



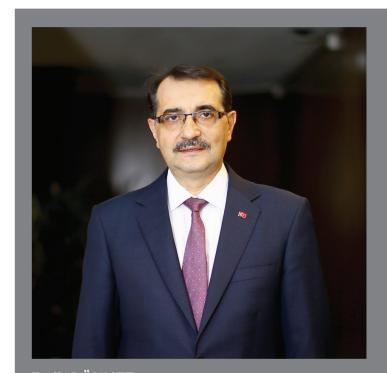
FORFWORD

Turkey continues to be an island of stability and growth with nearly 6% annual economic growth over the past 15 years. During this economic boom period, energy sector grew and went through a reform and restructuring process starting with the legal framework set up in 2001. With the introduction of the independent regulatory authority (EMRA) the market has become a level playing field for market players. Ensuring non-discriminatory access to energy markets mobilized sizeable private sector investments and involvement in energy activities. Since then the installed capacity in electricity generation, for instance, has almost tripled and the energy landscape in Turkey's consumption and power generation patterns have altered.

Turkey's energy sector is in a transition to ensure self-reliance, robustness, diversification, supply security, competitiveness and low-carbon energy in compliance with its national circumstances. Accordingly, Turkey announced its new National Energy and Mining Policy which is built upon three main pillars: 1) Security of supply, 2) Localization by domestic and renewable resources, and 3) Predictable market conditions for investors. This policy introduced a new framework for conceptualizing the progress we have already achieved long ago into a more structured and clear pathway.

In light of the positive track record we have achieved in all sub-sectors of the energy sector, Turkey has achieved a remarkable progress in creating a regulatory framework with a transparent and competitive market structure in convergence with EU markets. Political stability and good governance have eased the movements of private sector investments in the field of energy.

Turkey will continue to be **a safe harbor and a leading actor** in its region for further investments. Taking this opportunity, I would like to invite all investors to take part in Turkey's lucrative energy future.



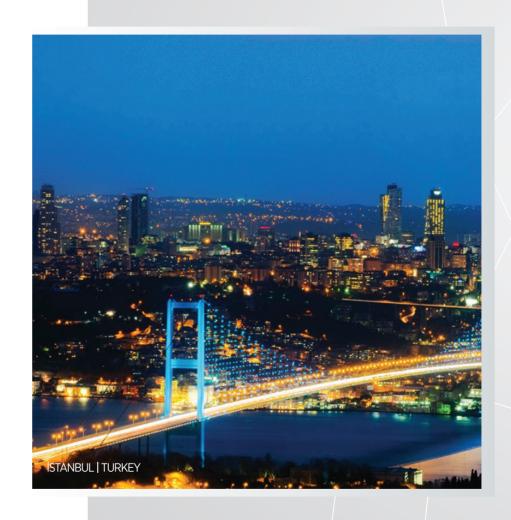
Fatih DÖNMEZ Minister of Energy and Natural Resources

INVESTOR'S GUIDE FOR NATURAL GAS SECTOR IN TURKEY

WHY INVEST IN TURKEY?

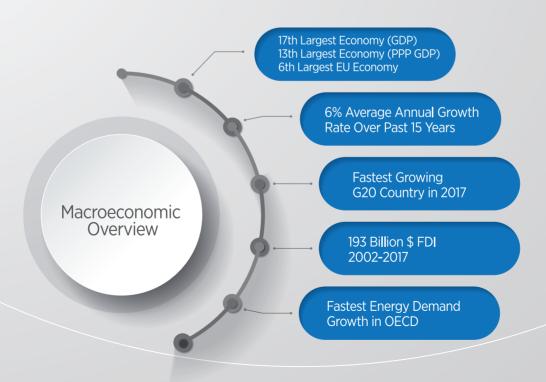
Turkey's Macroeconomic Overview

Over the past two decades, Turkey has emerged as a strong regional player with global ambitions to be one of the top ten economies in the world, achieving an **impressive annual growth rate of nearly 6% over the past 15 years.** Exceeding expectations, the Turkish economy grew by 7.4% in 2017, earning Turkey the title of fastest growing G20 country. With this achievement, Turkey's economic growth rate even surpassed China and India, which recorded 6.9% and 6.4% growth respectively in 2017.



Turkey is taking actions to improve its economic fundamentals. For instance, a series of government measures is set to reduce the current account deficit, with one such measure being that international investments can be used as leverage to support the localization of technologies and products. In addition, in priority sectors where Turkey is dependent on imports of intermediate goods, international companies are being attracted to the country to produce these goods locally. An example of this is the energy sector, which had a very high external dependence a decade ago. With the implementation of various measures, it is expected that the localization rate in the sector could rise to over 65% in the coming 5 to 10 years.

Turkey enacted the Foreign Direct Investment Law in 2003, enshrining equal treatment for all investors, both foreign and domestic, and providing them with certain guarantees, such as international arbitration, guarantee of profit transfer, and protection against expropriation. The economic development and structural reforms have made Turkey one of the most attractive destinations for FDI. FDI inflow to Turkey amounted to USD 193 billion in the 2002-2017 period. In the same period, total FDI inflow to the energy sector stood at about USD 18 billion. Similarly, the number of companies with foreign capital in Turkey reached 58,400 in 2017, up from 5,600 in 2002.



WHY INVEST IN NATURAL GAS SECTOR IN TURKEY?

Turkish Gas Market Overview

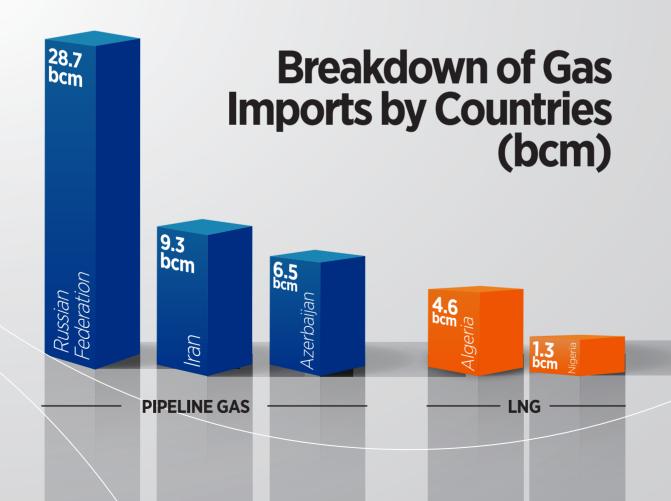
Natural gas has been used extensively for power generation in Turkey since the late 1980s. Turkey is increasingly utilizing natural gas, both from its own reserves and from imported gas, having established long-term purchase contracts with the Russian Federation, Algeria, Nigeria, Iran and Azerbaijan. Turkey also buys spot and short and medium term liquefied natural gas ("LNG") from the market. Turkey has very limited domestic gas reserves and national gas production represents less than 1% of the total domestic demand. Consequently, nearly 99% of natural gas demand is satisfied by imports.



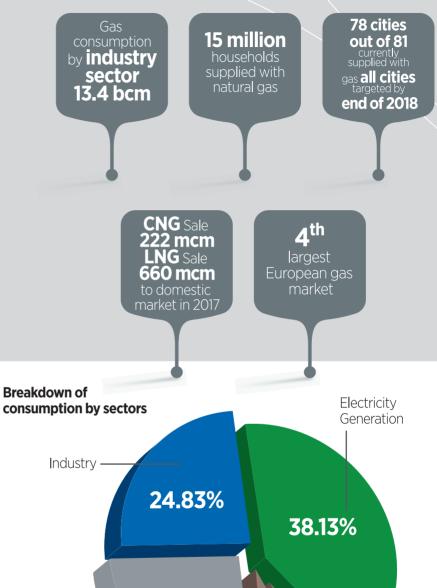
Natural Gas Supply in Turkey

Turkey imported 28.7 bcm of natural gas from the Russian Federation, 9.3 bcm of natural gas from Iran and 6.5 bcm of natural gas from Azerbaijan in 2017. Turkey also imported 4.6 bcm and 1.3 bcm of natural gas from Algeria and Nigeria respectively, in LNG form by long term contracts. On the other hand, in 2017 Turkey also imported spot LNG from Qatar, Norway, the USA, Nigeria, Trinidad and Tobago, Equatorial Guinea, Great Britain, and the Netherlands.

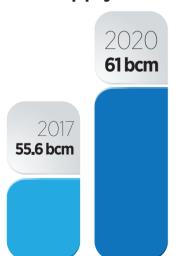
In 2017 spot LNG from Qatar, Norway, the USA, Nigeria, Trinidad and Tobago, Equatorial Guinea, Great Britain, and the Netherlands: 4.8 bcm



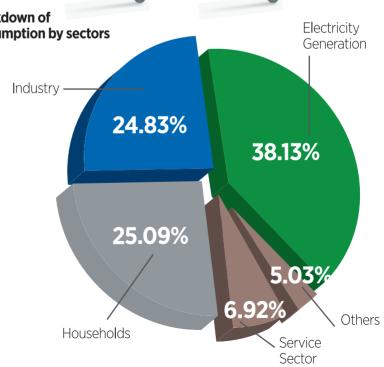
Gas consumption which totaled 53.86 bcm in 2017 was composed of; 38.13% electricity production, 24.83% industry, 25.09% households, 6.92% service sector and 5.03% other sectors' share. Distribution is carried out by local distribution companies. As of the end of 2017, 72 distribution zones corresponding to 78 provincial cities out of 81 were supplied with natural gas. By the end of 2018, all the cities are expected to use natural gas.







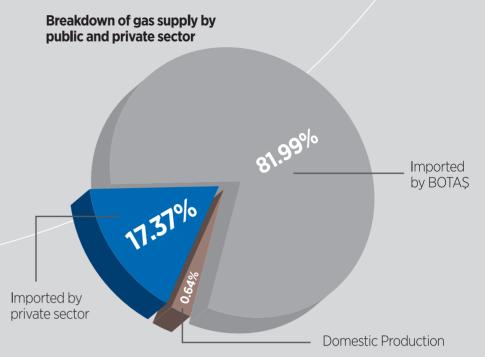
In 2017, total natural gas supply amounted to 55.6 bcm. Forecasts currently indicate that the annual demand for natural gas will exceed 61 bcm 2020.



^{*}Gas supply is composed of import and production amounts.

In 2017, total natural gas supply amounted to 55.6 bcm, 81.99% of which was imported by BOTAS, 17.37% of which was imported by the private sector, and 0.64% of which was produced domestically. Turkey aims at increasing the share of the private participants in gas sector.

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Liberalization of Natural Gas Market in Turkey

The legislative framework is being improved in Turkey to facilitate the liberalization in Natural Gas Market. Organized Natural Gas Wholesale Market By-law enacted in 2017 established the basis for the foundation of Continuous Trading Platform (CTP). CTP allows the market players to trade natural gas anonymously in an organized liberal market operating by continuous trading principles, as well as having the transmission system operator balance the system. CTP became operational on September 1, 2018, within the Energy Exchange Istanbul (EXIST).

Organized Natural Gas Wholesale Market became operational through the establishment of Continuous Trading Platform on September 1, 2018.

Free market entry through licensing

Liberalized imports
through contract release and new contracts

Nondiscriminatory conduct between domestic and foreign investors The foundation of the Organized Natural Gas Wholesale Market is an important step towards establishing Turkey as an international gas trade center allowing the trade of gas from different sources. The Organized Natural Gas Wholesale Market is expected to give players crucial price signals about the market and contribute to the liberalization of the natural gas market. In 2015, EXIST was established to operate the organized wholesale markets. EXIST currently operates electricity and natural gas spot markets.

Studies for **Restructuring**of BOTA\$ & Reform of Natural Gas Market for further liberalization are ongoing.

Energy Market Regulatory Authority

Energy Market Regulatory Authority (EMRA) was established in 2001 in order to perform the regulatory and supervisory functions in the energy markets. The fundamental objective of EMRA is to ensure the development of financially sound and transparent energy markets operating in a competitive environment. It is also EMRA's responsibility to maintain the delivery of sufficient, high-quality, low-cost and environment-friendly energy to consumers and to ensure the autonomous **regulation, licensing** and **supervision** of electricity, natural gas, and downstream petroleum and LPG markets.

Independent regulatory authority

in the Energy Market since 2001:

EMRA

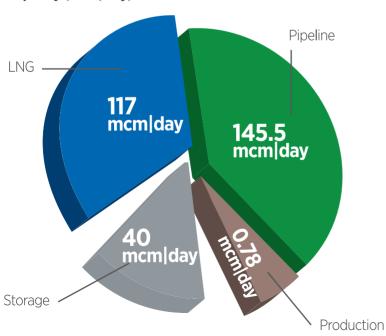


Natural Gas Network Insfrastructure in Turkey

Together with the increased LNG and underground storage capacity, total entry capacity of Turkey has exceeded 303 mcm/day. Turkey aims at increasing the total entry capacity to 400 mcm/day. Considering the fact that the highest peak demand from natural gas transmission grid was 243 mcm/day (14 February 2017), Turkey's gas infrastructure is sufficient to meet the rapid increase demand in the upcoming years.



Breakdown of the Daily Entry Capacity (mcm/day)



LNG

The increased regasification capacity of the LNG terminals exceeding 117 mcm/day as a result of the upgrades to the terminals and the new Floating Storage and Regasification Units (FSRUs) owned by BOTA\$ and private sector, are significant steps to ensure security of supply in the natural gas market. Tariffs on LNG terminals including FSRUs have been liberalized as of the end of 2017, in line with the Natural Gas Market Law articles dictating that such storage tariffs should be freely set between parties provided that there's sufficient capacity.

UNDERGROUND STORAGE

Turkey's storage capacity of natural gas and the amount of stock is increasing rapidly. As of September 2018, the total capacity of underground natural gas storage has reached to 3.30 bcm, with a daily send out capacity of 40 mcm/day. With the new investments, the total capacity of Silivri Underground Storage will reach 4.6 bcm, with a daily send out capacity of 75 mcm/day and the total capacity of Tuz Gölü Underground Storage will reach 5.4 bcm, with a daily send out capacity of 80 mcm/day.

Annual regasification capacity

22.4 bcm

Annual LNG import

10.7 bcm

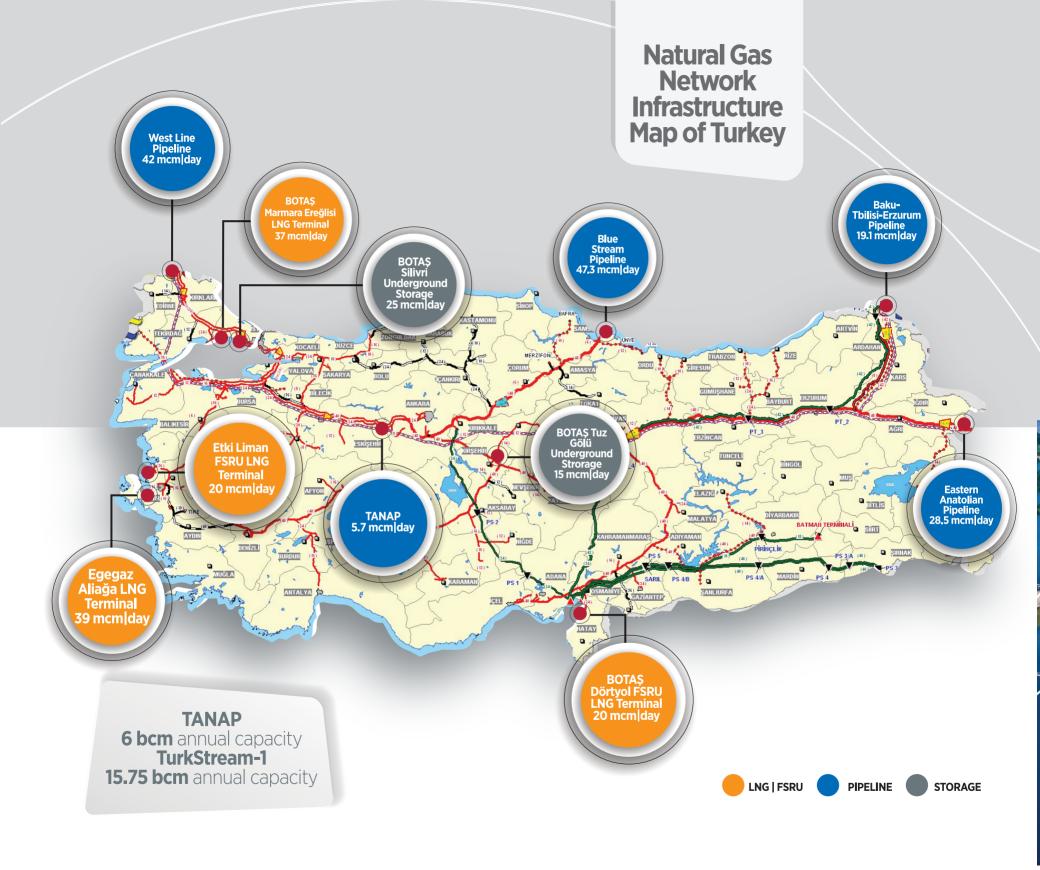
Spare capacity for imports

11.7 bcm

Silivri underground storage capacity to reach

4.6 bcm
Tuz Gölü underground storage capacity to reach

5.4 bcm
Private sector to add 1 bcm
Total 11 bcm
storage capacity by 2023



Investment Potential for Natural Gas Trade in Turkey

Starting from the year 2019 to 2021, natural gas contracts equivalent to a total quantity of 15.6 bcm, which correspond to 30% of the quantity of long term natural gas contracts, will expire. The projections indicate that the demand for natural gas will continue increasing by 2021. Consequently, gas supply over 15.6 bcm will be needed in the Turkish market.





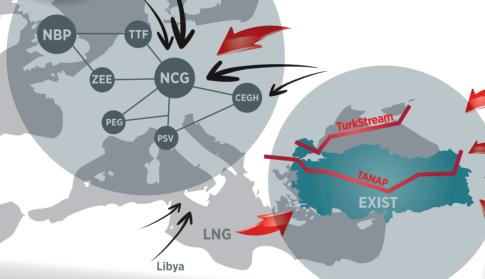
Regional Gas Trade



TURKEY:

an emerging gas trade center between suppliers and consumers

> Eurasian Gas Reserves ~53 tcm



Middle East Gas Reserves ~74 tcm

With the introduction of **TANAP** and **TurkStream**, Turkey will play a key role in ensuring Europe's security of gas supply.

TANAP 1850 km long with 10 bcm annual capacity **TurkStream-2** 700 km long with 15.75 bcm annual capacity

HOW TO INVEST IN NATURAL GAS SECTOR IN TURKEY?

The applicant prepares the documents specified in the By Law on Natural Gas Market Licenses and applies to EMRA.

1

The application documents are reviewed by EMRA in 10 working days.

Application Procedures for Licensing Pipeline* and Spot LNG Import, Export, Wholesale, Storage** and CNG Activities

The applicant deposits the 1% of the license fee to EMRA's account in 10 working days.

2

EMRA sends the license to the applicant and publishes it on its website

6

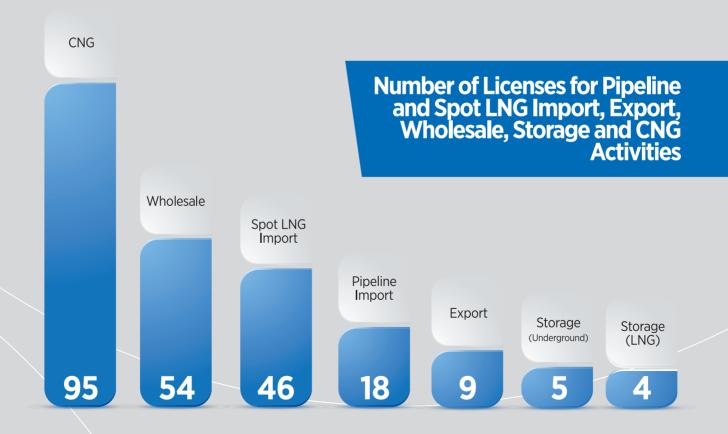
EMRA Board decides to issue the license if the obligations are fulfilled. EMRA Board publishes
a decision on the approval
of the license application and
the applicant is notified
regarding its obligations to
be fulfilled within
90 days.

5

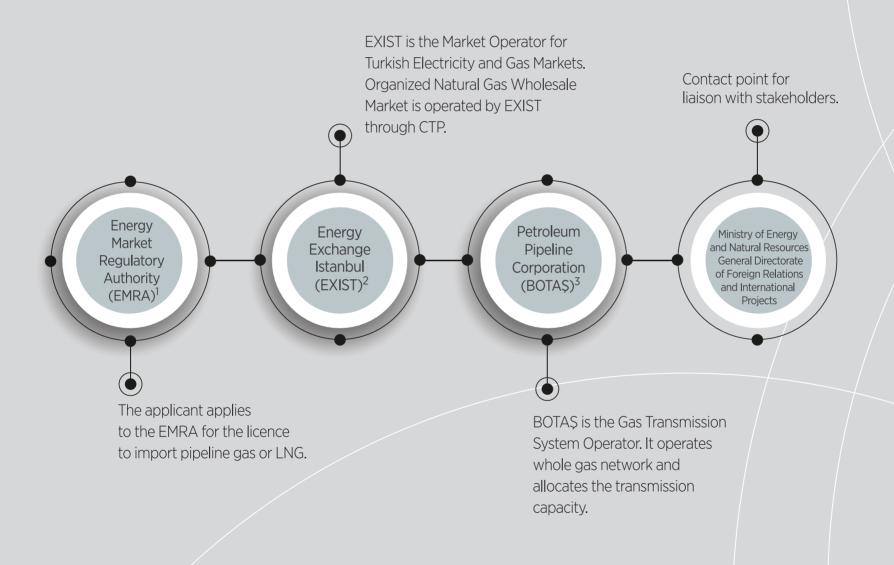
*There are additional procedures for gas imports via pipeline. For import license applications regarding the source countries where BOTA\$ does not have any existing contract, the applications are evaluated and finalized as per the Board Decision dated 13 April 2006 and numbered 725. Regarding the source countries where BOTA\$ has existing contracts, new import contracts can be made for the same amounts upon the termination of existing contracts. However, in case of a domestic shortage of gas, EMRA can decide for issuing additional licenses to private enterprises.

** Unlike in other licenses, EMRA asks for MENR's opinion about the place of the gas storage facility, following Step-3. In case of multiple applications for a certain place, applications are evaluated in accordance with the provisions of the "Regulation on the Selection of Legal Persons Applying for Natural Gas Storage License in the Same Place".

The in-city natural gas distribution service shall be granted to the company which wins the tender announced by EMRA within a license term to be determined by the Authority.



WHO ARE MY STAKEHOLDERS?

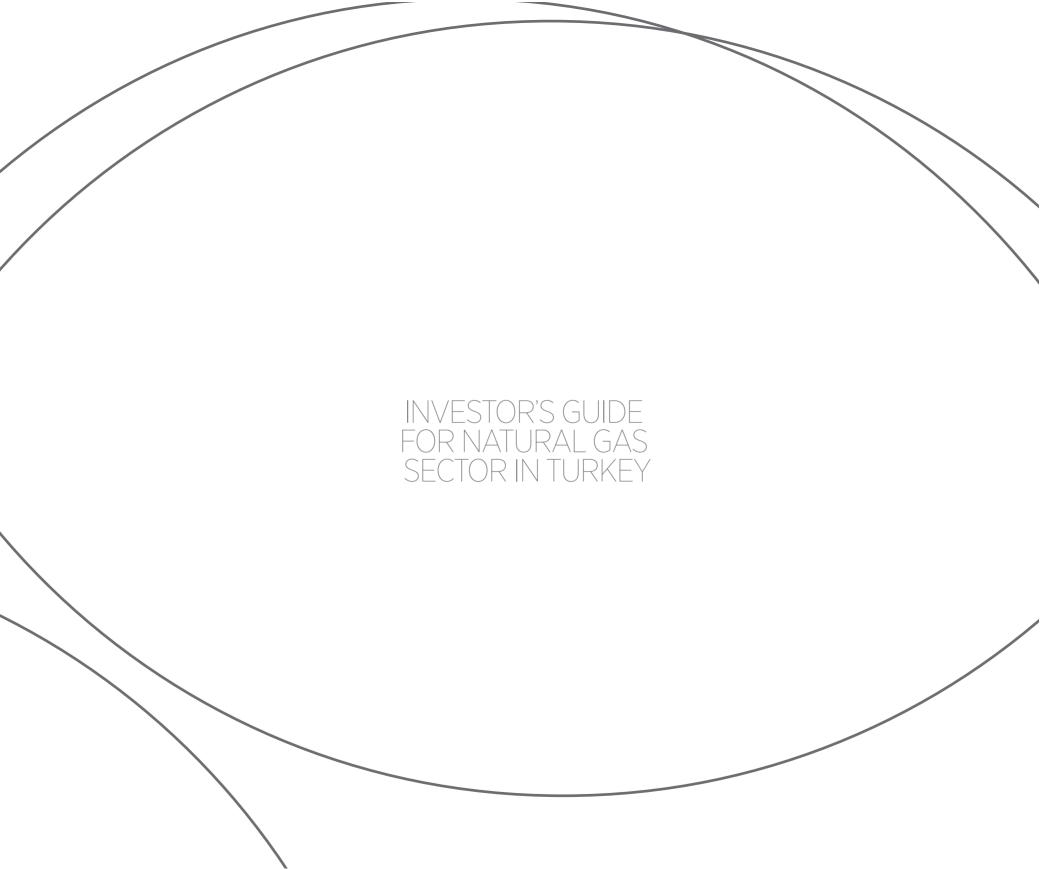


Energy Market Regulatory Auhtority. www.epdk.org.tr/Home/En

²Energy Exchange Istanbul **www.epias.com.tr/en**

³Petroleum Pipeline Corporation. www.botas.gov.tr/





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