

**INTEGRATED SAFEGUARDS DATASHEET  
APPRAISAL STAGE**

**I. Basic Information**

Date prepared/updated: 03/09/2013

Report No.: AC6832

**1. Basic Project Data**

Original Project ID: P093765	Original Project Name: GAS SECTOR DEVELOPMENT	
Country: Turkey	Project ID: P133565	
Project Name: Gas Sector Development Additional Financing		
Task Team Leader: Kari J. Nyman		
Estimated Appraisal Date: March 13, 2013	Estimated Board Date: May 30, 2013	
Managing Unit: ECSEG	Lending Instrument: Specific Investment Loan	
Sector: Oil and gas (100%)		
Theme: Infrastructure services for private sector development (100%)		
IBRD Amount (US\$m.):	225	
IDA Amount (US\$m.):	0	
GEF Amount (US\$m.):	0	
PCF Amount (US\$m.):	0	
Other financing amounts by source:		
<u>Borrower</u>		389.10
		389.10
Environmental Category: A - Full Assessment		
Simplified Processing	Simple <input type="checkbox"/>	Repeater <input type="checkbox"/>
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

**2. Project Objectives**

The objective of the Project is to increase the reliability and stability of gas supply in Turkey by implementing critically needed gas storage and network infrastructure; and support BOTAS in strengthening its operations as a financially stable and commercially managed corporation and in developing a gas trading platform.

**3. Project Description**

The Project consists of three components: gas storage facility; network expansion; and gas trading platform. (1) The establishment of a gas storage facility in an underground salt formation located close to Tuz Golu through the provision of financing for: (a) surface and subsurface facilities including engineering and construction, solution mining, the gas pipelines and the compressor facility; (b) water and brine discharge pipelines; (c) cushion gas; and (d) consultants' services to assist in the supervision and monitoring of the implementation, environmental monitoring and regulatory aspects of the Project;(2) Construction of two compressor stations in Erzincan and Corum and other network infrastructure to assist in transmitting the increasing volumes of gas expected to be imported into the Republic of Turkey from existing and new sources; and (3) the

development of a gas trading platform. The proposed additional loan would finance US\$ 200 million of the cost overrun resulting from a five-year implementation delay in the Tuz Golu gas storage facility and US\$25 million of the costs of a new gas trading platform component. It should also be noted that there has been a design change regarding the total volume of the caverns to be leached. The change was increasing the total volume of the caverns (by keeping the total volume of stored gas constant but increasing the volume of cushion gas), which also resulted in the increased flow rate of fresh water pumped from the Hirfanli reservoir and increased flow rate of brine water to be discharged into the Salt Lake.

Development objectives and the expected results of the Tuz Golu project remain unchanged except for reflecting the five-year time delay. In addition US\$ 25 million is proposed for the financing of a proposed new project component: a gas trading platform.

#### **4. Project Location and salient physical characteristics relevant to the safeguard analysis**

The gas storage facility will be in an underground salt formation located close to Tuz Golu, a salt lake in South Central Turkey. The facility will have 12 underground caverns which will be solution-mined in two phases of six caverns each. The facility, upon completion, will have a storage capacity of about 960 Million cubic meters of working gas and 460 million cubic meters of cushion gas. Water for the solution mining will be obtained from the Hirfanli Reservoir on the Kizilirmak River. It will be supplied to the Tuz Golu site by a fresh water pipeline of about 120 km in length. The brine resulting from the solution mining will be transferred to the Tuz Golu salt lake, using gravity flow, by a brine disposal pipeline of about 40 km. A gas pipeline connection will be built from the storage facility to the Kayseri-Konya-Seydisehir line, one of BOTAŞ' main trunk lines. This connector line will be 19 km in length.

#### **5. Environmental and Social Safeguards Specialists**

Mr Alessandro Palmieri (TWIWA)  
 Ms Zeynep Durnev Darendeliler (ECSSO)  
 Ms Esra Arikan (ECSEN)

<b>6. Safeguard Policies Triggered</b>	<b>Yes</b>	<b>No</b>
<b>Environmental Assessment (OP/BP 4.01)</b>	<b>X</b>	
<b>Natural Habitats (OP/BP 4.04)</b>	<b>X</b>	
<b>Forests (OP/BP 4.36)</b>		<b>X</b>
<b>Pest Management (OP 4.09)</b>		<b>X</b>
<b>Physical Cultural Resources (OP/BP 4.11)</b>		<b>X</b>
<b>Indigenous Peoples (OP/BP 4.10)</b>		<b>X</b>
<b>Involuntary Resettlement (OP/BP 4.12)</b>	<b>X</b>	
<b>Safety of Dams (OP/BP 4.37)</b>	<b>X</b>	
<b>Projects on International Waterways (OP/BP 7.50)</b>		<b>X</b>
<b>Projects in Disputed Areas (OP/BP 7.60)</b>		<b>X</b>

## **II. Key Safeguard Policy Issues and Their Management**

### ***A. Summary of Key Safeguard Issues***

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts: Key environmental and safety issues associated with Tuz Golu natural gas storage project include: seismic stability of the salt dome storage facilities and general project area (water supply pipeline, brine discharge area, gas distribution pipeline route), and environmental impacts from brine discharge into the Tuz Golu salt lake. These issues were dealt in the EIA report which was approved by WB in 2005. The project has a Category A environmental rating and accordingly an environmental impact assessment (EIA) was prepared and disclosed in 2005. Since then there has been the change regarding the size of the caverns and increase in the flow rates of the fresh water used for leaching operations and increase in the flow rate of the brine solution which will be discharged to Salt Lake. Further, the EIA did not fully cover the access roads and electricity transmission line required for the construction and operation of the project. The Ministry of Environment and Urbanization has informed BOTAŞ that the existing EIA does not need to be modified or updated by taking the existing national EIA regulation as a basis (since there are certain thresholds in the regulation stating the necessity of any update/revision). However, it was suggested by Bank team that an addendum to the EIA and a revised Environment Management Plan (EMP) would be necessary in order to reflect changes in the project design and to assess their impacts. WB received the initial draft EIA Addendum which indicated that the revisions/updates in the project will not result in additional significant environmental impacts. The major impact from the change in the design will be the increase in the use of fresh water for leaching the salt caverns and the corresponding increase in the amount of the brine solution discharged to the Salt Lake. Salt Lake is a designated Special Environmental Protected Area by Turkish Ministry of Environment and Urbanization, therefore the Natural Habitats policy has been triggered and detailed assessment on the quantity and the quality of the brine water discharge to the lake has been assessed in the project's original EIA and the EIA addendum. The EIA and the addendum made it clear that; since the brine solution has the same characteristics with the natural inflows to the Lake and the total amount of brine solution discharged is not affecting the amount of water in the lake significantly (it is resulting in a minor increase in the water level in the lake which is even accepted as a positive environmental impact considering water losses of the lake during draught periods), the project is not creating a pressure or a negative impact on the Lake. The draft EIA addendum (together with the revised EMP) is disclosed in country on March 4, 2013 and in Infoshop on March 5, 2013.

The World Bank's Resettlement Policy (OP 4.12) was triggered for the original project. In 2005, two documents were produced and disclosed, a Land Acquisition Plan (LAP), the equivalent of a Resettlement Action Plan, for Tuz Golu project area and a Land Acquisition Policy Framework (LAPF), the equivalent of a Resettlement Policy Framework, to provide guidance for producing subsequent LAPs if land was to be acquired elsewhere.

The land acquisition for the natural gas, water and brine pipelines for the Tuz Golu project was completed in 2007 and 2008, and constitutes a total of 389 hectares of long term easements. Permanent land acquisition for the pump stations, water storage tanks and the Tuz Golu Surface Facility were completed in September 2012, with a total area of 40 hectares. Lastly, the land acquisition for the exact location for Well 8 (less than 1 hectares) was completed in November 2012, though the surrounding area of the well remains to be acquired. The completed land acquisition affected land only, it did not affect any structures, and it did not physically displace any persons. In the upcoming months, additional land will be acquired for the remaining wells in the Tuz Golu Well Area, including a security buffer zone between and around them (324 hectares, of which 191 hectares are private), and long term easements will be acquired for electricity transmission lines.

Land for the eight wells to be drilled in the Tuz Golu area was not included in the original 2005 LAP. A draft revised LAP including this area and updating some other provisions of the original LAP has been disclosed in country and in Infoshop. The revised LAP needs to be finalized by adding specific baseline data to be obtained through interviews with the affected landowners. This can be done for the entire Tuz Golu well site at one time, but is more likely to be done in steps as the plot(s) comprising each successive sub-site is required for drilling. The first "sub-site specific LAP," acceptable to the Bank, should be completed as a condition of loan negotiations. The LAP covering each plot is to be completed, acceptable to the Bank, prior to acquisition, and commencement of drilling on that plot.

A Corum Compressor Station, which was to be funded through the project according to the original Project Appraisal Document in 2005, was instead excluded from Bank funding and completed with the borrower's own resources. World Bank environmental and social safeguards policies apply to all components of a project regardless of the source of financing, and a Bank-approved LAP was not produced for this Compressor Station prior to land acquisition. As a result, the Bank will review the Corum Compressor Station for compliance with the environmental and social safeguards policies and identify any possible remedial actions to be taken by BOTAS a time-bound plan. This will be done through a Bank staff site visit and a third-party environmental and resettlement audit.

Since the fresh water necessary for leaching the salt domes will be supplied from an upstream dam (Hirfanli Dam and Reservoir), the dam safety OP was also triggered for the original project. Dam safety specialist suggested some measures in the latest AM of the project, and since the dam was owned by State Hydraulic Works - DSI-, all measures were discussed and agreed by DSI. DSI has drafted a report summarizing the actions taken by them and they are still working on the updating of the Operations and Maintenance Manual and this will be finalized before loan negotiations and will be made an annex to the EMP.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

Turkey would need more gas storage capacity beyond the project. Potential exists to develop additional gas storage in the Tuz Golu salt formation. Therefore, similar projects are started to be developed by government/private sector in the same region, therefore cumulative impacts should also be followed. Regarding this, the EIA addendum also deals with the possible cumulative impacts of brine discharge to Salt Lake arising from Botas project and reasonable foreseen similar projects.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Not relevant at this time. Alternatives were considered at the time of project investment decision in 2005. Developing gas storage in the Tuz Golu salt formation was chosen as the best option available in Turkey. Development of gas storage in salt deposits using the process of solution mining the caverns is an established practice and has been successfully employed elsewhere in the world.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

An environmental impact assessment (EIA) including an environmental management plan (EMP) was prepared and disclosed in 2005. As described above, Botas has prepared the draft versions of the addendum to the existing EIA and a revised EMP. These drafts were shared with local public and upon finalization (before negotiations) will be disclosed in country and Infoshop again.

Botas has also engaged with the environmental monitoring consultancy company who will be responsible for supervising BOTAS and the construction contractor for successful implementation of the EMP including the revised sections of the EMP.

Land for the Tuz Golu Surface Facility was acquired without keeping the Bank informed of the acquisition process and without collecting the necessary information on the project affected people prior to the acquisition. In addition, the project appeared to lack an acceptable formal Grievance Redress Mechanism (GRM) as required by the Bank's policy. BOTAS submitted a draft social audit report in December 2012, which the Bank reviewed and provided comments and requested for further information on the timing of the consultations, the compensation payment and the GRM. During a field visit in January 2013 the Bank team was able to talk to some of the project affected people and the local Muhtar (village head) about this acquisition and verify that market rate payments had been made available to those affected.

Lands for the Tuz Golu Well Area and the proposed electricity transmission lines were not included in the original 2005 LAP. Therefore, BOTAS has revised the original LAP to include the additional land, to update information that had become outdated since the LAP was prepared in 2005 and also to clarify some requirements. A Bank team visited the project site during January 2013 and provided detailed guidance on what was required for the revised LAP. The Bank team also delivered a one-day Resettlement Policy

training to BOTAS land acquisition staff to help avoid compliance problems in the future.

BOTAS is aware that a revised LAP (acceptable to the Bank) should be in place and disclosed prior to any further land acquisition. Implementation will be monitored by Bank implementation support missions. BOTAS has also agreed to hire by loan negotiations an external monitor to assist with the supervision monitoring and completion reporting. BOTAS has confirmed that there will be no further land acquisition beyond which will be covered in the revised LAP.

The safety of the Hirfanli dam was inspected during project preparation and its safety is being monitored by DSI. This arrangement is adequate because: (a) Hirfanli is an existing dam; (b) the dam safety measures do not involve significant and complex remedial works; and (c) DSI is the national regulator of dam safety and runs an effective dam safety program including periodic inspections and safety assessments of its dams. As stated before DSI took some extra measures that the Bank's dam specialist suggested and they will update the Operations and Maintenance Manual for the Dam before loan negotiations. Although DSI will be responsible for conducting the dam safety measures, BOTAS will be following the actions taken and will be responsible for reporting back to the World Bank.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people. Following the Turkish Law for Expropriation, BOTAS has carried out consultations with project affected people to inform them of land acquisition procedures. In preparation for the revised LAP and while collecting the necessary socio-economic information on project affected people, BOTAS will inform them of the revised LAP and its means of disclosure.

Regarding the original project preparation, it was thought that given DSI's capacity, and given the relatively small impact of the project on the reservoir, a separate panel of experts may not be necessary. It was decided that DSI's operations department will monitor the dam's safety and implement the agreed measures. This is still the case for the agreed actions as stated above. For the measures taken, an independent review will be carried out by DSI General Directorate for Dam Safety and the relative report shared with the World Bank.

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### ***B. Disclosure Requirements Date***

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#### **Environmental Assessment/Audit/Management Plan/Other:**

Was the document disclosed <b>prior to appraisal?</b>	Yes
Date of receipt by the Bank	02/19/2013
Date of "in-country" disclosure	03/04/2013
Date of submission to InfoShop	03/05/2013
For category A projects, date of distributing the Executive	11/07/2005

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Summary of the EA to the Executive Directors

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**Resettlement Action Plan/Framework/Policy Process:**

Was the document disclosed <b>prior to appraisal?</b>	Yes
Date of receipt by the Bank	02/25/2013
Date of "in-country" disclosure	03/04/2013
Date of submission to InfoShop	03/05/2013

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**Indigenous Peoples Plan/Planning Framework:**

Was the document disclosed <b>prior to appraisal?</b>	
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	

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**Pest Management Plan:**

Was the document disclosed <b>prior to appraisal?</b>	
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	

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**\* If the project triggers the Pest Management and/or Physical Cultural Resources, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

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**If in-country disclosure of any of the above documents is not expected, please explain why:**

The original EIA was received by the Bank on 06/03/2005, disclosed in the country on 06/01/2005 and shared at the infoshop on 07/08/2005. Dates provided in this ISDS are the disclosure dates of the EIA addendum and the revised EMP being a part of the addendum.

A revised LAP, for the acquisition of land not covered in the 2005 LAP, has been prepared, received by the Bank on February 25, 2013, disclosed in country on March 4th, 2013, on InfoShop March 5th, 2013. After agreement between the World Bank and BOTAS, this revised LAP was conditionally cleared with the understanding that BOTAS will collect socio-economic data on project affected persons before acquiring the additional lands. These additional submissions will need to be cleared by the Bank, and disclosed along with the LAP going forward before any land acquisition takes place.

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***C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)***

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**OP/BP/GP 4.01 - Environment Assessment**

Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes

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**OP/BP 4.04 - Natural Habitats**

Would the project result in any significant conversion or degradation of	No
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critical natural habitats?  
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

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**OP/BP 4.12 - Involuntary Resettlement**

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared? Yes

If yes, then did the Regional unit responsible for safeguards or Sector Manager review the plan? Yes

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**OP/BP 4.37 - Safety of Dams**

Have dam safety plans been prepared? Yes

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank? N/A

Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training? Yes

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**The World Bank Policy on Disclosure of Information**

Have relevant safeguard policies documents been sent to the World Bank's Infoshop? Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs? Yes

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**All Safeguard Policies**

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies? Yes

Have costs related to safeguard policy measures been included in the project cost? Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies? Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents? Yes

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***D. Approvals***

<b><i>Signed and submitted by:</i></b>	<b><i>Name</i></b>	<b><i>Date</i></b>
Task Team Leader:	Mr Kari J. Nyman	03/07/2013
Environmental Specialist:	Ms Esra Arikan	03/05/2013
Social Development Specialist Additional Environmental and/or Social Development Specialist(s):	Ms Zeynep Durnev Darendeliler	03/07/2013
<b><i>Approved by:</i></b>		
Regional Safeguards Coordinator: Comments:	Ms Agnes I. Kiss	03/08/2013
Sector Manager: Comments:	Mr Ranjit J. Lamech	03/07/2013