

Project Summary Information (PSI)

Project No: 000062

Project Name	Tuz Golu Gas Storage Expansion Project
Country	Republic of Turkey
Sector	Energy
Project No	000062
Borrower	Boru Hatları ile Petrol Taşıma A.Ş. (BOTAŞ)
Implementation Agency	Boru Hatları ile Petrol Taşıma A.Ş. (BOTAŞ)
Environmental and Social Category	Category A
Date of PSI prepared or updated	December 13, 2017
Estimated Date of Board Consideration	June 2018
Concept Decision	Approved on December 4, 2017

I. Introduction

Turkey is an upper middle-income country with a per capita income of approximately US\$10,800. Turkey's economic performance since 2000 has been impressive, both before and after the 2008/09 global financial crisis. Turkey recovered well from the global financial crisis of 2008/09, with high economic growth during the 2010-12 period. Turkey's per capita income rose from US\$ 3,115 in 2001 to US\$ 10,800 in 2016. However, economic growth slowed since 2012, per capita income has stagnated around US\$10,800 per annum, and unemployment is inching upward. These developments need to be addressed for Turkey's continued progress towards reaching high income status and reducing income inequality, at a time when the country is facing political, security and economic challenges.

Turkey increased its access to natural gas after it made a strategic choice, in the late 1980s, to diversify its energy mix. Gas power was preferred due to its lower investment cost, operational flexibility and environmental advantages compared to coal, as gas has half the carbon footprint of coal. Gas consumption by the energy sector and imports started in 1987 and in less than two decades, gas became the most important fuel in power generation displacing indigenous coal. Gas typically accounts for nearly 40 percent of the total electricity generation (in 2015 and 2016, it was at 38 and 36 percent due to favorable hydro conditions). Turkey's national gas company BOTAŞ dominates the gas market with a market share of nearly 80 percent of annual consumption. Even though the initial demand growth was led by the power sector – especially after the expansion of the natural gas transmission and distribution systems since 2003 in the country, residential consumption also increased (for heating purposes mainly) reaching 25 percent of annual consumption by-end 2016. Industrial consumers and energy producers accounted for 30 and 36 percent of the overall consumption in the same year.

The domestic production of natural gas is insignificant (less than 1 percent). Thus the country relies entirely on imports to meet the domestic consumption of natural gas that reached 46.7 billion cubic meters (bcm) in 2016.

Network capacity and storage limitations endanger security of supply. Turkey's current gas storage capacity constitutes only 6 percent of annual gas consumption (compared to 20-30 percent in large European countries), which is insufficient to cover demand spikes. The constraints in the gas market and infrastructure also have an impact on the security of electricity supply as gas-fired power generation accounts for approximately 40 percent of the total electricity generation. Because of insufficient gas storage capacity, gas supply is often restrained in meeting the daily gas demand in cold seasons. The Government has therefore assigned a high priority on increasing natural gas storage capacity to: (a) improve Turkey's energy security and its ability to cover natural gas demand peaks; (b) to help lower the cost of gas imports; and (c) to improve operational flexibility of the gas network.

A project to develop a 1 bcm gas storage utilizing the Tuz Golu salt formation is underway. The proposed Tuz Golu Gas Storage Expansion Project would raise the capacity of the Tuz Golu Gas Storage Facility by another 4 bcm.

The proposed AIIB Sovereign-backed Loan is to co-finance, with the World Bank, a series of activities for the Tuz Golu Gas Storage Expansion project (the Project). The World Bank will be the lead co-financier of the Project and will take a leading role in procurement, disbursements, ensuring environmental and social safeguards compliance, and monitoring and reporting for the Project.

II. Project Objective and Expected Results

The objective of the Project is to increase the reliability and stability of gas supply by expanding gas storage capacity and the expected result is improved energy security.

III. Project Description

The Project consists of the following components:

Component 1: Tuz Golu Gas Storage Expansion Facilities consisting of

- (i) **Surface Facilities:** this involves pigging stations, gas transmission lines connecting to the natural gas grid, all necessary injection and withdrawal units, auxiliaries, including the compressor facility, filters, fiscal metering units, turbo compressor units, reciprocating compressor units, water separators, heating and pressure reducing units and triethylene glycol units;
- (ii) **Subsurface Facilities:** This entails drilling and leaching wells to store gas within the Tuz Golu area.
- (iii) **Water and Brine Pipelines:** This will involve construction of a fresh water supply line from the Hirfanli Reservoir to the project site and a brine discharge line from the wells back to Tuz Golu. This will also include several pumping stations and storage reservoirs; and
- (iv) **Electricity Supply:** The Project includes electricity transmission lines for water pumping stations, surface and sub-surface facilities

Component 2: Supervision Consultancy

- (i) The supervision consultant/owner's engineer will be responsible for approving detailed engineering drawings and for supervising the construction and installation of the facilities as well as for the inspection and testing of materials, plant and equipment both during the construction phase and installation of the facilities; and
- (ii) The consultant will also develop and implement the overall project quality assurance and quality control program. The program will describe the quality procedures to be followed during data/document review, installation and operation stage.

Component 3: ESIA and RAP Monitoring Consultancy

- (v) Services will include, but not be limited to, regular monitoring of compliance of the construction activities with the Environmental and Social Impact Assessment (ESIA) and the Resettlement Action Plans (RAP);
- (vi) Each stage of the construction activities will be checked and monitored in accordance with the frequencies specified in an Environmental and Social Management Plan (ESMP) ensuring all environmental and social standards are being fully satisfied and all services are in full conformity with the ESMP developed by BOTAŞ based on the ESIA; and
- (vii) The consultant will be responsible for monitoring the implementation of the Resettlement Action Plan (RAP) that will be prepared by BOTAŞ in line with the Resettlement Policy Framework (RPF).

IV. Environmental and Social

The proposed Project would use the World Bank's Environmental and Social Safeguard Policies (Safeguard Policies) since: (i) they are consistent with the AIIB's Articles of Agreement and materially consistent with the provisions of the Bank's Environmental and Social Policy and relevant Environmental and Social Standards; and (ii) the monitoring procedures that the World Bank has in place to ascertain compliance with its Safeguard Policies are appropriate for use under the AIIB Project. Under the World Bank's Safeguard Policies, the proposed Project has been assigned Category A, which is consistent with the provisions of the Bank's Environmental and Social Policy. Based on the environmental and social screening, the World Bank Environmental and Social Safeguard Policies that are applicable under the proposed Project are OP/BP 4.01 Environmental Assessment, OP/BP 4.04 Natural Habitats, OP/BP 4.11 Physical Cultural Resources, OP/BP 4.12 Involuntary Resettlement and OP/BP 4.37 Safety of Dams.

The main environmental concern is about possible impacts on the Tuz Golu Salt Lake. The ongoing environmental monitoring program, which is conducted by BOTAŞ with the support of its environmental monitoring consultant, covers the impacts on Tuz Golu Salt Lake. Monitoring will continue under the Project.

The Project's social concerns include impacts on downstream users of Hirfanli Dam and the economic and livelihood impacts due to involuntary land acquisition. Since the details of the land requirement are still unknown, a Re-settlement Policy Framework (RPF) is being prepared. This will be followed by Re-settlement Action Plan (RAP) for different project sub-components.

The draft Environmental and Social Impact Assessment (ESIA) document has been disclosed and is posted at the World Bank's web site. The link is provided below:

<http://documents.worldbank.org/curated/en/424331497622953008/Turkey-Tuz-Gözü-Underground-Natural-Gas-Storage-Facility-Capacity-Expansion-Project-environmental-and-social-impact-assessment-executive-summary>

V. Estimated Project Cost and Financing Source (US\$ million)

The Project cost is estimated to be US\$ 2.5 billion. The financing sources are as follows (in US\$ million):

For Loans/Credits/Others	Amount
AiIB Loan	600
World Bank Loan	600
BOTAS	1,300
Total	2,500

VI. Implementation

The Project will be implemented by BOTAS.

Procurement is being conducted in accordance with the World Bank's Procurement Regulations for Investment Project Financing (IPF) Borrowers of July 2016. Further information is available at the World Bank's website. The link is provided below:

<http://projects.worldbank.org/procurement/noticeoverview?id=OP00043366>

Project implementation period (Start Date - End Date): June 2017 – December 2023.

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