



BORASCO ELECTRICITY GENERATION INC

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SAMSUN PROVINCE, CARSAMBA and TERME DISTRICTS

**SAMSUN NATURAL GAS
PIPELINE PROJECT**

**FINAL
ENVIRONMENTAL IMPACT ASSESSMENT
(EIA)
REPORT**

Non Technical Summary



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ANKARA – 2010

TITLE PAGE

Project Owner	BORASCO Electricity Generation Inc.
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Telephone and Fax Numbers	Telephone : +90 (212) 329 82 12 (pbx) Fax : +90 (212) 290 23 40
Name of the Project	Samsun Natural Gas Pipeline Project
Project Budget	App. 20 million €
Location of the Project	Samsun Province Carsamba and Terme Districts Plan No: F34.a3, F37.b4, F37.b3, F37.c2, F38.d1 and F38.d2

REMARK: References to chapters, appendixes, figures, tables etc. refer always to the final EIA report

Non-Technical Summary

Conclusions from the EIA report

It has been planned to construct a natural gas pipeline in a diameter of 24 inch and approximately 51 km (50+952 m) long within the borders of Carsamba and Terme districts of Samsun Province by BORASCO Electricity Generation Inc. (BORASCO).

BORASCO has been planning a constructions of an power plant with a total capacity of 899,37 MWm / 890 MWe (2×445 MWe) within the borders of Terme District of Samsun Province. A “Environmental Impact Assessment Positive” resolution has been taken on the date of 01.04.2009 for the Environmental Impact Assessment (EIA) Report which was prepared for the aforesaid “Samsun Natural Gas Combined Cycle Plant” project. Annually approximately 7.796 GWhour electricity generation of the plant in which natural gas will be used as the fuel has been anticipated. This pipeline which has been planned to be constructed by BORASCO shall supply 240.000 m³/hour natural gas to the aforesaid plant.

It has been planned to procure the natural gas to be utilized within the scope of the project from the line which takes place approximately on 45 km west of the plant and has been used by Petroleum Pipeline Corporation (BOTAS) within the scope of Blue Stream Project. Aim of the project is the construction of the pipeline which will deliver the natural gas to be procured from Blue Stream Pipeline to Samsun Natural Gas Combined Cycle Plant. Cooperative studies had been carried out by receiving opinions of BOTAS regarding the route of the pipeline and gas procurement. Start up of the Pipeline has been planned for the end of October,2011 and life-time of it has been anticipated as 30 years.

Samsun Province takes place between the delta's in the middle of Black Sea cost line in which Yesilirmak and Kizilirmak Rivers disembogue. As geographical location, it is between east longitudes of 36°39' - 37°11' and North latitudes of 41°07' - 41°22'. Neighbors of the Province of which Karadeniz takes place at the North are Ordu in the east, Sinop in the west, Tokat and Amasya in the South, Corum in the South west.

Samsun Province has 14 districts, 51 municipalities and 945 villages that have been composed of Alacam, Asarcik, Ayvacik, Bafra, Carsamba, Kavak, Ladik, Havza, 19 Mayıs, Salıpazarı, Tekkekoy, Terme, Vezirkopru and Yakakent.



Figure II.1 Project Area and Site Location Map

The project area is located within the borders of Carsamba and Terme Districts in Samsun Province. Besides, while the area takes part in Samsun F34.a3, F37.b4, F37.b3, F37.c2, F38.d1 and F38.d2 map sections that are scaled 1/25.000, it is approximately in the magnitude of 85,6 ha (51 km line length × 17 m working corridor). The field of project takes place at approximately 30 km east of the Samsun Province Centre, 12 km northeast of Carsamba District Centre, and approximately 2km away from Terme District Centre (see Figure II.1 and Appendix-1).

Starting point of the anticipated natural gas pipeline (Blue Stream Natural Gas Pipeline) has been given in Photo II.1, while the ending point (Samsun Natural Gas Combined Cycle Plant Field) has been given in Photo II.2. At the east of the project area, Akcay Creek takes place.

While diameter of natural gas pipeline which is planned to be constructed is 24", length of it is approximately 51 km. The capacity of pipeline shall be 240.000 m³/hour.

The units to be established within the scope of project are given below.

- Pigging station
- Natural Gas Pipe
- Blocking Valve Station
- MS Station

When the 1/100.000 scaled Environment plan (EP) which was prepared by R.T. Ministry of Environment and Forestry for Samsun Province is considered, The field proposed for Samsun Natural Gas Pipeline (NGPL) generally covers the land which has been determined as “qualified agricultural lands”. Besides, in some parts throughout the route, some forestry areas also have been crossed.

Throughout Samsun NGPL, various special crossings with each of them requiring different methods have been met. These special crossings could be classified as follows:

- River, creek and other stream crossings,
- Road crossings,
- Railway crossings,
- Drying channel crossings,
- Energy transmission line crossings,

- Fault crossings and
- Other crossings (communication line, potable water line etc.).

Impact area of the project at construction and operating stages is the 17 m (6 m + 11 m) which is also an expropriation area. No improved areas have been crossed within the scope of the project. But due to dispersed settlement in the region, in some cases some rural settlement areas have been crossed closely by taking minimum safety conditions into consideration. The settlements situated within the pipeline corridor and the distances to these settlements is given in Table II.11.

The life-time of the pipeline of which construction has been planned shall be approximately 30 years. It has been estimated that 300 people will work at construction stage. As needs of the personnel who will work such as food, beverage etc will be met in the region, it will have a positive impact on the economy.

Within the scope of construction activities of Samsun Natural Gas Pipeline Project, risks which would occur intended for human health and safety are related with accidents that are possible to meet in such construction works. In this sense, the contractor company which will carry out the construction activities shall practice upon worldwide accepted safety rules alongside with knowledge and experience in order to make the field safe for all workers and assure the safety of excavation, scaffoldings together with heavy construction equipments (cranes etc). The employees shall be assured to use personal protective materials (helmet, goggles, gloves, belt etc.).

Map of important soil groups observed throughout the pipeline route is given in Appendix-6 while length and rates of soil groups observed throughout Samsun NGPL route are given in Table IV.1.

The erosion levels of the lands situated throughout the pipeline can be seen in the maps given in Appendix-6. Rates of lengths in terms of erosion levels throughout the pipeline are given in Table IV.2.

Agricultural lands are available on the route of the pipeline which has been planned to construct. When it is considered that a 17 m working corridor shall be used during the construction of the pipeline, current land usage will change on the parts which correspond with agricultural lands. But following the completion of the construction areas within the working corridor shall be immediately rehabilitated and restored. Seasonal products also shall be cultivated in parts crossed by the route providing that no rooted plants are planted.

The project area has been constituted of quaternary old alluviums as geological structure. An alluvial stocking in which the intensity of generally silt, clay, sand and gravel materials changes in lateral direction and which has been constituted of cross beddings is available.

No endemic or an under-protection plant type has been met in the project field. For this reason other the considerations which should be general paid attention regarding protection of plant types no other special measures that should be taken has been proposed.

During every kinds of activities to be carried out in the project field, especially measures given above related to wild animal types that are included in Appendix-II and Appendix-III of Bern Convention shall be precisely executed.

Throughout pipeline route, there are irrigation and drainage channels which should be constructed within the scope of SWA Carsamba Plain Irrigation project. During crossing of the pipeline over these channels, relevant protocols shall be complied with. The considerations which should be complied with according to SWA are given in Appendix-8.

Opinion of General Directorate of Railways, Ports and Airports Construction has been asked for in consideration of Railway Line project which has been planned to be constructed in the South of the pipeline route while received opinion has specified that there is no harm in construction of the pipeline in case crossing will be executed out of the border of railway expropriation. The pipeline crosses out of the aforesaid railway line expropriation border.

For determination of cultural and natural properties within the natural has pipeline corridor, Samsun Directorate of Museum has been applied to while a field study has conducted together with the museum staff. In the field study and literature scanning, no protected area or an archeological area has been determined within the project area and impact area. But if any finding shall be met during the construction Works of the project, closest Directorate of Museum shall be informed and the construction shall be stopped. Opinions of Samsun Directorate of Museum in consideration of the subject and list of immovable cultural properties in Carsamba and Terme Districts are given in Appendix-8.

Waste amounts and types to be arisen from the project that has been planned to be constructed are described in detail in Chapter V.

By taking the impacts of the enterprises to environment and public health and pollutant factors into consideration by the inspection boards specified in the provisions of "Regulations Regarding The Licenses of Business Commencement and Working" within the scope of the project, suitable opinion of R.T. Ministry of Health shall be acquired and by determination of health protection strip distances in accordance with the principles, procedures and reference distances to be determined by again the same Ministry, the health protection strip approved by the competent authority shall be entered into the construction plan and these distances shall be protected by the relevant Directorate of Construction or relevant institution.

The pipeline shall be closed for operating when the life-time is completed. In this case, as described in Chapter IV.2.5, the gas flow shall be stopped by disconnecting the line from Blue Stream Natural Gas Pipeline and the line will be discharged and it will be cleared of gas via a vacuum pump, then both ends shall be blanked and left under earth. After this operation, surface facilities shall be dismantled and removed and the land shall be restored and used.

Required Works and proceedings shall be carried out after receiving EIA Positive decision and arrangement of the implementation construction related to the project within the framework of related regulations.

Protected areas in Project Impact Area

Delta Yesilirmak in which also the project area takes place is the biggest delta of Turkey at the coast of Black Sea (90.000 ha). A very large part of the delta has been converted into an agricultural area.

The Wetland Areas Committee has drawn the borders of the wetlands as a result of the investigations and studies conducted by it in the area related to the Delta Yesilirmak. In accordance with the 5th Article of 2008 2nd National Wetland Committee Meeting dated 6.November.2008, Yesilirmak Wetland Protection Region has been approved unanimously. As natural gas supply shall be provided over Blue Stream Pipeline, first couple of kilometers of the planned pipeline stays within this wetland borders. (see Figure IV.19 and Appendix-1).

In approximately 4-5 km northeast of the stipulated project area, Delta Yesilirmak Important Bird Area (IBA) is available (see Figure IV.19). In the east part of the delta, Simenlik Lake-Akgol Wetland Area Complex which could barely protect natural beauties, dune areas together with Cladium communities developed behind them and a wide afforestation area is available. 200 ha of the 1.900 ha of surface area of Simenlik Lake-Akgol is open water area, remaining part is reeds and marsh. Not being so remarkable, among the areas left out of the borders of Special Environment Protection Area, small lakes and lagoons called Gagalı, Dumanlı, Akcasaz and Ahubaba can be pointed out in the middle and west part of the delta. Throughout the pipeline route within the scope of the project, any of these aforesaid sensitive regions are available.

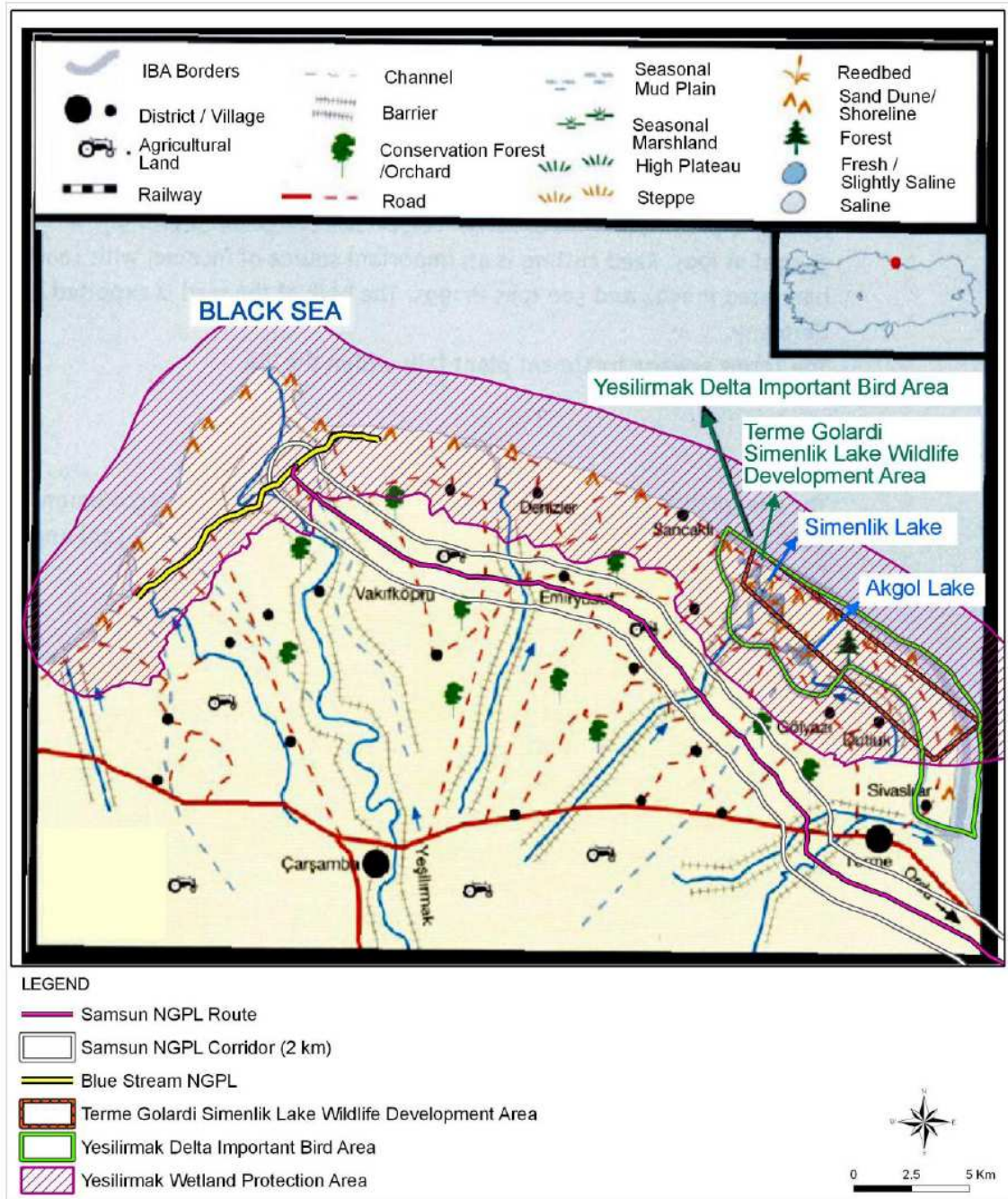


Figure IV.19: Project Area and Surrounding Protection Areas

Monitoring Program

With purpose of monitoring the environmental impacts which would occur after land preparation-construction, operating and facility activities within the scope of Samsun Natural Gas Pipeline Project an environmental monitoring program has been arranged. Aforesaid environmental monitoring program depends on the environmental resources and exposure level of them from the proposed project which would arisen from the negativities.

In addition to this, information related to the project from the commencement of the investment (construction period) to start-up of operating shall be communicated to R.T. Ministry of Environment and Forestry in periods deemed suitable by the Ministry via "Final EIA Report Monitoring Reports Form" which takes place in Appendix-4 of Certificate of Competency Notice of R.T. Ministry of Environment and Forestry which has become effective by being published in the Official Gazette dated 08.08.2008 and numbered 26961.

Information related to the monitoring program specified under three main headings as land preparation, operating and after operating within the scope of the project is given below.

With the purpose of keeping impacts that would occur on the environment at the minimum level, execution of Works in the field in accordance with the relevant regulations and by-laws of environment legislation starting from the construction activities of the project as long as the construction period should be supervised by a professional environment team assigned by the Provincial Directorate of Environment and Forestry.

Whether the storage of the vegetable soil to be removed during line Works and the environmental planning Works after construction have carried out in accordance with the project and the future intended use shall be controlled, in case of discovery of a trouble, required warnings shall be made.

The equipments to be used during construction stage shall be checked regularly while in order to assure the minimum level noise development, required maintenance shall be carried out. In addition to this, in order to determine the noise arisen from the project, periodically (for ins. Every month for three days constantly) noise measurement shall be carried out. In case the noise exceeds the limit values specified in RENAM (Regulations For Environmental Noise Assessment and Management), usage of protective equipments related to the subject shall be assured. Measurement results shall be kept in the construction site and at the project owner and shall be revealed upon request of the authorities.

Dust emissions which is possible to occur at construction stage shall be measured regularly. Within this scope, the period in which excavation Works are the most intensive and the meteorological conditions are the most arid. The values to be obtained out of the dust emission measurement study which will be carried out for one week time approximately shall be compared with the borders specified in RAQAM (Regulations for Air Quality Assessment and Management) Appendix-IA.

Participation of the Public

Description of the Region Public Who Will Probably Be Affected From the Project

Construction of the project has been stipulated by BORASCO Electricity Generation Inc. In this sense, region public who will be probably affected from the project are the residents of Carsamba and Terme Districts of Samsun.

Methods Used For Participation of the Public In EIA Process

In order to inform the public about Samsun Natural Gas Pipeline activity to be constructed by BORASCO Electricity Generation Inc., to receive their opinions and suggestions;

- a) In accordance with the 9th Article of EIA Regulations which has become effective by being published in the Official Gazette dated 17.07.2008 and numbered 26939, a place to which participation of the whole public who is concerned with the project shall be provided easily in order to inform the public about the investment, to receive their opinions and suggestions regarding the project has been determined. An advertisement which determined date, hour, place and subject of the meeting has been arranged before the meeting and has been announced at least 10 days before the meeting in a newspaper published in national level together with a local newspaper.
- b) Before the Public Availability Session, announcements have been made with loudspeakers via Municipality, publication texts have been publicized at places that are in sight of the public.
- c) Opinions and suggestions of members of Scope Determination and Examination Assessment Commission had been assessed separately by the activity owner about Public Availability Session.

Related to the project, for the purpose of public availability, a Public Availability Session has been held in the Meeting Hall of Public Education Center in Subprovincial Special Administration Building which is located in Terme District on the date of 1.04.2010. Representatives of region public and public bodies and institutions have delivered their opinions and suggestions relating to the project in the meeting.

Besides leaflets which have been arranged in order to provide a briefing for the region public before the meeting have been distributed (see Figure VIII.2-Figure VIII.3).

Detailed information has been given about the selection of place and technology to the region public who has expressed their concerns about the the place of the project field and the technology to be used. In respect thereof, format of the EIA report has been prepared by taking opinions and suggestions of the public into consideration also. Besides, concerns and assessments brought into question by the local public during Public Availability Session have also been mentioned in the relevant parts of this report.



Photo VIII.1 Public Availability Session -1



Photo VIII.2 Public Availability Session-2



Photo VIII.3 Public Availability Session-3

DUYURU

Samsun İli, Çarşamba ve Terme İlçeleri sınırları içerisinde BORASCO Elektrik Üretim San. ve Tic. A.Ş. tarafından yapılması planlanan "Samsun Doğal Gaz Kombine Çevrim Santrali Doğal Gaz Boru Hattı" projesi ile ilgili olarak; 17.07.2008 tarih ve 26939 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliği'nin 9. maddesi gereğince, aşağıda belirtilen yer ve saatte proje sahibi tarafından halkı katılım hakkında bilgilendirmek, projeye ilişkin görüş ve önerilerini almak üzere "**HALKIN KATILIMI TOPLANTISI**" tertip edilecektir.

Tüm halkımız davetlidir.

FAALİYET SAHİBİ : BORASCO ELEKTRİK ÜRETİM SAN. VE TİC.A.Ş
TOPLANTI YERİ : Terme İlçe Özel İdare Binası Halk Eğitim Merkezi Toplantı Salonu
Fenk Mah.Çarşamba Cad.Terme/SAMSUN
TOPLANTI TARİH : 14.04.2010
TOPLANTI SAATİ : 11.00

Figure VIII.1: Public Participation Meeting National Newspaper Advertisement



BAŞLANGIÇ NOKTASI

Mayıs Akımı



OLASI ÇEVRESEL ETKİLER



PROJENİN TANIMI

Yapılacak boru hattı, Samsun İli Çarşamba ve Terme ilçeleri sınırları içerisinde, yaklaşık 50 km uzunluğunda ve 600 mm çapında olacaktır.

İşletmesi BOTAS tarafından yapılacak olduğu için yapım standartları da BOTAS tarafından belirlenen bu boru hattı kamu yararına uygun görülün yerlere doğal gaz arzı sağlayacaktır.

PROJENİN YERİ

Boru hattı güzergahı Samsun İli'nde Çarşamba ve Terme ilçeleri sınırları dahilinde bulunmaktadır.

Kamulaştırma BOTAS tarafından yapılacak olup, boru hattı güzergahı seçiminde BOTAS ile mutabakata varılmıştır.

PROJENİN SÜRESİ

Boru hattının ömrü en az 30 yıldır. İnşaat çalışmaları yaklaşık 12 ay süreceklerdir.



BİTİŞ NOKTASI

Toz Yayıcı İşlemler ve Gaz Emisyonları

Toz emisyonuna neden olabilecek inşaat ve hafriyat benzeri malzeme taşıyan araçlar toz emisyonun oluşmasını engelleyecek şekilde örtü ile kapatılacaktır.

Tüm araçların hız sınırlarına uyması sağlanarak, stabilize veya geçici yollarda toz emisyonu oluşmaması için özen gösterilecektir.

Egzoz emisyonları düzenli olarak ölçülmüş araçlar kullanılacak, yasal sınır değerlere uygun olarak çalışmaları sağlanacaktır.

Gürültü ve Vibrasyon

İnşaat faaliyetleri gündüz saatleri ile sınırlı tutularak, kullanılacak araç ve ekipmanların bakımı düzenli olarak yaptırılarak, gürültü seviyesinin minimumda tutulması sağlanacaktır.

Diğer

İnşaat faaliyetleri sırasında arkeolojik kalıntıya rastlanması halinde çalışmalar durdurularak yetkililere haberverilecektir.

İnşaat, bölgenin deprem koşullarına uygun olarak yürütülecektir.

İnşaat personelinin ihtiyacı olan su, çevre yerleşimlerdeki mevcut su şebekelerinden temin edilecektir.

Atıksular, fosseptiklerde depolanacak ve vidanjörlerle Terme Belediyesi Arıtma Tesisi'nde bertaraf edilecektir.

PROJENİN ÖZELLİKLERİ

- Uzunluk : 50 + 342 km
- Çap: 600 mm
- Boru Tipi: Çelik Boru
- İnşaat süresi: 12 ay
- İnşaat aşamasında çalışacak personel: 300 kişi
- Proje Ömrü :En az 30 yıl
- Kapasite: 240.000 m³/saat doğal gaz



Figure VIII.3 Pipeline Information Leaflet Back Page