZN5-6/m<sup>3</sup>. This indicates that people of Agdash are willing to pay up to AZN5/m<sup>3</sup> (\$6.3/m<sup>3</sup>) for drinking water in 2011. Suitable update to this 2011 willingness rate is considered for the present analysis (\$6.3/m<sup>3</sup> and \$77.38 per household per month in 2016). This analysis discussed above clearly underlines that the adopted tariff rates along with their revision provisions are within the affordable limit.

**Table 1: Tariff Affordability**

Particulars	2016	2020	2025
Persons per household	4.50	4.50	4.50
Consumption, lpcd (1)	140.00	163.33	163.33
Water tariff rate \$/m <sup>3</sup>	0.20	0.31	0.49
Sanitation tariff rate \$/m <sup>3</sup>	0.10	0.16	0.24
Ave. consumption/month-m <sup>3</sup> /HH	18.90	22.05	22.05
Ave. HH income/month-\$ <sup>b</sup>	3,743	4,379	5,328
Willingness to pay-\$/month/HH <sup>a</sup>	77	91	110

Particulars	2016	2020	2025
Ave. HH water bill/month-\$	3.76	6.85	10.70
Ave. HH water + sanitation bill/month-\$	5.64	10.27	16.05
% of income spent for WS	0.10%	0.16%	0.20%
% of income spent for WS + WSS	0.15%	0.23%	0.30%

Ave. = average, HH = household, lpcd = liters per capita per day, m<sup>3</sup> = cubic meter, WS = water supply; WSS = water supply and sanitation.

<sup>a</sup> Based on focus group discussions in 2011 and updated @4% annual growth.

<sup>b</sup> Projected based on the per capita GDP for 2014 and updated to 2016.

(<http://www.tradingeconomics.com/azerbaijan/gdp-per-capita>). Beyond 2016, projected with annual growth rate of 4%.

Sources: ADB and Azersu estimates.

10. **Full Cost Recovery.** While a full-cost recovery tariff structure would be ideal, reality shows that beginning from 2016 when the repayment of interest of the loan starts, the full-cost covering tariff rate will be far above the affordability threshold for Agdash and Beylagan. Even, with the increased tariff, the full-cost covering tariff is not feasible during the analysis period. In all years, the tariff to cover operation and maintenance costs only is affordable. However, with the increase of GDP and the household (HH) income, with the assumption of the tariff rate is set to cover a nominal 2% of HH income, then full cost recovery may be feasible during the analysis period.

11. The period of analysis to determine the viability gap funding (VGF) is different for each scenario from 2019 up to 2032 depending on the year in which FIRR gets equal to weighted average cost of capital (WACC)<sup>2</sup> with VGF contributions from the government. Analysis indicates that based on assumed tariffs, the annual VGF from government is estimated to \$2.00 million during the period totaling \$28.00 million. However, the worst case scenario of project cost increase by 6.5% the Agdash subproject needs a VGF of \$ 2.25 million per year from 2019 to 2032 (total of \$31.5 million) to attain an FIRR being equal to WACC.

12. From the analysis, tariff increased in 2016 and subsequently proposed for the subproject is within customer affordability but will not generate enough revenues to cover total debt service. A VGF was therefore considered during and after the project implementation between 2019 and 2032 to cover total debt service. Politically, exponential increases are unacceptable, and it is proposed that a VGF will provide the buffer to meet required operating ratios before financial reforms and progressive tariff increases reduce dependence on subsidies.

13. Analysis result indicates that based on assumed tariffs, the average annual revenue between 2019 and 2032 is about \$5.461 million, O&M is about \$0.807 million, and O&M plus total debt service payment is about \$8.766 million for the same period resulting in negative cash flow. This will further aggravate in the negative sensitivity scenarios. To tide over this issue, VGF from government is proposed during this period, as further increase in tariff (in addition to the tariff increase suggested during this period) will be politically objected. The worst case scenario of the project cost increase by 6.5% the Agdash subproject needs a VGF of \$2.25 million per year from 2019 to 2032 (total of \$31.5 million) to attain an FIRR being equal to WACC.

14. **Weighted Average Cost of Capital.** The WACC was calculated in real terms and was used as the hurdle rate for the FIRR to measure subproject viability. Funding sources are the Ordinary Capital Resources (OCR) loan and government contribution. Average inflation is estimated at 2.5% per annum for foreign cost and at 5.65% for local costs. The rates are

<sup>2</sup> In the scenario of without VGF, the WACC is 0.85%. When one includes VGF, the WACC will vary as the VGF alters the government's contribution in the project funding.

computed on after-tax basis, resulting in the WACC in real terms estimated at 0.85% for the OCR loan and presented in Table 2.

**Table 2: Weighted Average Cost of Capital**  
(\$ million)

Particulars	Capital	% Total	Cost of Capital After Tax	Weight'd Capital	Inflation rate	WACC Real
ADB	131.817	85.89%	2.25%	2.971	2.50%	
Government	21.658	14.11%	12.00%	2.599	5.65%	0.85%
Total Capital Investment	153.474	100.00%	<b>3.63%</b>	5.570	2.94%	<b>0.85%</b>

ADB = Asian Development Bank. WACC = weighted average cost of capital. Government contribution does not include viability gap funding.

Source: Azersu and ADB estimates.

15. **Sensitivity Analysis.** Table 3 provides the results of sensitivity tests and indicates that the Agdash subproject is viable in the base case. Under adverse economic conditions as shown below, the project is not found viable as the FIRR is becoming less to WACC in few cases. The sensitivity analysis assumes that the VGF will be provided by the Government and this may need to enhance further to face the adverse conditions, if required.

**Table 3: Financial Internal Rate of Return – with VGF**

Particulars	FIRR	FNPV (\$ million)	* Switching Value
Base case	1.88%	0.174	
Capital cost plus 5%	1.52%	(5.025)	0.17%
O&M cost plus 10%	1.77%	(1.374)	1.12%
Revenue less 5%	1.53%	(4.651)	0.18%
1-Year delay in benefit	1.39%	(6.424)	
Capital and O&M cost plus 5%	1.47%	(5.798)	0.15%

FIRR = financial internal rate of return; FNPV = financial net present value, O&M = operation and maintenance, VGF = viability gap funding.

\* Switching value = change in parameter that will make the FIRR equal to the WACC.

With VGF, the WACC has increased to 1.867 from 0.85.

Source: Consultant's estimates.

16. Table 4 provides the results of sensitivity tests and indicates that the Agdash subproject is not viable in the base case and under adverse economic conditions as shown below. The sensitivity analysis assumes that there is no VGF will be provided by the government.

**Table 4: Financial Internal Rate of Return – without VGF**

Particulars	FIRR	FNPV (\$ million)	* Switching Value
Base case	-2.95%	(60.704)	
Capital cost plus 5%	-3.23%	(67.199)	68.39%
O&M cost plus 10%	-3.09%	(62.505)	277.05%
Revenue less 5%	-3.32%	(65.064)	52.34%
1-Year delay in benefit	-3.43%	(64.807)	
Capital and O&M cost plus 5%	-3.30%	(68.099)	55.03%

FIRR = financial internal rate of return; FNPV = financial net present value, O&M = operation and maintenance, VGF = viability gap funding.

\* Switching value = change in parameter that will make the FIRR equal to the WACC.(0.85)

Source: Consultant's estimates.

17. **Conclusion.** The subproject is financially viable when (i) tariff increases are implemented every 2 years starting in 2018 until 2028, and (ii) the VGF is provided by the government until 2032. Income affordability is a major factor in rationalizing tariffs, thus the monthly HH income needs to be reviewed periodically. The sensitivity analysis indicates that the subproject FIRR for Agdash is more than the WACC under the base case and less to FIRR in the remaining adverse sensitivity scenarios. This implies the need for adequate risk mitigation measures during the implementation and operation period.

18. In the scenario of VGF not provided by the government, the subproject will not become financially viable. However, the tariff revenue ensures 100% O&M recovery and partial capital from the start year. Considering the limitation to tariff increase on users affordability and the likely political objections, VGF from the government may require to tide over the debt service requirements during the initial period.

**Table 5: Financial Internal Rate of Return – Without Viability Gap Funding Scenario**  
(\$ million)

Year	Revenue	Viability Gap Funding	Delayed Revenue	Financial Cost			Net Benefits						
				Capital Cost	O&M Cost	Total Cost	Base case	Capital + 5%	O&M + 10%	Capital + 6.5%	Revenue -5%	1-yr Delay in Benefit	Cap & O&M + 5%
2016	0.027	-	-	46.085	0.105	46.189	(46.162)	(48.466)	(46.173)	(49.158)	(46.163)	0	(48.472)
2017	0.587	-	0.027	57.109	0.280	57.390	(56.803)	(59.658)	(56.831)	(60.515)	(56.832)	-46.19	(59.672)
2018	1.139	-	0.587	25.689	0.226	25.914	(24.775)	(26.059)	(24.797)	(26.445)	(24.832)	-57.36	(26.070)
2019	1.250	-	1.139	-	0.741	0.741	0.509	0.509	0.435	0.509	0.447	-25.33	0.472
2020	1.685	-	1.250	-	0.749	0.749	0.936	0.936	0.861	0.936	0.852	0.50	0.899
2021	1.762	-	1.685	-	0.752	0.752	1.010	1.010	0.934	1.010	0.922	0.93	0.972
2022	2.174	-	1.762	-	0.757	0.757	1.417	1.417	1.341	1.417	1.308	1.00	1.379
2023	2.220	-	2.174	-	0.761	0.761	1.459	1.459	1.383	1.459	1.348	1.41	1.421
2024	2.744	-	2.220	-	0.767	0.767	1.977	1.977	1.900	1.977	1.840	1.45	1.939
2025	2.824	-	2.744	-	0.771	0.771	2.054	2.054	1.977	2.054	1.912	1.97	2.015
2026	3.491	-	2.824	-	0.779	0.779	2.711	2.711	2.633	2.711	2.537	2.04	2.672
2027	3.593	-	3.491	-	0.781	0.781	2.812	2.812	2.733	2.812	2.632	2.71	2.772
2028	4.441	-	3.593	-	0.792	0.792	3.649	3.649	3.570	3.649	3.427	2.80	3.610
2029	4.572	-	4.441	-	0.796	0.796	3.776	3.776	3.696	3.776	3.547	3.65	3.736
2030	4.843	-	4.572	-	0.798	0.798	4.045	4.045	3.965	4.045	3.803	3.77	4.005
2031	4.655	-	4.843	-	0.802	0.802	3.853	3.853	3.773	3.853	3.621	4.04	3.813
2032	4.696	-	4.655	-	0.806	0.806	3.891	3.891	3.810	3.891	3.656	3.85	3.850
2033	4.738	-	4.696	3.498	0.808	4.306	0.432	0.257	0.351	0.205	0.195	0.39	0.217
2034	4.780	-	4.738	-	0.812	0.812	3.968	3.968	3.887	3.968	3.729	3.93	3.928
2035	4.823	-	4.780	-	0.816	0.816	4.007	4.007	3.925	4.007	3.766	3.96	3.966
2036	4.866	-	4.823	-	0.818	0.818	4.047	4.047	3.965	4.047	3.804	4.00	4.006
2037	4.909	-	4.866	-	0.822	0.822	4.087	4.087	4.004	4.087	3.841	4.04	4.045
2038	4.953	-	4.909	-	0.826	0.826	4.126	4.126	4.043	4.126	3.878	4.08	4.085
2039	4.996	-	4.953	-	0.829	0.829	4.168	4.168	4.085	4.168	3.918	4.12	4.126
2040	5.041	-	4.996	-	0.833	0.833	4.208	4.208	4.125	4.208	3.956	4.16	4.166
2041	5.086	-	5.041	-	0.837	0.837	4.249	4.249	4.165	4.249	3.994	4.20	4.207
2042	5.131	-	5.086	-	0.839	0.839	4.291	4.291	4.207	4.291	4.035	4.25	4.249
2043	5.176	-	5.131	-	0.844	0.844	4.333	4.333	4.249	4.333	4.074	4.29	4.291
NPV	87.203	-	82.417	129.899	18.007	147.907	(60.704)	(67.199)	(62.505)	(69.147)	(65.064)	(64.807)	(68.099)
				Discount Rate @ WACC	FIRR		-2.95%	-3.23%	-3.09%	-3.31%	-3.32%	-3.43%	-3.30%
					FNPV		60.704	67.199	62.505	69.147	65.064	64.807	68.099
				Sensitivity Indicator	FIRR			1.46	0.36	1.45	1.91	2.30	1.82
					FNPV			2.14	0.30	2.14	1.44	1.23	2.44
				Switching Value	FIRR			68.39%	277.05%	68.95%	52.34%	43.40%	55.03%
					FNPV			46.73%	337.11%	46.73%	69.61%	81.18%	41.04%

FIRR = financial internal rate of return, FNPV = financial net present value, NPV = net present value, O&M = operation and maintenance.

Source: Azersu estimates.

**Table 6: Financial Internal Rate of Return – With Viability Gap Funding Scenario**  
(\$ million)

Year	Revenue	Viability Gap Funding	Delayed Revenue	Financial Cost			Net Benefits						
				Capital Cost	O&M Cost	Total Cost	Base case	Capital + 5%	O&M + 10%	Capital + 6.5%	Revenue -5%	1-yr Delay in Benefit	Cap & O&M + 5%
2016	0.027	-	-	46.085	0.105	46.189	(46.162)	(48.466)	(46.173)	(49.158)	(46.163)	0	(48.472)
2017	0.587	-	0.027	57.109	0.280	57.390	(56.803)	(59.658)	(56.831)	(60.515)	(56.832)	-46.19	(59.672)
2018	1.139	-	0.587	25.689	0.226	25.914	(24.775)	(26.059)	(24.797)	(26.445)	(24.832)	-57.36	(26.070)
2019	3.250	2.000	1.139	(2.000)	0.741	(1.259)	6.509	6.609	6.435	6.639	6.347	-25.33	6.572
2020	3.685	2.000	3.250	(2.000)	0.749	(1.251)	6.936	7.036	6.861	7.066	6.752	6.50	6.999
2021	3.762	2.000	3.685	(2.000)	0.752	(1.248)	7.010	7.110	6.934	7.140	6.822	6.93	7.072
2022	4.174	2.000	3.762	(2.000)	0.757	(1.243)	7.417	7.517	7.341	7.547	7.208	7.00	7.479
2023	4.220	2.000	4.174	(2.000)	0.761	(1.239)	7.459	7.559	7.383	7.589	7.248	7.41	7.521
2024	4.744	2.000	4.220	(2.000)	0.767	(1.233)	7.977	8.077	7.900	8.107	7.740	7.45	8.039
2025	4.824	2.000	4.744	(2.000)	0.771	(1.229)	8.054	8.154	7.977	8.184	7.812	7.97	8.115
2026	5.491	2.000	4.824	(2.000)	0.779	(1.221)	8.711	8.811	8.633	8.841	8.437	8.04	8.772
2027	5.593	2.000	5.491	(2.000)	0.781	(1.219)	8.812	8.912	8.733	8.942	8.532	8.71	8.872
2028	6.441	2.000	5.593	(2.000)	0.792	(1.208)	9.649	9.749	9.570	9.779	9.327	8.80	9.710
2029	6.572	2.000	6.441	(2.000)	0.796	(1.204)	9.776	9.876	9.696	9.906	9.447	9.65	9.836
2030	6.843	2.000	6.572	(2.000)	0.798	(1.202)	10.045	10.145	9.965	10.175	9.703	9.77	10.105
2031	6.655	2.000	6.843	(2.000)	0.802	(1.198)	9.853	9.953	9.773	9.983	9.521	10.04	9.913
2032	6.696	2.000	6.655	(2.000)	0.806	(1.194)	9.891	9.991	9.810	10.021	9.556	9.85	9.950
2033	4.738	-	6.696	3.498	0.808	4.306	0.432	0.257	0.351	0.205	0.195	2.39	0.217
2034	4.780	-	4.738	-	0.812	0.812	3.968	3.968	3.887	3.968	3.729	3.93	3.928
2035	4.823	-	4.780	-	0.816	0.816	4.007	4.007	3.925	4.007	3.766	3.96	3.966
2036	4.866	-	4.823	-	0.818	0.818	4.047	4.047	3.965	4.047	3.804	4.00	4.006
2037	4.909	-	4.866	-	0.822	0.822	4.087	4.087	4.004	4.087	3.841	4.04	4.045
2038	4.953	-	4.909	-	0.826	0.826	4.126	4.126	4.043	4.126	3.878	4.08	4.085
2039	4.996	-	4.953	-	0.829	0.829	4.168	4.168	4.085	4.168	3.918	4.12	4.126
2040	5.041	-	4.996	-	0.833	0.833	4.208	4.208	4.125	4.208	3.956	4.16	4.166
2041	5.086	-	5.041	-	0.837	0.837	4.249	4.249	4.165	4.249	3.994	4.20	4.207
2042	5.131	-	5.086	-	0.839	0.839	4.291	4.291	4.207	4.291	4.035	4.25	4.249
2043	5.176	-	5.131	-	0.844	0.844	4.333	4.333	4.249	4.333	4.074	4.29	4.291
NPV	96.486	23.122	91.691	103.963	15.472	119.435	0.174	(5.025)	(1.374)	(6.584)	(4.651)	(6.424)	(5.798)
				Discount Rate @ WACC	FIRR	1.88%	1.52%	1.77%	1.42%	1.53%	1.39%	1.47%	
					FNPV	0.174	5.025	1.374	6.584	4.651	6.424	5.798	
				Sensitivity Indicator	FIRR		579.95	89.57	574.30	565.99	811.20	667.85	
					FNPV		599.08	89.16	599.08	555.99	764.90	688.23	
				Switching Value	FIRR		0.17%	1.12%	0.17%	0.18%	0.12%	0.15%	
					FNPV		0.17%	1.12%	0.17%	0.18%	0.13%	0.15%	

FIRR = financial internal rate of return, FNPV = financial net present value, NPV = net present value , O&M = operation and maintenance.

Source: Azersu estimates.

## AGDASH ECONOMIC ANALYSIS

### A. Introduction and Methodology

19. The economic analysis was undertaken according to ADB Guidelines on the Economic Analysis of Projects.<sup>3</sup> For the overall Investment Program, the analysis describes the economic rationale and the rationale for public intervention. The analysis assumes that in the “future without project” scenario, the existing systems will continue to deteriorate and level of services will further reduce from 2016 levels. The economic analysis also evaluates the cost-effectiveness of subproject. The subproject analysis compares the economic internal rate of return (EIRR) with the economic opportunity cost of capital (EOCC), assumed at 12%, as applied in infrastructure project studies in Azerbaijan. Sensitivity and risk analyses are undertaken to assess the robustness of the subprojects under adverse economic conditions. The analysis uses shadow pricing and standard conversion factors to convert the financial cost and benefits into economic terms. Specifically, for converting the financial cost into economic cost, the shadow exchange rate factor was used for imported goods, the shadow wage rate factor for unskilled labor and the standard conversion factor for non-traded goods and skilled labor were applied. The analysis is undertaken in constant 2016 prices. All the project cost disbursements before 2016 from 2012 were suitably updated to 2016 level.

### B. Economic Rationale

20. The Investment Program economic rationale was based on: fostering economic growth and improving urban WS and WSS services, and improving institutional effectiveness. The analysis describes the economic rationale and undertakes a viability analysis of the subproject. A sensitivity analysis was conducted to determine the effects of several adverse economic conditions on the overall subproject viability.

21. Demand analysis. Water demand estimates for future years are determined by multiplying the current unit of demand by the projected number of future users in the water system. It is assumed new users added to the system will consume water at the same rate as current users. Population growth for the period of 2016-2043 is assumed to be at 0.89%. The 2016-2043 period assumption is based on census data, historical data provided by Azersu as well as government forecasts for economic growth. For the sewage network, the users are equal to number of users for water assuming that each water connection will also have a sewerage connection. In terms of volume of water produced, this is based on consumption of water and takes into account of non-revenue water (NRW) that is produced but not billed. For the demand analysis of wastewater, the quantity of wastewater is assumed to equal to the total water consumed, considering allowance of about 10% for infiltration of water into sewerage system due to high ground water level in the region.

### C. Economic Benefits

22. The subproject will (i) improve urban WSS infrastructure, and (ii) improve service delivery through better resource management. For the Agdash subproject, the component choice was based on the following decisions: replacing transmission mains and pumps, rehabilitating intake structures and reservoirs, and constructing water distribution and sewerage networks and a new WWTP.

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<sup>3</sup> ADB. 1998. *Guidelines for the Economic Analysis of Water Supply Projects*. Manila.

23. Improved service delivery in the water supply in terms of coverage and per capita water supply (from the existing 140 liter per capita day (lpcd) on an average to 163 lpcd on project completion), has two major components for the purpose of benefit quantification:

- Non-incremental Water Supply. This component includes the increase in water sold from the public system due to the project but resulting in no effect on total consumption for the following reason: the non-incremental water supply replaces water consumed from private vendors, shallow wells and tanks/streams. This benefit (\$775.50/HH/year) is evaluated by using the resource cost savings approach i.e., savings in cost of replaced water which include the components like water collection time<sup>4</sup> and water storage cost (\$33.71/HH/year) and purchase of water from different sources;<sup>5</sup> and
- Incremental Water Supply. This component has a positive effect on the total consumption due to the proposed project. This component of benefit is evaluated by using the demand price, or willingness to pay (WTP) for additional consumption. The incremental water supply benefit is evaluated by the average of WTP price (\$1.68) and average incremental economic cost (\$7.25). WTP price arrived from WTP survey data available for the year 2009 is used for the analysis.

24. Sanitation benefits<sup>6</sup> are based on (i) savings from transitions from septic tank to sewerage network, (ii) avoidance of overflow, (iii) benefits derived from the WWTP, and (iv) savings in time cost for loss of work/leisure time due to water related diseases. The unit savings in economic terms for switching from septic tank to the sewerage network is estimated to be \$71.39/HH/year, taking into account the maintenance cost of septic tanks and cost of emptying the tank. This is multiplied by the number of households connected to the sewerage network. The overflow<sup>7</sup> unit cost is estimated at \$10.77/HH/per year, multiplied by the number of HH connected to the sewerage network. The unit benefit assigned to WWTP is \$240.88/HH/year, based on avoidance of environmental clean-up and remedial expenditures at the Agdash town level, direct and indirect income, and employment generation as well as increase in property values as a result of expenditures on the WWTP.

25. The proposed subproject will improve the water supply and sewerage infrastructure with better supply service from 2019 and 100% service coverage. Project beneficiaries will be 30,103 persons (2019). Present daily per capita water supply of 140 litres with only 30% coverage will be replaced with 163 litres treated pipe water with 100% coverage under the proposed subproject. Similarly the present sewer coverage of 19% will be improved to 100% for sewer improvement resulting in health and hygienic related benefits to the beneficiaries. Summary of the project benefits for water supply and sewerage used in the analysis, which are based on the assessment of the project beneficiaries in Agdash in 2011 and subsequently escalated with price inflation to the base year 2016, are presented in Table 7.

<sup>4</sup> As suggested in ADB. 1998. *Guidelines for the Economic Analysis of Water Supply Projects*. Manila, 50% of the market wage rate for unskilled female labour is considered. In the present case \$775.50/HH in economic terms is estimated as annual cost of time saved in water collection. \$2.69/hour as unskilled labour wage rate (2016), and an average 60 minutes of daily water collection time per household arrived from Baseline Survey (2011) were adopted.

<sup>5</sup> Annual savings in purchased water is estimated at \$173.56/HH by tankers and \$1,134/HH by bottled water.

<sup>6</sup> The estimates for the unit benefit for switching from septic tank are based on historical costs for septage cleanup, whereas the unit benefit for the WWTP is based on estimates provided by Azersu accounting for the aggregation of employment created through the construction and operation of the WWTP as well as the improvement of overall environment as a result of wastewater being treated.

<sup>7</sup> The amount reflects the avoided costs for cleaning the houses and clothes after an overflow taking into account necessary cleaning time, material costs and the expected number of occurrences per year.

**Table 7: Economic Data**

<b>Item</b>	<b>Value in USD</b>
Annual Household Income (Median)	17,219
<b>Coping strategy Per HH Per Year – Water Supply</b>	
Savings in Time Cost for Water Collection <sup>8</sup>	775.50
Savings in lieu of Bottled Water Purchase Cost <sup>9</sup>	1,134.00
Savings in lieu of Tanker Water Supply Purchase Cost <sup>10</sup>	173.56
Savings in Annual Water Storage Facilities Cost <sup>11</sup>	33.71
<b>Health (Sewerage + WWTP) Benefits Per HH Per Year - Sewerage</b>	
Savings in Cost Cleaning Septic Tank <sup>12</sup>	71.39
Savings in time cost for cleaning house due to overflow <sup>13</sup>	10.77
Savings in time cost for loss of work due to water related diseases <sup>14</sup>	6.78
Savings in cost for loss of leisure due to water related diseases <sup>12</sup>	16.95
Avoidance of environmental clean-up and remedial expenditures due to WWTP <sup>15</sup>	240.88

HH = households, WWTP = wastewater treatment plant.

Source: Azersu estimates.

#### **D. Economic Costs**

26. In the case of Agdash, a combined economic analysis was done for the water supply and sewerage system financed under Tranches 2 and 4. In brief, the subprojects entail (i) water supply transmission main; (ii) rehabilitation and construction of reservoirs (iii) construction of a new WWTP; (iv) construction of water head works; and (v) construction of water supply and sewerage networks.

27. The economic capital investment and annual O&M costs were derived from the financial cost estimates using the following methodology: taxes and duties are excluded from the financial as well as price inflation, the subproject capital and O&M costs are distributed into traded and non-traded components and labor, unskilled labor is available in urban centers, which means the opportunity cost is lower than the wage rate, and the economic costs are given in real terms and phased over the project life of 28 years. In economic analysis, for converting the financial cost into economic cost, Shadow Exchange Rate Factor (SERF) for imported goods, Shadow Wage Rate Factor (SWRF) for unskilled labor, and Standard Conversion Factor (SCF) for non-traded goods and skilled labor were applied as shown below:

<sup>8</sup> 2 hours daily collection time \$2.69 per hour as wage rate and 50% as benefit.

<sup>9</sup> 14% population usage, 720 liters per year @ \$ 2.5 per liter.

<sup>10</sup> 55% households and \$26.30 monthly household exp. on tanker water.

<sup>11</sup> \$66.91 capital cost with 10 years life and annual O&M of \$16.06.

<sup>12</sup> @\$23.8 for septic tank cleaning charges per cleaning in economic terms and 3 cleanings in a year.

<sup>13</sup> 25% of houses are affected by flooding with 2 days spent for cleaning and @ \$2.69 wage rate / hour for unskilled labor used for cleaning.

<sup>14</sup> 12.5% of people affected by waterborne diseases with average 5 day work lost and 2 days leisure time lost, arrived from earlier base line survey, @ \$3.88 as average income / hour.

<sup>15</sup> Per capita clean up and remedial cost estimated in 2011 is updated to 2016 @6% annual growth and this is multiplied by the household size of 4.5.

**Table 8: Eco Taxes & Conversion Factors**

CW - LC unskilled	18%
CW - LC other	18%
Equipment – FC	33%
Equipment – LC	18%
SERF traded <sup>16</sup>	1.02
SWRF unskilled	0.80
Non-traded goods / skilled labour	1.00

Source: Azersu estimates.

## E. Cost Benefit Analysis

28. The economic benefit–cost ratio was used in the analysis to assess whether the subproject benefits outweigh costs. The benefit–cost ratio for the Agdash subproject is 1.263 thus making the subproject economically viable. See Table 9 for a detailed breakdown.

**Table 9: Summary Cost Benefit Analysis**

<b>Particulars</b>	<b>Value (USD Million)</b>
<b>1. Present value of benefits <sup>1/</sup></b>	
Non-incremental	75.310
Incremental	28.773
Health (Sewerage + WWTP) Benefits Per HH	14.577
<b>Total benefits</b>	<b>118.660</b>
<b>2. Present value of costs <sup>1/</sup></b>	
Capital investment and replacement	89.743
O&M costs	4.295
<b>Total costs</b>	<b>94.038</b>
<b>Benefit-cost ratio</b>	<b>1.263</b>

HH = households, O&M = operation and maintenance, WWTP = wastewater treatment plant.

<sup>1/</sup> Discounted at 12%, the economic opportunity cost of capital.

Source: Azersu estimates.

## F. Results of Economic Analysis

29. The EIRR and discounted net cash flows were determined by comparing benefit streams with cost streams. In base case, the EIRR is found to be 16.5% which is above the minimum required EOCC of 12%. The economic net present value (ENPV) (\$24.62 million) discounted at 12% is worked out to be positive. Also the economic benefit-to-cost ratio is 1.263. These all together underlines that the Agdash subproject becomes economically viable at the base case scenario.

30. Sensitivity analysis tests the robustness of the results (EIRR) of the base case scenarios by varying major parameters such as costs and benefits for the cases given below:

- a. Capital costs increased by 15%;
- b. O&M costs increased by 20%;
- c. Capital and O&M costs increased by 15%; and
- d. Benefits reduced by 10%.

31. The results of the sensitivity analysis are shown in Table 10. The switching value shown in this table is the increase/decrease in the parameter being tested which returns an EIRR equal to the opportunity cost of capital (12%).

<sup>16</sup> SERF worked out for 2014 was 1.03. However, the average SERF value for the period 2010-2014 (1.02) is used for the analysis.

**Table 10. Economic Analysis – Summary Results**

<b>Particulars</b>	<b>EIRR</b>	<b>ENPV (\$ million)</b>	<b>Switching Value(%)</b>	<b>Economic Cost Benefit Ratio</b>
Base case	16.5%	24.621		1.263
Capital cost plus 15%	13.8%	11.160	25%	1.105
O&M cost plus 20%	16.4%	23.762	600%	1.251
Benefit less 10%	14.3%	12.755	21%	1.121
1-Year delay in benefit	13.8%	11.243		1.255
Capital cost and O & M cost plus 15%	13.7%	10.516	24%	1.098

EIRR=economic internal rate of return, ENPV=economic net present value.

Source: Consultant's estimates.

### **G. Distribution Analysis**

32. Distributional analysis leads into calculation of the poverty impact ratio (PIR) i.e., the proportion of project net benefits accruing to the poor. The analysis shows that the PIR is found to be 12% for Agdash Town. Considering the present poverty level of 5%, this program in Agdash Towns contributes better to the poor (Table 12).

### **H. Conclusion**

33. The outcome of the economic analysis indicates that the investment proposals in Agdash subproject is found to be economically viable with the calculated EIRR value exceeding the economic opportunity cost of capital and with the ENPV greater than zero. In the sensitivity analysis results also, the EIRR is more than the EOCC in many cases and this underlines economic viability of the project. Agdash subproject investment is found to be pro-poor with more benefits to the below poverty line population. PIR for the subproject is found to be much higher to the poverty level.

34. For this proposed investment, the calculated EIRR value is considered minimum estimates of economic return, as there are a number of economic benefits that are not quantified in the above analysis. They include but are not necessarily limited to improved employment opportunities for the urban poor and improvement to environmental quality.

**Table 11: Cost-Benefit Analysis**

Year	Benefit	Delayed Benefit	Economic Cost			Net Benefits						
			Capital	O&M	Total	Base	Capital +	O&M +	Capital +	Benefit	1-yr Delay	Cap & O&M +
						case	15%	20%	19.0%	-10%	in Benefit	15%
2016	9.432		39.234	0.064	39.298	(29.866)	(35.751)	(29.879)	(37.321)	(30.809)	(39.298)	(35.761)
2017	12.992	9.432	48.620	0.150	48.770	(35.778)	(43.071)	(35.808)	(45.016)	(37.078)	(39.338)	(43.094)
2018	14.194	12.992	21.870	0.140	22.010	(7.817)	(11.097)	(7.845)	(11.972)	(9.236)	(9.019)	(11.118)
2019	15.441	14.194	0.000	0.692	0.692	14.749	14.749	14.610	14.749	13.204	13.501	14.645
2020	15.531	15.441	0.000	0.697	0.697	14.834	14.834	14.695	14.834	13.281	14.744	14.730
2021	15.622	15.531	0.000	0.699	0.699	14.923	14.923	14.783	14.923	13.361	14.832	14.818
2022	15.714	15.622	0.000	0.706	0.706	15.007	15.007	14.866	15.007	13.436	14.916	14.902
2023	15.806	15.714	0.000	0.708	0.708	15.098	15.098	14.956	15.098	13.517	15.005	14.992
2024	15.900	15.806	0.000	0.714	0.714	15.185	15.185	15.042	15.185	13.595	15.092	15.078
2025	15.994	15.900	-	0.717	0.717	15.277	15.277	15.133	15.277	13.677	15.183	15.169
2026	16.089	15.994	-	0.724	0.724	15.364	15.364	15.219	15.364	13.755	15.269	15.256
2027	16.184	16.089	-	0.726	0.726	15.458	15.458	15.313	15.458	13.840	15.362	15.349
2028	16.281	16.184	-	0.736	0.736	15.546	15.546	15.399	15.546	13.918	15.449	15.435
2029	16.379	16.281	-	0.738	0.738	15.641	15.641	15.493	15.641	14.003	15.543	15.530
2030	16.477	16.379	-	0.740	0.740	15.737	15.737	15.589	15.737	14.089	15.639	15.626
2031	16.577	16.477	-	0.743	0.743	15.834	15.834	15.685	15.834	14.176	15.734	15.722
2032	16.677	16.577	-	0.746	0.746	15.931	15.931	15.782	15.931	14.264	15.831	15.820
2033	16.778	16.677	2.973	0.748	3.721	13.057	12.611	12.908	12.492	11.379	12.956	12.499
2034	16.880	16.778	-	0.750	0.750	16.130	16.130	15.980	16.130	14.442	16.028	16.017
2035	16.983	16.880	-	0.753	0.753	16.230	16.230	16.079	16.230	14.532	16.127	16.117
2036	17.087	16.983	-	0.755	0.755	16.331	16.331	16.180	16.331	14.623	16.228	16.218
2037	17.192	17.087	-	0.758	0.758	16.433	16.433	16.282	16.433	14.714	16.329	16.320
2038	17.297	17.192	-	0.761	0.761	16.537	16.537	16.384	16.537	14.807	16.431	16.422
2039	17.404	17.297	-	0.763	0.763	16.641	16.641	16.488	16.641	14.900	16.534	16.526
2040	17.511	17.404	-	0.766	0.766	16.745	16.745	16.592	16.745	14.994	16.638	16.631
2041	17.620	17.511	-	0.769	0.769	16.851	16.851	16.697	16.851	15.089	16.743	16.736
2042	17.704	17.620	-	0.771	0.771	16.933	16.933	16.779	16.933	15.163	16.849	16.818
2043	17.790	17.704	-	0.774	0.774	17.016	17.016	16.861	17.016	15.237	16.930	16.900
ENPV	118.660	117.915	89.743	4.295	94.038	24.621	11.160	23.762	7.570	12.755	11.243	10.516
			Discount Rate @ 12%	EIRR	16.50%	13.76%	16.35%	13.15%	14.32%	13.77%	13.66%	
				ENPV	24.621	11.160	23.762	7.570	12.755	11.243	10.516	
			Sensitivity Indicator	EIRR		4.1	0.2	3.9	4.9	96.6	4.2	
				ENPV		3.6	0.2	3.6	4.8	86.6	3.8	
			Switching Value	EIRR		24.61%	599.85%	25.53%	20.60%	1.04%	23.75%	
				ENPV		27.44%	573.27%	27.44%	20.75%	1.16%	26.18%	

EIRR = economic internal rate of return, ENPV =economic net present value, O&M = operation and maintenance.  
 Souce: Azersu estimates.

**Table 12: Distribution of Project Benefits and Calculation of Poverty Impact Ratio  
(Present Value at 12% Discount Rate<sup>a/</sup>, \$ Million)**

Details	Financial Effects	Conversion Factor	Economic Effects	Economic minus Financial	Distribution of Project Effects			
					Households	Unskilled labour	ULB	Government
<b>Benefits</b>								
Non-monetised Outputs <sup>b/</sup>			52	52	49		4	
Resource Cost Savings <sup>c/</sup>	66	0.85 <sup>e/</sup>	56	(10)				(10)
User Charge Revenues <sup>d/</sup>	24	1.00	24	-				
Total Benefits	90		132	42				
<b>Costs</b>								
Capital Cost - Unskilled labour	(20)	0.85 <sup>f/</sup>	(17)	3		3		
Capital Cost - Land	-	1.00	-	-				
Capital Cost - Foreign Component	(46)	1.02 <sup>g/</sup>	(46)	(1)				(1)
Capital Cost - Other costs	(44)	1.000	(44)	-				-
O&M - Unskilled labour	(0.1)	0.85 <sup>f/</sup>	(0)	0		0		
O&M - Other costs	(0.6)	1.000	(1)	-				-
Total Costs	(110)		(108)	2				2
<b>Net Benefits <sup>h/</sup></b>	<b>(20)</b>		<b>24</b>	<b>44</b>				
<b>Gains &amp; Losses <sup>i/</sup></b>					49	3	4	(9)
					<b>Calculation of Poverty Impact Ratio</b>			
					5%	100%	5%	5%
					2	3	0	(0.44)
								5
								44
								12%
<b>Notes:</b>								
a/ 12% as EOCC								
b/ Collection time savings from Water component								
c/ From water supply component + SW avoided cost + health care								
d/ from water supply charges.								
e/ Adjusts for taxes for local costs.								
f/ Adjusts for taxes at local costs and shadow wage rate.								
g/ Adjusts for shadow exchange rate (1.02).								
h/ Calculated as Total Benefits - Total Costs.								
i) Calculated as (Economic - Financial) + Net Financial Benefit								
j) For Households and ULB sections, urban BPL and for national level BPL relevant to Azerbaijan is considered.								

BPL = below poverty line, EOCC = economic opportunity cost of capital, O&M = operation and maintenance.  
Source: Azersu estimates.

## BEYLAGAN FINANCIAL ANALYSIS

### A. Introduction

1. The financial analysis was conducted on the projected costs and revenues over 28 years (between 2016 and 2043) covering the entire water supply (WS), water supply and sanitation (WSS) network, and wastewater treatment plant (WWTP) constructed under in all tranches including Project 4 of the Investment Program. The main financial viability parameters analyzed were (i) the financial internal rate of return (FIRR), which should be greater than the weighted average cost of capital (WACC) with the financial net present value as proxy; (ii) operating ratio, which should be less than or equal to one when the WS and WSS system becomes fully operational; and (iii) tariff affordability, normally considered affordable if the resulting monthly charge is 5% or less than the average monthly household (HH) income. The analysis looked closely at the operating ratio as a main indicator of sustainability.

### B. Basis for Financial Projections

2. **Revenue.** Revenues were based on domestic and non-domestic demand for water and sewerage services. Tariffs are programmed to increase every 2 years (from 2018 onwards after the system is commissioned and fully operational until 2042), to cover (i) operation and maintenance (O&M) costs; (ii) O&M costs plus depreciation; and (iii) O&M costs plus total debt service. Tariff increments are benchmarked on domestic customers' affordability and targeted cost recovery level. The demand forecast assumes that all water from existing alternative sources will be replaced with subproject water supply.

3. **Operations & Maintenance.** It is assumed that the current O&M costs will remain at their existing level until 2018, when the new water and sewerage system will start operation. The current O&M costs are adjusted for inflation from 2016.

4. Keeping the staff requirement norm of 10 staff per 1000 HH connections, the required staff strength for water and wastewater operation is estimated. The annual average cost of staff is estimated to \$8,899 including taxes and social security premiums for 2013. This figure is escalated annually according to the real gross domestic product (GDP) growth rate. The energy expenditure of the utility is calculated to be \$0.071 and expenditures for chemicals \$0.014 for each cubic meter (m<sup>3</sup>) of water produced after 2013. Those figures are also adjusted for inflation. The maintenance of civil works is taken as 1% of asset value while the repair and maintenance of electrical and mechanical equipment is calculated as 1% of the value of assets. There will be a dramatic increase in operation and maintenance expenditures starting from 2016. This is mostly due to the recruitment of additional staff. Also, the repair and maintenance of new assets will constitute a major portion of the O&M expenditures.

5. **Current Tariffs.** Current water and sewerage tariffs were increased and made effective from May 2016,<sup>1</sup> for both domestic and non-domestic customers whereas standard (norm)

1

#### Water Tariff Revision in Azerbaijan from May 2016

Details	2016 AZN/m3	2016 USD/m3
<b>Water</b>		
Domestic	0.300	0.199
Non-Domestic AZN/m4	1.000	0.663
<b>Sewerage</b>		
Domestic AZN/m3	0.150	0.099
Non-Domestic AZN/m4	1.000	0.663

Source: <http://www.azernews.az/business/96585.html>; @ 1.5093 AZN/USD

domestic water consumption was reduced from 6m<sup>3</sup>/capita/month to 5m<sup>3</sup>/capita/month for consumers having no water meters (unmeasured consumption). As of the beginning of 2018, all customers are assumed to be billed based on actual water meters since all customers will have water meters upon completion of the subproject. For financial analysis, the increased water and sewer tariff are considered from 2016. For houses without installed meters, the consumption is fixed as 5m<sup>3</sup>/person/month. The HH consume 95% of the water in the city while income earned from households constitutes 76% of the revenues. This is due to the high tariff applied to commercial customers.

6. Detailed breakdown of tariff increase to 2016 includes:
- domestic water supply: from \$0.151/m<sup>3</sup> to \$0.199/m<sup>3</sup> (32% increase);
  - domestic sanitation charge: from \$0.032/m<sup>3</sup> to \$0.099/m<sup>3</sup>. (211% increase);
  - non-domestic water supply: from \$0.663/m<sup>3</sup> to \$0.663/m<sup>3</sup> (0% increase); and
  - non-domestic sanitation: from \$0.216/m<sup>3</sup> to \$0.663/m<sup>3</sup> (207% increase).

### C. Financial Projection

7. **Tariff.** In the financial projections, where revenues and costs are given in nominal terms, the tariffs are projected to increase biennially between 2018 and 2028 to cover O&M cost and total debt service. The same biennial tariff increase is applied to both water and wastewater tariffs of domestic and non-domestic customers (25% biennial from 2018 to 2028 for water supply; and 50% in 2018 and 2020; 25% every 2 years from 2022 to 2028 for sewerage).

8. **Affordability Analysis.** The future tariff revenue needs to be sufficient for the Belegon Water and Sewerage Administration to operate on a sustainable basis. At the same time the tariffs should be affordable to the users of water related services. An affordability analysis was undertaken to compare the level of HH water expenditure with the average household income presents the affordability levels for the subproject for years 2016, 2020, and 2025. Average water and wastewater affordability ratio (bill/monthly HH income) is calculated to be 0.06% in 2016, 0.25% in 2020 and 0.32% in 2025 which is well below the internationally accepted threshold limit of 5%, which implies that the proposed domestic tariffs are easily affordable by population.

9. In Beylagan, no special study has been conducted to measure people's willingness to pay for piped water. However, the price people pay for alternative sources can be a good indicator of willingness to pay. Under current circumstances, only 32% of the population in Beylagan can be served by piped water, many people buy water from private vendors that bring water to their door by trucks. The price of this service is AZN5-6/m<sup>3</sup>. This indicates that people of Beylagan are willing to pay up to AZN5/m<sup>3</sup> (\$6.3/m<sup>3</sup>) for drinking water. This analysis discussed above clearly underlines that the adopted tariff rates along with their revision provisions are within the affordable limit.

**Table 1: Tariff Affordability**

Particulars	2016	2020	2025
Persons per HH	4.500	4.500	4.500
Consumption, lpcd (1)	60.000	120.000	120.000
Water tariff rate \$/m <sup>3</sup>	0.199	0.447	0.699
Sanitation tariff rate \$/m <sup>3</sup>	0.099	0.224	0.349
Ave. consumption/month-m <sup>3</sup> /HH	8.1	16.2	16.2
Ave. HH income/month-\$ <sup>b</sup>	3743	4379	5328
Willingness to pay-\$/month/HH <sup>a</sup>		63.600	63.600
Ave. HH water bill/month-\$	1.61	7.25	11.32
Ave. HH water + sanitation bill/month-\$	2.42	10.87	16.98
% of income spent for WS	0.04%	0.17%	0.21%

Particulars	2016	2020	2025
% of income spent for WS + WSS	0.06%	0.25%	0.32%

Ave. = average, HH = household, lpcd = liters per capita per day, m<sup>3</sup> = cubic meter, WS = water supply.

(1) Standard (norm) domestic water consumption for unmetered connections is reduced from 6 m<sup>3</sup>/capita\*month) to 5 m<sup>3</sup>/capita\*month as of February 2011 by the decision of the Tariff Commission.

<sup>a</sup> Based on focus group discussions.

Source: ADB and Azersu estimates.

10. **Full Cost Recovery.** While a full-cost recovery tariff structure would be ideal, reality shows that beginning from 2016 when the repayment of interest of the loan starts, the full-cost covering tariff rate will be far above the affordability threshold for Agdash and Beylagan. Even, with the increased tariff, the full-cost covering tariff is not feasible during the analysis period. In all years, the tariff to cover O&M costs only is affordable. However, with the increase of GDP and the HH income, with the assumption of the tariff rate is set to cover a nominal 2% of HH income, then full cost recovery may be feasible during the analysis period.

11. The period of analysis to determine the viability gap funding (VGF) is different for each scenario from 2019 up to 2032 depending on the year in which FIRR gets equal to WACC (0.67%) with VGF contributions from the government. Analysis indicates that based on assumed tariffs, the annual VGF from government is estimated to \$8.16 million during the period totaling \$114.24 million. However, the worst case scenario of project cost increase by 6.5% the Baylagan subproject needs a VGF of \$8.9 million per year from 2019 to 2032 (total of \$124.6 million) to attain an FIRR being equal to WACC.

12. From the analysis, tariff increased in 2016 and subsequently proposed for the subproject is within customer affordability but will not generate enough revenues to cover total debt service. A VGF was therefore considered during and after the project implementation between 2019 and 2032 to cover total debt service. Politically, exponential increases are unacceptable, and it is proposed that a VGF will provide the buffer to meet required operating ratios before financial reforms and progressive tariff increases reduce dependence on subsidies.

13. Analysis result indicates that based on assumed tariffs, the average annual revenue between 2019 and 2032 is about \$2.416 million, O&M is about \$0.024 million, and O&M plus total debt service payment is about \$8.426 million for the same period resulting in negative cash flow. This will further aggravate in the negative sensitivity scenarios. To tide over this issue, VGF from government is proposed during this period, as further increase in tariff (in addition to the tariff increase suggested during this period) will be politically objected. The worst case scenario of the project cost increase by 6.5% the Baylagan subproject needs a VGF of \$8.9 million per year from 2019 to 2032 (total of \$124.6 million) to attain an FIRR being equal to WACC.

14. **Weighted Average Cost of Capital.** The WACC was calculated in real terms and was used as the hurdle rate for the FIRR to measure subproject viability. Funding sources are the Ordinary Capital Resources (OCR) loan and government contribution. Average inflation is estimated at 2.5% per annum for foreign cost and at 5.65% for local costs. The rates are computed on after-tax basis, resulting in the WACC in real terms estimated at 0.67% for the OCR loan and presented in Table 2.

**Table 2: Weighted Average Cost of Capital**  
\$ million

Particulars	Capital	% Total	Cost of Capital After Tax	Weighted Capital	Inflation rate	WACC Real
ADB	147.804	88.92%	2.25%	3.332	2.50%	
Government	18.411	11.08%	12.00%	2.209	5.65%	0.67%
Total Capital Investment	166.215	100.00%	<b>3.33%</b>	5.541	2.85%	<b>0.67%</b>

ADB = Asian Development Bank, WACC = weighted average cost of capital.

Source: Azersu and ADB estimates.

15. **Sensitivity Analysis.** Table 3 provides the results of sensitivity tests and indicates that the Beylagan subproject is viable in the base case. Under adverse economic conditions as shown below, the project is not found viable as the FIRR is becoming less to WACC in many cases. The sensitivity analysis assumes that the VGF (US\$ 8.16 million annually) will be provided by the Government and this may need to enhance further to face the adverse conditions, if required.

**Table 3: Financial Internal Rate of Return – with VGF**

<b>Particulars</b>	<b>FIRR</b> %	<b>FNPV</b> (\$ million)	<b>* Switching</b> <b>Value %</b>
Base case	0.67%	0.024	
Capital cost plus 5%	0.23%	(7.373)	0.02%
O&M cost plus 10%	0.59%	(1.233)	0.19%
Revenue less 5%	0.50%	(2.673)	0.04%
1-Year delay in benefit	0.00%	(10.046)	0.01%
Capital and O & M cost plus 5%	0.19%	(8.002)	0.02%

FIRR = financial internal rate of return; FNPV = financial net present value.

\* Switching value = change in parameter that will make the FIRR equal to the weighted average cost of capital.

Source: Consultant's estimates.

16. Table 4 provides the results of sensitivity tests and indicates that the Beylagan subproject is not viable in the base case and under adverse economic conditions as shown below. The sensitivity analysis assumes that there is no VGF will be provided by the government.

**Table 4: Financial Internal Rate of Return – without VGF**

<b>Particulars</b>	<b>FIRR</b>	<b>FNPV</b> (\$ million)	<b>* Switching</b> <b>Value</b>
Base case	-6.25%	(106.564)	
Capital cost plus 5%	-6.49%	(113.961)	143.49%
O&M cost plus 10%	-6.38%	(107.821)	558.57%
Revenue less 5%	-6.57%	(109.261)	108.92%
1-Year delay in benefit	-6.76%	(108.688)	72.79%
Capital and O & M cost plus 5%	-6.55%	(114.590)	114.52%

FIRR = financial internal rate of return; FNPV = financial net present value.

\* Switching value = change in parameter that will make the FIRR equal to the weighted average cost of capital (0.67).

Source: Consultant's estimates.

17. **Conclusion.** The subproject is financially viable when (i) tariff increases are implemented every 2 years starting in 2018 until 2028, and (ii) the VGF is provided by the government until 2032. Income affordability is a major factor in rationalizing tariffs, thus the monthly HH income needs to be reviewed periodically. The sensitivity analysis indicates that the subproject FIRR for Beylagan is more than the WACC under the base case and less to FIRR in the remaining adverse sensitivity scenarios. This implies the need for adequate risk mitigation measures during the implementation and operation period.

18. In the scenario of VGF not provided by the government, the subproject will not become financially viable. However, the tariff revenue ensures 100% O&M recovery and partial capital from the start year. Considering the limitation to tariff increase on users affordability and the likely political objections, VGF from government may require to tide over the debt service requirements during the initial period.

**Table 5: Financial Internal Rate of Return – Without VGF Scenario  
(\$ million)**

BEYLAGAN (PACKAGE 1+2 + 4 WWTP)					WITHOUT VGF SCENARIO										
3- FIRR (Water + Wastewater)															
\$ million															
	Year	Revenue	Viability Gap Funding	Delayed Revenue	Financial Cost			Net Benefits							
					Capital Cost	O&M Cost	Total Cost	Base case	Capital + 5%	O&M + 10%	Capital + 6.5%	Revenue -5%	1-yr Delay in Benefit	Cap & O&M + 5%	
1	h	2016	0.094	-	-	115.604	0.340	115.944	(115.850)	(121.630)	(115.884)	(123.364)	(115.855)	0	(121.647)
2	i	2017	0.413	-	0.094	12.164	0.461	12.626	(12.213)	(12.821)	(12.259)	(13.004)	(12.234)	-115.94	(12.844)
3	j	2018	0.659	-	0.413	18.247	0.466	18.712	(18.053)	(18.966)	(18.100)	(19.239)	(18.086)	-12.53	(18.989)
4	k	2019	0.696	-	0.659	-	0.467	0.467	0.229	0.229	0.182	0.229	0.194	-18.30	0.206
5	l	2020	1.012	-	0.696	-	0.472	0.472	0.540	0.540	0.492	0.540	0.489	0.22	0.516
6	m	2021	1.062	-	1.012	-	0.474	0.474	0.588	0.588	0.541	0.588	0.535	0.54	0.564
7	n	2022	1.299	-	1.062	-	0.477	0.477	0.822	0.822	0.774	0.822	0.757	0.58	0.798
8	o	2023	1.336	-	1.299	-	0.480	0.480	0.856	0.856	0.808	0.856	0.790	0.82	0.832
9	p	2024	1.651	-	1.336	-	0.484	0.484	1.167	1.167	1.119	1.167	1.085	0.85	1.143
10	q	2025	1.783	-	1.651	-	0.487	0.487	1.297	1.297	1.248	1.297	1.208	1.16	1.272
11	r	2026	2.120	-	1.783	-	0.491	0.491	1.629	1.629	1.580	1.629	1.523	1.29	1.605
12	s	2027	2.159	-	2.120	-	0.494	0.494	1.665	1.665	1.616	1.665	1.557	1.63	1.641
13	t	2028	2.695	-	2.159	3.498	0.499	3.997	(1.302)	(1.477)	(1.352)	(1.530)	(1.437)	-1.84	(1.502)
14	u	2029	2.744	-	2.695	-	0.501	0.501	2.243	2.243	2.193	2.243	2.106	2.19	2.218
15	v	2030	2.767	-	2.744	-	0.504	0.504	2.263	2.263	2.213	2.263	2.125	2.24	2.238
16	w	2031	2.790	-	2.767	-	0.506	0.506	2.284	2.284	2.234	2.284	2.145	2.26	2.259
17	x	2032	2.813	-	2.790	-	0.509	0.509	2.305	2.305	2.254	2.305	2.164	2.28	2.279
18	y	2033	2.837	-	2.813	-	0.511	0.511	2.326	2.326	2.275	2.326	2.184	2.30	2.301
19	z	2034	2.861	-	2.837	-	0.514	0.514	2.347	2.347	2.295	2.347	2.204	2.32	2.321
20	aa	2035	2.884	-	2.861	-	0.516	0.516	2.368	2.368	2.317	2.368	2.224	2.34	2.343
21	ab	2036	2.908	-	2.884	-	0.519	0.519	2.389	2.389	2.338	2.389	2.244	2.37	2.363
22	ac	2037	2.933	-	2.908	-	0.521	0.521	2.412	2.412	2.360	2.412	2.265	2.39	2.386
23	ad	2038	2.957	-	2.933	-	0.524	0.524	2.433	2.433	2.381	2.433	2.285	2.41	2.407
24	ae	2039	2.982	-	2.957	-	0.526	0.526	2.456	2.456	2.403	2.456	2.306	2.43	2.429
25	af	2040	3.007	-	2.982	-	0.529	0.529	2.477	2.477	2.424	2.477	2.327	2.45	2.451
26	ag	2041	3.032	-	3.007	-	0.531	0.531	2.500	2.500	2.447	2.500	2.349	2.48	2.474
27	ad	2042	3.057	-	3.032	-	0.529	0.529	2.528	2.528	2.475	2.528	2.375	2.50	2.501
28	ae	2043	3.083	-	3.057	-	0.531	0.531	2.551	2.551	2.498	2.551	2.397	2.53	2.524
	NPV	53.944	-	51.044	147.939	12.569	160.508	(106.564)	(113.961)	(107.821)	(116.180)	(109.261)	(108.688)	(114.590)	
					Discount Rate @ WACC	FIRR	-6.25%	-6.49%	-6.38%	-6.56%	-6.57%	-6.76%	-6.55%		
						FNPV	(\$106.564)	(\$113.961)	(\$107.821)	(\$116.180)	(\$109.261)	(\$108.688)	(\$114.590)		
					Sensitivity Indicator	FIRR		0.70	0.18	0.69	0.92	1.37	0.87		
						FNPV		1.39	0.12	1.39	0.51	0.37	1.51		
					Switching Value	FIRR		143.49%	558.57%	144.65%	108.92%	72.79%	114.52%		
						FNPV		72.03%	847.82%	72.03%	197.55%	269.72%	66.39%		

FIRR = financial internal rate of return, FNPV = financial net present value, NPV = net present value, O&M = operation and maintenance, VGF = viability gap funding.

Source: Azersu estimates.

**Table 6: Financial Internal Rate of Return – With VGF Scenario  
(\$ million)**

		Year	Revenue	Viability Gap Funding	Delayed Revenue	Financial Cost			Net Benefits						
						Capital Cost	O&M Cost	Total Cost	Base case	Capital + 5%	O&M + 10%	Capital + 6.5%	Revenue -5%	1-yr Delay in Benefit	Cap & O&M + 5%
1	h	2016	0.094	-	-	115.604	0.340	115.944	(115.850)	(121.630)	(115.884)	(123.364)	(115.855)	0	(121.647)
2	i	2017	0.413	-	0.094	12.164	0.461	12.626	(12.213)	(12.821)	(12.259)	(13.004)	(12.234)	-115.94	(12.844)
3	j	2018	0.659	-	0.413	18.247	0.466	18.712	(18.053)	(18.966)	(18.100)	(19.239)	(18.086)	-12.53	(18.989)
4	k	2019	0.696	8.160	0.659	-	0.467	0.467	8.389	8.389	8.342	8.389	8.354	-18.30	8.366
5	l	2020	1.012	8.160	0.696	-	0.472	0.472	8.700	8.700	8.652	8.700	8.649	8.38	8.676
6	m	2021	1.062	8.160	1.012	-	0.474	0.474	8.748	8.748	8.701	8.748	8.695	8.70	8.724
7	n	2022	1.299	8.160	1.062	-	0.477	0.477	8.982	8.982	8.934	8.982	8.917	8.74	8.958
8	o	2023	1.336	8.160	1.299	-	0.480	0.480	9.016	9.016	8.968	9.016	8.950	8.98	8.992
9	p	2024	1.651	8.160	1.336	-	0.484	0.484	9.327	9.327	9.279	9.327	9.245	9.01	9.303
10	q	2025	1.783	8.160	1.651	-	0.487	0.487	9.457	9.457	9.408	9.457	9.368	9.32	9.432
11	r	2026	2.120	8.160	1.783	-	0.491	0.491	9.789	9.789	9.740	9.789	9.683	9.45	9.765
12	s	2027	2.159	8.160	2.120	-	0.494	0.494	9.825	9.825	9.776	9.825	9.717	9.79	9.801
13	t	2028	2.695	8.160	2.159	3.498	0.499	3.997	6.858	6.683	6.808	6.630	6.723	6.32	6.658
14	u	2029	2.744	8.160	2.695	-	0.501	0.501	10.403	10.403	10.353	10.403	10.266	10.35	10.378
15	v	2030	2.767	8.160	2.744	-	0.504	0.504	10.423	10.423	10.373	10.423	10.285	10.40	10.398
16	w	2031	2.790	8.160	2.767	-	0.506	0.506	10.444	10.444	10.394	10.444	10.305	10.42	10.419
17	x	2032	2.813	8.160	2.790	-	0.509	0.509	10.465	10.465	10.414	10.465	10.324	10.44	10.439
18	y	2033	2.837	-	2.813	-	0.511	0.511	2.326	2.326	2.275	2.326	2.184	2.30	2.301
19	z	2034	2.861	-	2.837	-	0.514	0.514	2.347	2.347	2.295	2.347	2.204	2.32	2.321
20	aa	2035	2.884	-	2.861	-	0.516	0.516	2.368	2.368	2.317	2.368	2.224	2.34	2.343
21	ab	2036	2.908	-	2.884	-	0.519	0.519	2.389	2.389	2.338	2.389	2.244	2.37	2.363
22	ac	2037	2.933	-	2.908	-	0.521	0.521	2.412	2.412	2.360	2.412	2.265	2.39	2.386
23	ad	2038	2.957	-	2.933	-	0.524	0.524	2.433	2.433	2.381	2.433	2.285	2.41	2.407
24	ae	2039	2.982	-	2.957	-	0.526	0.526	2.456	2.456	2.403	2.456	2.306	2.43	2.429
25	af	2040	3.007	-	2.982	-	0.529	0.529	2.477	2.477	2.424	2.477	2.327	2.45	2.451
26	ag	2041	3.032	-	3.007	-	0.531	0.531	2.500	2.500	2.447	2.500	2.349	2.48	2.474
27	ad	2042	3.057	-	3.032	-	0.529	0.529	2.528	2.528	2.475	2.528	2.375	2.50	2.501
28	ae	2043	3.083	-	3.057	-	0.531	0.531	2.551	2.551	2.498	2.551	2.397	2.53	2.524
		NPV	53.944	106.588	51.044	147.939	12.569	160.508	0.024	(7.373)	(1.233)	(9.592)	(2.673)	(10.046)	(8.002)
							Discount Rate @ WACC	FIRR	0.67%	0.23%	0.59%	0.10%	0.50%	0.00%	0.19%
								FNPV	\$0.024	(\$7.373)	(\$1.233)	(\$9.592)	(\$2.673)	(\$10.046)	(\$8.002)
							Sensitivity Indicator	FIRR	6,004.54	529.45	5,947.08	2,294.69	8,394.44	6,528.59	
								FNPV	6,205.36	527.22	6,205.36	2,262.70	7,857.91	6,732.58	
							Switching Value	FIRR	0.02%	0.19%	0.02%	0.04%	0.01%	0.02%	
								FNPV	0.02%	0.19%	0.02%	0.04%	0.01%	0.01%	

FIRR = financial internal rate of return, FNPV = financial net present value, NPV = net present value, O&M = operation and maintenance, VGF = viability gap funding.

Source: Azersu estimates.

## **BEYLAGAN ECONOMIC ANALYSIS**

### **A. Introduction and Methodology**

19. The economic analysis was undertaken according to ADB Guidelines on the Economic Analysis of Projects.<sup>2</sup> For the overall Investment Program, the analysis describes the economic rationale and the rationale for public intervention. The analysis assumes that in the “future without project” scenario, the existing systems will continue to deteriorate and level of services will further reduce from 2016 levels. The economic analysis also evaluates the cost-effectiveness of subproject. The subproject analysis compares the economic internal rate of return (EIRR) with the economic opportunity cost of capital (EOCC), assumed at 12%, as applied in infrastructure project studies in Azerbaijan. Sensitivity and risk analyses are undertaken to assess the robustness of the subprojects under adverse economic conditions. The analysis uses shadow pricing and standard conversion factors to convert the financial cost and benefits into economic terms. Specifically, for converting the financial cost into economic cost, the shadow exchange rate factor was used for imported goods, the shadow wage rate factor for unskilled labor, and the standard conversion factor for non-traded goods and skilled labor were applied. The analysis is undertaken in constant 2016 prices. All the project cost disbursements before 2016 from 2012 were suitably updated to 2016 level.

### **B. Economic Rationale**

20. The Investment Program economic rationale was based on: fostering economic growth and improving urban WS and WSS services, and improving institutional effectiveness. The analysis describes the economic rationale and undertakes a viability analysis of the subproject. A sensitivity analysis was conducted to determine the effects of several adverse economic conditions on the overall subproject viability.

21. Demand analysis. Water demand estimates for future years are determined by multiplying the current unit of demand by the projected number of future users in the water system. It is assumed new users added to the system will consume water at the same rate as current users. Population growth for the period of 2016-2043 is assumed to be at 0.84%. The 2016-2043 period assumption is based on census data, historical data provided by Azersu as well as government forecasts for economic growth. For the sewage network, the users are equal to number of users for water assuming that each water connection will also have a sewerage connection. In terms of volume of water produced, this is based on consumption of water and takes into account of non-revenue water (NRW) that is produced but not billed. For the demand analysis of wastewater, the quantity of wastewater is assumed to equal to the total water consumed, considering allowance of about 10% for infiltration of water into sewerage system due to high ground water level in the region.

### **C. Economic Benefits**

22. The subproject will (i) improve urban WSS infrastructure; and (ii) improve service delivery through better resource management. For the Belegoan subproject, the component choice was based on the following decisions: replacing transmission mains and pumps, rehabilitating intake structures and reservoirs, and constructing water distribution and sewerage networks and a new WWTP. Institutional effectiveness under Project 3 was not considered as it is covered under Project 1 for the Investment Program.

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<sup>2</sup> ADB. 1998. *Guidelines for the Economic Analysis of Water Supply Projects*. Manila.

23. Improved service delivery in the water supply in terms of coverage and per capita water supply (from the existing 60 liters per capita day (lpcd) on an average to 120 lpcd on project completion), has two major components for the purpose of benefit quantification:

- Non-incremental Water Supply. This component includes the increase in water sold from the public system due to the project but resulting in no effect on total consumption for the following reason: the non-incremental water supply replaces water consumed from private vendors, shallow wells and tanks/streams. This benefit (\$1698/HH/year) is evaluated by using the resource cost savings approach i.e., savings in cost of replaced water which include the components like water collection time<sup>3</sup> and water storage cost (\$33.59/HH/year) and purchase of water from different sources<sup>4</sup>; and
- Incremental Water Supply. This component has a positive effect on the total consumption due to the proposed Project. This component of benefit is evaluated by using the demand price, or willingness to pay (WTP) for additional consumption. The incremental water supply benefit is evaluated by the average WTP price (\$2.89) and average incremental economic cost (\$14.93). WTP price arrived from WTP survey data available for the year 2009 is used for the analysis.

24. Sanitation benefits<sup>5</sup> are based on (i) savings from transitions from septic tank to sewerage network, (ii) avoidance of overflow, (iii) benefits derived from the WWTP, and (iv) savings in time cost for loss of work/leisure time due to water related diseases. The unit savings in economic terms for switching from septic tank to the sewerage network is estimated to be \$74.81/HH/year, taking into account the maintenance cost of septic tanks and cost of emptying the tank. This is multiplied by the number of HH connected to the sewerage network. The overflow<sup>6</sup> unit cost is estimated at \$25.85 per HH per year, multiplied by the number of HH connected to the sewerage network. The unit benefit assigned to WWTP is \$400.75 per HH per year, based on avoidance of environmental clean-up and remedial expenditures at the Belegoan town level, direct and indirect income and employment generation as well as increase in property values as a result of expenditures on the WWTP.

25. The proposed subproject will improve the water supply and sewerage infrastructure with better supply service from 2019 and 100% service coverage. Project beneficiaries will be 21,939 persons (2019). Present daily per capita water supply of 60 litres with only 35% coverage will be replaced with 120 litres treated pipe water with 100% coverage under the proposed subproject. Similarly the present sewer coverage of 9.8% will be improved to 100% for sewer improvement resulting in health and hygienic related benefits to the beneficiaries. Summary of the project benefits for water supply and sewerage used in the analysis, which are based on the assessment of the project beneficiaries in Belegoan in 2011 and subsequently escalated with price inflation to the base year 2016, are presented in Table 7.

<sup>3</sup> As suggested in ADB. 1998. *Guidelines for the Economic Analysis of Water Supply Projects*. Manila, 50% of the market wage rate for unskilled female labour is considered. In the present case \$ 969/HH in economic terms is estimated as annual cost of time saved in water collection. \$2.69 per hour as unskilled labour wage rate (2016), and an average 60 minutes of daily water collection time per household arrived from Baseline Survey (2011) were adopted.

<sup>4</sup> Annual savings in purchased water is estimated at \$112.49/HH by tankers and \$ 583.17/HH by bottled water.

<sup>5</sup> The estimates for the unit benefit for switching from septic tank are based on historical costs for septage cleanup, whereas the unit benefit for the WWTP is based on estimates provided by Azersu accounting for the aggregation of employment created through the construction and operation of the WWTP as well as the improvement of overall environment as a result of wastewater being treated.

<sup>6</sup> The amount reflects the avoided costs for cleaning the houses and clothes after an overflow taking into account necessary cleaning time, material costs and the expected number of occurrences per year.

**Table 7: Economic Data**

<b>Item</b>	<b>Value in USD</b>
Annual Household Income (Median)	17,219
<b>Coping strategy Per HH Per Year</b>	
Savings in Time Cost for Water Collection	969.37
Savings in lieu of Bottled Water Purchase Cost	583.17
Savings in lieu of Tanker Water Supply Purchase Cost	112.49
Savings in Annual Water Storage Facilities Cost	33.59
<b>Health (Sewerage + WWTP) Benefits Per HH Per Year</b>	
Savings in Cost Cleaning Septic Tank	74.81
Savings in time cost for cleaning house due to overflow	25.85
Savings in time cost for loss of work due to water related diseases	50.89
Savings in cost for loss of leisure due to water related diseases	52.78
savings in clean-up and remedial cost due to WWTP	400.75

HH = households, WWTP = wastewater treatment plant.

Source: Azersu estimates.

#### **D. Economic Cost Estimation**

26. In the case of Belegoan, a combined economic analysis was done for the water supply and sewerage system financed under Tranches 2 and 4. In brief, the subprojects entail (i) water supply transmission main; (ii) rehabilitation and construction of reservoirs; (iii) construction of a new WWTP; (iv) construction of water head works; and (v) construction of water supply and sewerage networks.

27. The economic capital investment and annual O&M costs were derived from the financial cost estimates using the following methodology: taxes and duties are excluded from the financial as well as price inflation, the subproject capital and O&M costs are distributed into traded and non-traded components and labor, unskilled labor is available in urban centers, which means the opportunity cost is lower than the wage rate, and the economic costs are given in real terms and phased over the project life of 28 years. In economic analysis, for converting the financial cost into economic cost, Shadow Exchange Rate Factor (SERF) for imported goods, Shadow Wage Rate Factor (SWRF) for unskilled labor and Standard Conversion Factor (SCF) for non-traded goods and skilled labor were applied as shown below:

#### **ECO TAXES & CONVERSION FACTORS**

CW - LC unskilled	18%
CW - LC other	18%
Equipment – FC	33%
Equipment – LC	18%
SERF traded	1.02
SWRF unskilled	0.80
Non-traded	1.00

Source: Azersu estimates.

#### **E. Cost Benefit Analysis**

28. The economic benefit–cost ratio was used in the analysis to assess whether the subproject benefits outweigh costs. The benefit–cost ratio for the Beylagan subproject is 1.08, thus making the subproject economically viable. See Table 8 for a detailed breakdown.

**Table 8: Summary Cost Benefit Analysis**

Particulars	Value (USD Million)
<b>1. Present value of benefits <sup>1/</sup></b>	
Non-incremental	69.657
Incremental	32.665
Health (Sewerage + WWTP) Benefits Per HH	17.442
<b>Total benefits</b>	<b>119.765</b>
<b>2. Present value of costs <sup>1/</sup></b>	
Capital investment and replacement	107.568
O&M costs	2.942
<b>Total costs</b>	<b>110.510</b>
<b>Benefit-cost ratio</b>	<b>1.08</b>

HH = households, O&M = operation and maintenance, WWTP = wastewater treatment plant.

<sup>1/</sup> Discounted at 12%, the economic opportunity cost of capital.

Source: Azersu estimates.

## F. Results of Economic Analysis

29. The EIRR and discounted net cash flows were determined by comparing benefit streams with cost streams. In base case, the EIRR is found to be 12.7% which is above the minimum required economic opportunity cost of capital (EOCC) of 12%. The economic net present value (ENPV) (\$9.255 million) discounted at 12% is worked out to be positive. Also the economic benefit-to-cost ratio is 1.08. These all together underlines that the Beylagan subproject becomes economically viable at the base case scenario.

30. Sensitivity analysis tests the robustness of the results (EIRR) of the base case scenarios by varying major parameters such as costs and benefits for the cases given below:

- a. Capital costs increased by 15%;
- b. O&M costs increased by 20%;
- c. Capital and O&M costs increased by 15%; and
- d. Benefits reduced by 10%.

31. The results of the sensitivity Analysis are shown in Tables 9 and 10. The switching value shown in this table is the increase/decrease in the parameter being tested which returns an EIRR equal to the opportunity cost of capital (12%).

**Table 9: Economic Analysis – Summary Results**

Particulars	EIRR	ENPV (\$ Million)	Switching Value %	Economic Benefit-to- Cost Ratio
Base case	13.3%	9.255		1.084
Capital cost plus 15%	10.6%	(12.259)	9%	0.907
O&M cost plus 20%	13.2%	8.667	315%	1.078
Benefit less 10%	10.8%	(8.710)	8%	0.909
1-Year delay in benefit	11.5%	(4.268)		0.962
Capital cost and O & M cost plus 15%	11.1%	(7.322)	9%	0.943

EIRR=economic internal rate of return, ENPV=economic net present value.

Source: Consultant's estimates.

## G. Distribution Analysis

32. Distributional analysis leads into calculation of the poverty impact ratio (PIR) i.e., the proportion of project net benefits accruing to the poor. The analysis shows that the PIR is found

to be 13% for Belegoan Town. Considering the present poverty level of 5%, this program in Belegoan Town contributes better to the poor (Table 11).

#### **H. Conclusion**

33. The outcome of the economic analysis indicates that the investment proposals in Beylagan subproject is found to be economically viable with the calculated EIRR value exceeding the economic opportunity cost of capital and with the ENPV greater than zero. In the sensitivity analysis results, the EIRR is marginally less than the EOCC and this underlines the need for adequate risk mitigation measures during implementation.

34. For this proposed investment, the calculated EIRR value is considered minimum estimates of economic return, as there are a number of economic benefits that are not quantified in the above analysis. They include but are not necessarily limited to improved employment opportunities for the urban poor, development of tourism benefits, improvement to environment quality.

Table 10: Cost-Benefit Analysis

BEYLAGAN (PACKAGE 1+2 + 4 WWTP)												
6- EIRR												
(Water + Wastewater)												
Year	Benefit	Delayed Benefit	Economic Cost			Net Benefits						
			Capital	O&M	Total	Base case	Capital + 20.0%	O&M + 20%	Capital + 21.0%	Benefit -15%	1-yr Delay in Benefit	Cap & O&M + 15%
2016	8.724	-	98.145	0.255	98.399	(89.675)	(109.304)	(89.726)	(110.286)	(90.984)	(98.399)	(104.435)
2017	12.804	8.724	10.327	0.364	10.691	2.113	0.047	2.040	(0.056)	0.192	(1.967)	0.509
2018	12.875	12.804	15.491	0.367	15.858	(2.983)	(6.081)	(3.056)	(6.236)	(4.914)	(3.054)	(5.361)
2019	15.897	12.875	0.000	0.369	0.369	15.529	15.529	15.455	15.529	13.144	12.507	15.473
2020	15.995	15.897	-	0.373	0.373	15.622	15.622	15.548	15.622	13.223	15.525	15.566
2021	16.093	15.995	-	0.374	0.374	15.718	15.718	15.644	15.718	13.305	15.620	15.662
2022	16.192	16.093	-	0.378	0.378	15.814	15.814	15.739	15.814	13.385	15.715	15.758
2023	16.291	16.192	-	0.380	0.380	15.912	15.912	15.836	15.912	13.468	15.812	15.855
2024	16.392	16.291	-	0.383	0.383	16.009	16.009	15.932	16.009	13.550	15.908	15.951
2025	16.494	16.392	-	0.385	0.385	16.108	16.108	16.031	16.108	13.634	16.007	16.050
2026	16.596	16.494	-	0.390	0.390	16.206	16.206	16.128	16.206	13.717	16.104	16.148
2027	16.699	16.596	-	0.392	0.392	16.307	16.307	16.229	16.307	13.802	16.204	16.249
2028	16.803	16.699	2.967	0.397	3.364	13.439	12.846	13.360	12.816	10.919	13.335	12.934
2029	16.908	16.803	-	0.399	0.399	16.509	16.509	16.429	16.509	13.973	16.404	16.449
2030	17.014	16.908	-	0.401	0.401	16.613	16.613	16.533	16.613	14.061	16.507	16.553
2031	17.120	17.014	-	0.403	0.403	16.717	16.717	16.637	16.717	14.149	16.611	16.657
2032	17.228	17.120	-	0.405	0.405	16.823	16.823	16.742	16.823	14.239	16.715	16.762
2033	17.337	17.228	-	0.407	0.407	16.930	16.930	16.848	16.930	14.329	16.821	16.868
2034	17.446	17.337	-	0.409	0.409	17.036	17.036	16.955	17.036	14.420	16.927	16.975
2035	17.556	17.446	-	0.411	0.411	17.145	17.145	17.063	17.145	14.511	17.035	17.083
2036	17.667	17.556	-	0.413	0.413	17.254	17.254	17.171	17.254	14.604	17.142	17.192
2037	17.780	17.667	-	0.415	0.415	17.364	17.364	17.281	17.364	14.697	17.252	17.302
2038	17.893	17.780	-	0.418	0.418	17.475	17.475	17.391	17.475	14.791	17.362	17.412
2039	18.006	17.893	-	0.420	0.420	17.587	17.587	17.503	17.587	14.886	17.473	17.524
2040	18.121	18.006	-	0.422	0.422	17.699	17.699	17.615	17.699	14.981	17.584	17.636
2041	18.238	18.121	-	0.424	0.424	17.813	17.813	17.729	17.813	15.078	17.697	17.750
2042	18.355	18.238	-	0.424	0.424	17.931	17.931	17.846	17.931	15.177	17.813	17.867
2043	18.472	18.355	-	0.424	0.424	18.048	18.048	17.963	18.048	15.277	17.931	17.985
ENPV	119.765	106.243	107.568	2.942	110.510	9.255	(12.259)	8.667	(13.334)	(8.710)	(4.268)	(7.322)
			Discount Rate @ 12%	EIRR	13.26%		10.59%	13.18%	10.48%	10.80%	11.48%	11.13%
				ENPV	9.255		(12.259)	8.667	(13.334)	(8.710)	(4.268)	(7.322)
			Sensitivity Indicator	EIRR		10.6	0.3	10.5	13.0	12.6	11.3	
				ENPV		11.6	0.3	11.6	12.9	12.9	11.9	
			Switching Value	EIRR		9.44%	314.86%	9.51%	7.68%	7.97%	8.85%	
				ENPV		8.60%	314.58%	8.60%	7.73%	7.73%	8.37%	

EIRR = economic internal rate of return, ENPV =economic net present value, O&M = operation and maintenance, WWTP = wastewater treatment plant.

Souce: Azersu estimates.

**Table 11. Distribution of Project Benefits and Calculation of Poverty Impact Ratio  
(Present Value at 12% Discount Rate <sup>a/</sup>, \$ Million)**

<b>BEYLAGAN (PACKAGE 1+2 + 4 WWTP)</b>								
<b>Table 11: Distribution of Project Benefits and Calculation of Poverty Impact Ratio ( Present Value at 12% Discount Rate <sup>a/</sup>, US\$.</b>								
Details	Financial Effects	Conversion Factor	Economic Effects	Economic minus Financial	Distribution of Project Effects			
					Households	Unskilled labour	ULB	Government
<b>Benefits</b>								
Non-monetised Outputs <sup>b/</sup>			52	52	49		4	
Resource Cost Savings <sup>c/</sup>	67	0.85 <sup>e/</sup>	57	(10)				(10)
User Charge Revenues <sup>d/</sup>	11	1.00	11	-				
Total Benefits	78		121	42				
<b>Costs</b>								
Capital Cost - Unskilled labour	(23)	0.85 <sup>f/</sup>	(20)	3		3		
Capital Cost - Land	-	1.00	-	-				
Capital Cost - Foreign Component	(51)	1.02 <sup>g/</sup>	(52)	(1)				(1)
Capital Cost - Other costs	(50)	1.000	(50)	-				-
O&M - Unskilled labour	(0.0)	0.85 <sup>f/</sup>	(0)	0		0		
O&M - Other costs	(0.2)	1.000	(0)	-				-
Total Costs	(124)		(122)	2				2
<b>Net Benefits <sup>h/</sup></b>	<b>(46)</b>		<b>(1)</b>	<b>45</b>				
<b>Gains &amp; Losses <sup>i/</sup></b>					49	4	4	(9)
					<b>Calculation of Poverty Impact Ratio</b>			
					5%	100%	5%	5%
					2	4	0	(0.43)
								6
								45
								13%
<b>Notes:</b>								
a/ 12% as EOCC								
b/ Collection time savings from Water component								
c/ From water supply component + SW avoided cost + health care								
d/ from water supply charges.								
e/ Adjusts for taxes for local costs.								
f/ Adjusts for taxes at local costs and shadow wage rate.								
g/ Adjusts for shadow exchange rate (1.02).								
h/ Calculated as Total Benefits - Total Costs.								
i) Calculated as (Economic - Financial ) + Net Financial Benefit								
j) For Households and ULB sections, urban BPL and for national level BPL relevant to Azerbaijan is considered.								

BPL = below poverty line, EOCC = economic opportunity cost of capital, O&M = operation and maintenance.  
Source: Azersu estimates.

## UPDATED SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country:	Azerbaijan	Project Title:	Water Supply and Sanitation Investment Program – Tranche 4
Lending/Financing Modality:	Multitranche Financing Facility	Department/ Division:	Central And West Asia Department Urban Development and Water Division

### I. POVERTY AND SOCIAL ANALYSIS AND STRATEGY

Poverty targeting: targeted intervention—MDG7

#### A. Links to the National Poverty Reduction and Inclusive Growth Strategy and Country Partnership Strategy

Project 4 will serve as supplementary financing to Project 2 of the Water Supply and Sanitation (WSS) Investment Program to complete the civil works in Agdash and Beylagan. The investments in water supply and wastewater infrastructure, along with institutional reforms and capacity development initiatives to improve service delivery, are consistent with the key strategic goals of Azerbaijan's state program on poverty reduction and sustainable development. The Project will uphold the state program's goals by improving public infrastructure, developing sustainable environmental management, and improving public administration and good governance. In accordance with the state program, the Project will promote participation and employment of women in decision-making roles ranging from local to executive levels and will promote employment and career opportunities for women in WSS sector. Urban infrastructure is a priority sector in the ADB Country Partnership Strategy (CPS) 2014-2018, which emphasizes support for a diversified, knowledge-based economy, which will stimulate new economic opportunities and exports in non-oil sectors, in turn helping to promote inclusive growth and reduce urban-rural disparities.

#### B. Results from the Poverty and Social Analysis during PPTA or Due Diligence

##### 1. Key poverty and social issues.

The Government is strongly committed to reduce poverty in the country. According to the State Statistical Committee, 5% of the population lived under the national poverty line in 2013. This constitutes a dramatic drop in poverty from 49.0% in 2001 to 29.3% in 2005, 10.9% in 2009, and 5.0% in 2013. While absolute poverty has decreased, relative poverty and perceived inequality are growing concerns. Azerbaijan's economic policies aim to achieve sustainable economic development, a diversified economy with a vibrant non-oil sector, global integration, and balanced development throughout the country. However, the economy has actually increased its dependence on oil and gas as a percentage of GDP throughout the past decade instead of becoming more balanced and diversified. Hydrocarbons account for 56% of GDP and 90% of exports. The next largest sectors have typically been construction and transport, storage, and communication. Agriculture constitutes 5.2% (2012) of GDP despite employing 38% of the labor force. The reliance on hydrocarbons places the country at risk of volatility and raises concerns about long term growth sustainability and stability, as evidenced by the recent slowdown in oil production.

**Water Supply.** About 95% of the population in Baku and 83% of those living in secondary cities and towns are connected to piped water supply. While coverage appears generally high in comparison to countries of a similar income level, the quality of infrastructure and services has deteriorated as a result of a lack of investment and maintenance. Water treatment facilities are very limited, so a substantial part of the population does not have access to safe water supply. Moreover, piped water supply is generally unreliable across the country. Because of insufficient water services, women in the provincial regions carry the burden of securing the family water supply, as well as the health and hygiene of the family. 90% of households in Agdash and 100% of households in Beylagan have access to a piped water supply system, largely attributable to the infrastructure finance under Project 2. The remainder of people obtains water from alternative sources such as private tankers, dug wells, and private borewells.

**Sanitation.** Most households use pit latrines and some use septic tanks, which often overflow. Households discharge sewage directly to the roadside channels that line the streets and flow through the towns. During periods of rain, sewage overflows into the streets and on public property. About 36% of the households in project 2 towns have access to a sewerage system but the sewage is drained into open drains on the street to sewage treatment plant sites and into fields. Based on a social assessment conducted for the project towns, most households (427) in Goychay, Agdash and Beylagan use lavatory washed with water, majority of them owning the lavatory but share it with other families. About 66% of the households are connected to septic tanks while the rest discharge waste into "public drainage", "absorption pit", "canals" and "yard/garden/road". Project 2 has established nearly 100% coverage for sewerage connections in both Agdash and Beylagan. Under Project 4, all households will have access to wastewater treatment services

##### 2. Beneficiaries.

By 2010 the average monthly household income grew in double digits per year and reached AZN240 (\$303). In September 2010, the minimum salary wage per month was determined as AZN85 (\$107). In 2010, unemployment rate for Azerbaijan was 5.6%, 60% of which are women. In project towns, the majority of men work in agriculture, while the women work in lower-paid public sectors including teaching, medicine, and nursing. Health care and education facilities have improved over the past 3-4 years. A willingness-to-pay analysis conducted for the project towns concluded that most people will be willing to pay 10% of their household income for improved WSS service. The potential primary beneficiaries of project 2 are the urban population in the four towns including 10,000 internally displaced persons, and children who go to schools.

##### 3. Impact channels.

**Health benefits.** Improved water quality and provision of public toilets and washing facilities will reduce waterborne disease and

contribute to savings in associated medical costs and loss of healthy working days, thereby increasing net income. Overall, time will be saved, and better health will improve the productive capacity of the whole population.

#### 4. Other social and poverty issues.

Project 4 will provide an opportunity to strengthen the role of women in the community, thereby raising their status in increasing their participation in decision making in a rather patriarchal society. It is expected that women will become empowered by being involved in providing feedback on quality of WSS services and at an institutional level by increasing their representation in decision-making positions within the executing agencies.

#### 5. Design features.

**Physical investment.** The quality of life will be enhanced by environmental improvement consequent to introducing proper sewerage and wastewater treatment in towns with decaying infrastructure and pit latrines. Construction for physical investments under the project will create temporary employment and require labor for system operation and maintenance in the long term.

**Non-physical investment.** Residents will be educated on their customer rights and the creation of a reliable grievance-hearing mechanism. Monitoring the efficiency of water supply and sanitation services for the poor will be based on customer groups' feedback, census information, disconnection rates, complaint statistics, and information collected by local nongovernment organizations (NGOs).

### II. PARTICIPATION AND EMPOWERING THE POOR

#### 1. Participatory approaches and project activities.

Consultations have been undertaken with stakeholders, including project towns, NGOs and community-based organizations, elected representatives, administrative departments, rayon (town) administrations, and representatives of various government ministries. Meetings, focus group discussions were undertaken with stakeholders.

2. The following forms of civil society organization participation are envisaged during project implementation, rated as high (H), medium (M), low (L), or not applicable (NA)

- Information gathering and sharing  Consultation  Collaboration  Partnership

#### 3. Participation plan.

- Yes.  No.

As continuation of Project 4, the Participation Plan will target dissemination of better hygiene and sanitation practices to the community. It will address empowerment of women through awareness building and building capacity to the service providers and decision makers in the project towns' schools and communities. The Participation Plan will include:

- Strengthening capacity of local government and non-government organizations (including municipalities, and parent teacher associations) to plan and facilitate water use and management, sanitation and hygiene education programs;
- Using social partnerships for water, sanitation and hygiene through support to local government and non-government bodies, mass media (print and broadcast) to develop innovative, evidence-based, and behavior change oriented programs to stimulate behavior change at school and community levels; and
- The Participation Plan will give particular emphasis to gender, including women's empowerment and participation in decision-making.

### III. GENDER AND DEVELOPMENT

Gender mainstreaming category: Effective gender mainstreaming

**A. Key issues.** Azerbaijan's society is still influenced by prevailing gender norms that a man's role is to work outside the home to support the family, while it is considered appropriate for a woman to tend to family obligations and manage the household. Because of insufficient urban and social services, women in the provincial regions carry the burden of taking care of the family water supply, as well as the health and hygiene of the family. It is noteworthy that women are not fully aware of their WSS customer rights, and the importance of high quality WSS services. In many schools the sanitation facilities are insufficient and are lacking separate toilets and washing facilities for girls, which may impact school attendance. In the Urban Water and Sanitation Sector, the participation of women needs to be increased. There is no career development plan for employees in Sukanals and JSCs in place and the data base of employees is just now planned to be computerized, which would allow sex-disaggregated analysis of human resource management. Also the share of women working in the municipal decision-making level is only 4%.

#### B. Key actions.

- Gender action plan  Other actions or measures  No action or measure

Project 4 will improve access to WSS through further construction of water supply and sewerage networks. The management capacity of Sukanals and JSCs will be enhanced and human resources management will be gender mainstreamed to give women and men equal employment opportunities.

Knowledge of gender specific customer behavior will be gained through survey and analysis that will inform a sex-disaggregated customer database. The role of women will be expanded through their engagement in complaints redress mechanisms, which will provide feedback on service quality. Based on the analysis, an Information, Education and Communication (IEC) campaign on WSS, customer rights, and water efficiency will be conducted.

### IV. ADDRESSING SOCIAL SAFEGUARD ISSUES

#### A. Involuntary Resettlement

Safeguard Category:  A  B  C  FI

<p>1. Key impacts. In Agdash, the project will affect 3 agricultural land parcels owned by 2 households. In Beylagan, the project will affect 45 households. Out of them 44 will lose part of agricultural land, whilst one farmer who are temporarily using state land will lose animal shelter and temporary dwelling made of mud and reed. None of these are significantly affected (i.e. physically displaced or losing 10% or more of income producing assets) across the four sub-projects.</p> <p>2. Strategy to address the impacts. A land acquisition and resettlement plan (LARP) has been produced for each of the sub-projects with LAR impacts (one for each of Agdash and Beylagan). The LARPs have been prepared in accordance with the requirements of SPS 2009. Azersu has institutional capacity for LARP implementation, as demonstrated in previous tranches. A grievance redress mechanism has been designed and will be active prior to commencement of LARP implementation.</p> <p>3. Plan or other Actions.</p> <p><input checked="" type="checkbox"/> Resettlement plan <input type="checkbox"/> Combined resettlement and indigenous peoples plan</p> <p><input checked="" type="checkbox"/> Resettlement framework <input type="checkbox"/> Combined resettlement framework and indigenous peoples planning framework</p> <p><input type="checkbox"/> Environmental and social management system arrangement <input type="checkbox"/> Social impact matrix</p> <p><input type="checkbox"/> No action</p>	
<p><b>B. Indigenous Peoples</b> <b>Safeguard Category:</b> <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> FI</p> <p>1. Key impacts. There are no indigenous people, as defined in SPS 2009, in the project areas. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>2. Strategy to address the impacts. No action required.</p> <p>3. Plan or other actions.</p> <p><input type="checkbox"/> Indigenous peoples plan <input type="checkbox"/> Combined resettlement plan and indigenous peoples plan</p> <p><input type="checkbox"/> Indigenous peoples planning framework <input type="checkbox"/> Combined resettlement framework and indigenous peoples planning framework</p> <p><input type="checkbox"/> Environmental and social management system arrangement <input type="checkbox"/> Indigenous peoples plan elements integrated in project with a summary</p> <p><input type="checkbox"/> Social impact matrix</p> <p><input checked="" type="checkbox"/> No action</p>	

#### V. ADDRESSING OTHER SOCIAL RISKS

<p><b>A. Risks in the Labor Market</b></p> <p>1. Relevance of the project for the country's or region's or sector's labor market, indicated as high (H), medium (M), and low or not significant (L): L</p> <p><input type="checkbox"/> unemployment <input type="checkbox"/> underemployment <input type="checkbox"/> retrenchment <input checked="" type="checkbox"/> L core labor standards</p> <p>2. Labor market impact.</p> <p>Core labor standards are reflected in contract documents. Temporary employment opportunities may be available in project towns.</p>
<p><b>B. Affordability</b></p> <p>The potential negative impact of water tariff increases on the poor is considered to be acceptable, given that the poor currently pay a higher-than-average proportion of their incomes on water.</p> <p>A consumption-based tariff will entail a higher charge on high-consuming (and possibly also higher-income) households. The water tariff is considered acceptable at less than 5% of household income.</p>
<p><b>C. Communicable Diseases and Other Social Risks</b></p> <p>1. The impact of the following risks are rated as high (H), medium (M), low (L), or not applicable (NA): NA</p> <p><input type="checkbox"/> Communicable diseases <input type="checkbox"/> Human trafficking</p> <p><input type="checkbox"/> Others (please specify) _____</p> <p>2. Risks to people in project area. No impact</p>

#### VI. MONITORING AND EVALUATION

<p>1. Targets and indicators.</p> <p>a. Residents' (including 100% female headed households) access to sanitation facilities increased from 36% in 2011 to 95% by 2018</p> <p>b. Residents' (including 100% female headed households) access to 24-hour potable water supply increased from 57% in 2011 to 95% by 2018</p> <p>2. Required human resources. IPMO and IPMC will appoint safeguards counterparts to monitor the poverty and social impact of the project. Currently a RETA consultant confirms and monitors the achievements in the GAP.</p> <p>3. Information in the project administration manual. IPMO and IPMC will implement a performance monitoring system for Tranche 4 to evaluate delivery of investments and achievements of performance indicators as outlined in the design and monitoring framework.</p> <p>4. Monitoring tools: Most social performance indicators will be monitored through implementation of the project GAP. Implementation of land acquisition and resettlement plan and grievance redress will be monitored by Azersu with the assistance of investment project management consultants and reported and disclosed on a semi-annual basis.</p>
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## **SAFEGUARD REPORTS**

Below are the links to the following safeguard reports:

1. Agdash Subproject Initial Environmental Examination  
<http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-IEE>
2. Beylagan Subproject Initial Environmental Examination  
<http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-IEE>
3. Agdash Resettlement Plan  
<http://www.adb.org/projects/documents/aze-wSSIP-t4-agdash-may-2016-RP>
4. Beylagan Resettlement Plan  
<http://www.adb.org/projects/documents/aze-wSSIP-t4-beylagan-may-2016-RP>

## UPDATED RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
<p><b>Environmental protection.</b> Treated effluent discharged into water bodies fails to meet Azerbaijan national standards for effluent discharge or comply with environmental safeguards in ADB's Safeguard Policy Statement (2009).</p>	Medium	The project will support Azersu in constructing sewage treatment plants to meet sewage discharge standards compliant with national legislation.
<p><b>Policy.</b> The government is unable to address the objectives of the urban WSS policy and sector development plan.</p>	Medium	The government's State Program on Poverty Reduction and Sustainable Development for 2008-2015 committed to improve access to basic services and targets improved WSS coverage and service quality by 2015. Further, in Azerbaijan 2020: Look into the Future, WSS was emphasized as part of the integral success to a balance development of regions.
<p>Lack of construction contractor meeting the qualifications criteria of the subprojects and industry interest in bidding for projects in Azerbaijan</p>	Medium	Azersu and ADB will conduct market surveys to assess contractor availability and interest and will extend invitations to high potential bidders during the tender process. In the event there are no explicit interest, Azersu will also contact contractors who have worked on previous projects.
<p><b>Public financial management.</b> The government is unable to provide timely counterpart funding for the investment program during implementation. The government's budget deficit continues to grow, and budgetary support from international financial institutions is limited.</p>	Medium	The government will be provided with a detailed contract award and disbursement plan for the proposed investment program during project preparation, to be updated after completion of detailed engineering designs. The plan will allow the government to program counterpart funds in its annual budget.
<p><b>Financial sustainability.</b> The government is unable to sustain its provision for sufficient viability gap funding to Azersu during project implementation.</p>	High	The capacity building program being implemented in parallel by Suez Environment is helping Azersu put in place efficient operation and maintenance, prudent financial management practices and revenue surplus generation plans through progressive tariff increase with improvement in service delivery to ensure that any viability gap funding shortfalls are adequately managed.
<b>Overall</b>	<b>Medium</b>	

ADB = Asian Development Bank, AZERSU = Azersu Joint Stock Company, WSS = water supply and sanitation.  
Source: Asian Development Bank