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Liberalising natural gas in Turkey

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Over the past twenty-five years, Turkey's demand for natural gas increased from a few million cubic meters to 46,5 billion cubic meters. The growth is due to the expansion of distribution and transmission networks as well as the preference for natural gas-fired plants in power generation. This growth trend is likely to continue for the foreseeable future. As Turkey relies on imports from abroad to meet its gas demand, market growth is linked to a number of policy questions ranging from geopolitical considerations to market liberalisation and infrastructure constraints. Thanks to its strategic location, Turkey also wants to become a regional natural gas trading hub.

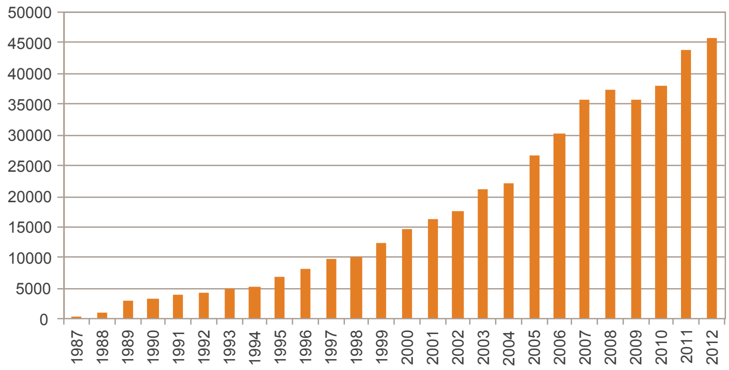
Although some of the most important liberalisation targets in the Natural Gas Market Law No. 4646 have not been met, the Turkish market has grown. Going forward, however, the natural gas market liberalisation will be key to securing new supplies, bringing down supply costs, attracting private infrastructure investment and supporting power market liberalisation efforts.

In this report, we address the three main aspects of the natural gas market, namely the questions of supply security, market liberalization and infrastructure constraints.

Growing demand

Turkey's demand for natural gas has grown exponentially since the late 1980's, when Turkey imported a few billion cubic meters a year. Annual imports have grown to reach 45,9 bcm in 2012, not only because of the expansion of gas transmission and distribution networks but also due to the increasing share of natural gas in electricity generation. Gas-fired power plants accounted for 43,1% of the power generated in 2012.

Chart 1: Natural Gas Imports and Demand (mcm)

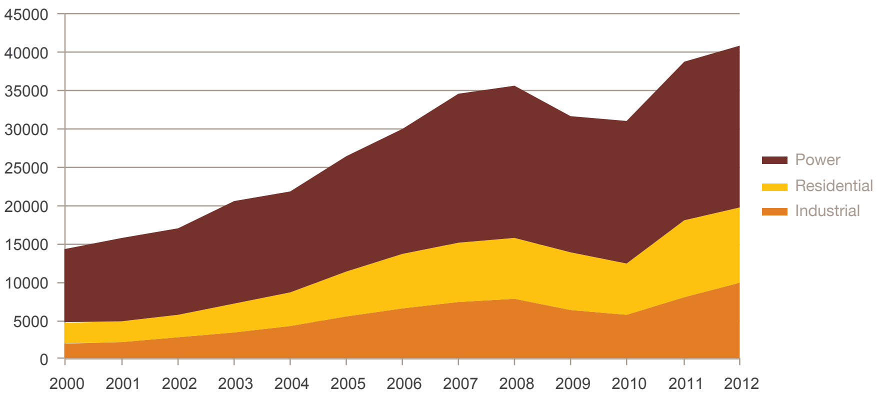


Source: BOTAŞ, EPDK

20.5%

Gas demand increased by a CAGR of 20.5% between 1987 and 2012.

Chart 2: Profile of gas consumption (Based on BOTAŞ sales alone - mcm)

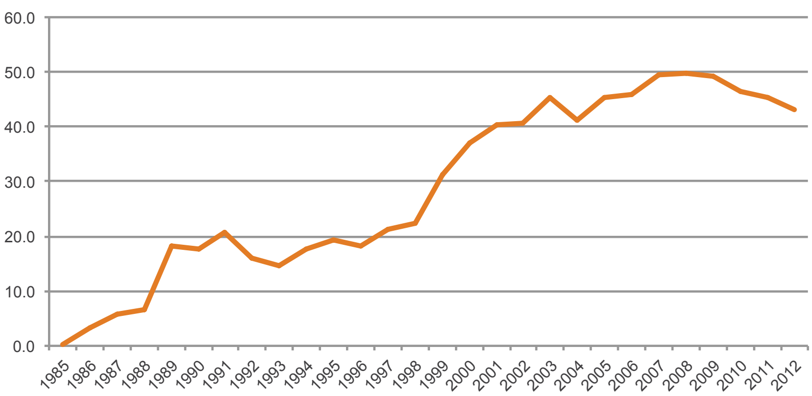


Source: BOTAŞ

51.6%

In 2012, power generation constituted 51.6% of national gas demand, based on BOTAS sales alone.

Chart 3: Share of gas-fired generation in overall power generation (%)



Source: TEIAS, EÜAŞ

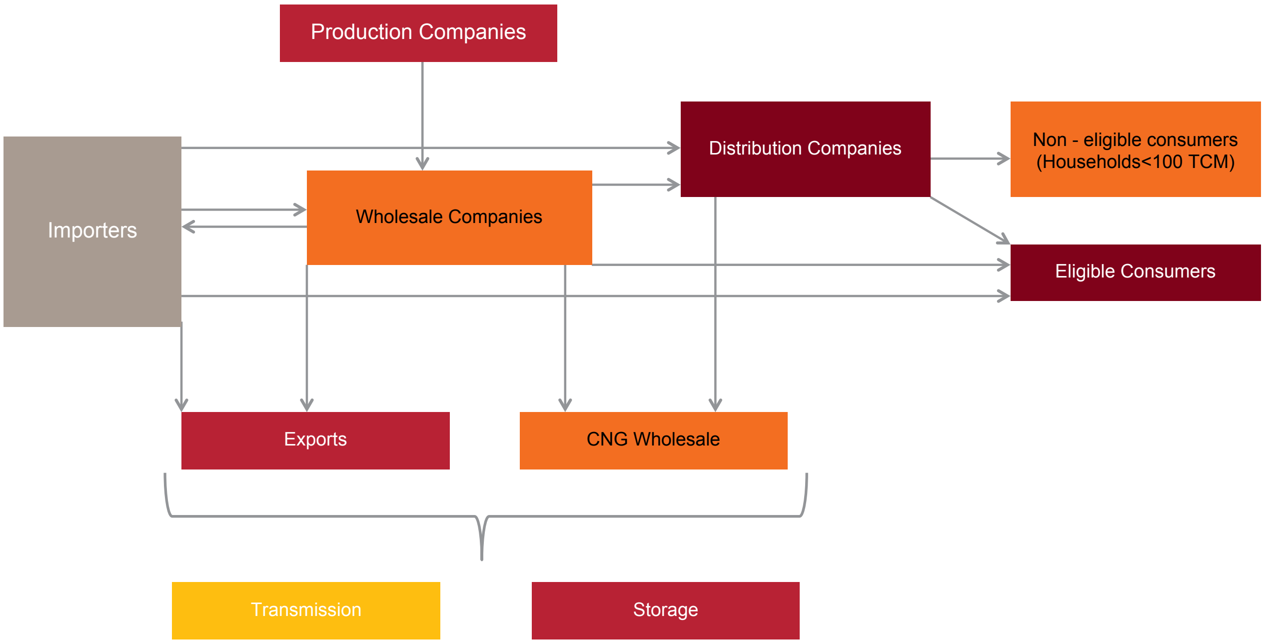
43.1%

Natural gas-fired power plants generated 43.1% of total power output in 2012.

Supply security

But how will Turkey meet its rising demand for gas? As Turkey's natural gas production is very small, Turkey has to meet almost all of its gas needs with imports.

Figure 1: Natural gas market value chain



Petroleum Pipeline Corporation (BOTAŞ,) Turkey's state-owned gas trade and transmission company, traditionally makes most of its gas imports via its long-term contracts with Russia, Iran, Azerbaijan, Algeria and Nigeria.

While the imports from Azerbaijan and the liberalisation of the spot LNG import regime have slightly reduced Turkey's dependency on Russian gas, the share of Russian gas exports in the Turkish supply mix is still very high at 57.7%. Private players are also buying gas from Russia now following the transfer of 10-bcm worth of contracts from BOTAŞ to the private players.

Azerbaijan, however, is an important gas supplier for Turkey. Once the Transanatolian Pipeline (TANAP) is complete Turkey will start to buy an extra 6 bcm from the second phase of the Shah Deniz field. We should see completion of this project towards the end of this decade as part of the Southern Gas Corridor. An additional 10 bcm from the Shah Deniz field is allocated to the European gas market.

On June 28 2013 the Shah Deniz consortium picked the Trans Adriatic Pipeline (TAP) over the Nabucco West pipeline to deliver its gas to Europe. On September 19, 2013 they concluded 25-year sales agreements with nine European companies and on December 17, 2013 the final investment decision was taken.

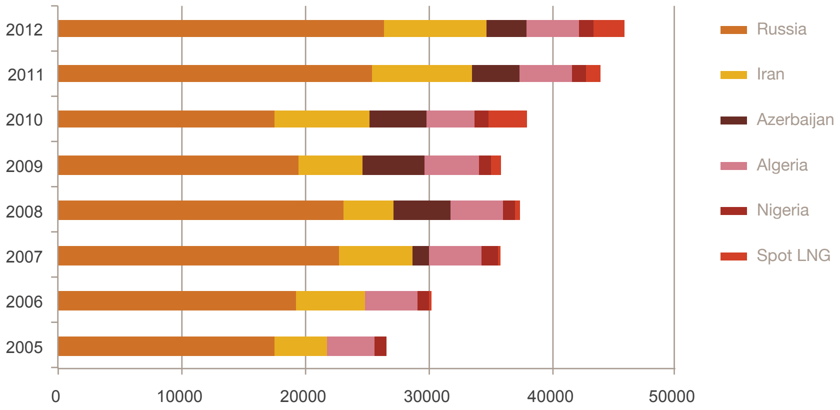
Although the estimated cost for the construction of TANAP has been revised up from $8 billion to a reported $14 billion and low gas demand in Europe has made it difficult to conclude new long-term contracts with European utilities, the Southern Gas Corridor will go forward. The route improves supply security in Europe by diversifying supplies away from the traditional suppliers; specifically Russia and the North African countries of Algeria, Libya and Egypt. The Southern Gas Corridor's potential is not limited to Azeri gas, as it may also transport new supplies from the Eastern Mediterranean, Turkmenistan and Iraq in the future. The diversity of potential suppliers and the possibility to expand volumes also have positive implications for Turkey's supply security.

For Turkey, Azerbaijan is not the only alternative. At the beginning of 2013 BOTAŞ renewed its LNG contract with Algeria for ten more years making up 8.9% of supply in 2012. US sanctions on Iran have made trade with this country more difficult, although the situation may ease if Iran's relations with the West improve following Hassan Rouhani's election as the new president of Iran.

Another potential supplier of gas could be the Kurdish Regional Government (KRG). According to a Financial Times report dated 30 July 2013, Genel Energy has increased its estimates on the size of the gas reserves in the region and Turkey could start importing up to 10 bcm of gas annually from the KRG. And, LNG imports from Qatar are expected to rise going forward, despite the ever increasing prices due to the growing supply to the Asia Pacific.

Following the recent improvement in the Turkish-Israeli relationship, there were suggestions that Israel may export gas to Turkey from its offshore gas fields and a pipeline could be built for this purpose. But it may be too early to count Israel among potential gas suppliers for Turkey, as the two countries have failed to build sustainable diplomatic ties so far.

Chart 4: Who supplies Turkey's gas? (mcm)



Source: EPDK

Regulatory landscape

The problem of supply security is closely connected with the liberalisation of the natural gas market and the need for infrastructure investments to eliminate constraints. The most obvious obstacle that prevents private players from making new import arrangements is the provision in Natural Gas Market Law No. 4646, which does not allow private companies to import pipeline gas from supplier countries that already have a supply agreement with BOTAŞ. Contract transfers by BOTAŞ is the only exception.

More generally, the enforcement of cost-based pricing for BOTAŞ and the establishment of a natural gas spot market would provide a competitive market for the private players.

The expansion of the natural gas transmission network and the construction of new storage facilities and LNG terminals are necessary to accommodate increasing amounts of gas in the system. Importers, wholesale companies and suppliers of last resort need access to sufficient storage capacity to meet their storage obligations for supply security purposes. Expected to provide a more viable market, the draft amendments to the Law No. 4646 include the following requirements:

- Importers should make the necessary arrangements with the storage companies to obtain sufficient capacity to store 10% of their imports.
- The supplier (i.e. importer or wholesaler) is required to guarantee gas supply for the duration of the supply contract. The regulator may also oblige the supplier company to have a sufficient number of interruptible customers in the customer base to help meet this requirement. This is a controversial provision, which spares the distribution company from the risk of seasonal-demand fluctuations and instead increases the supplier's exposure to it.
- Wholesale suppliers to distribution companies and suppliers of last resort are required to have the storage capabilities to meet seasonal increases in demand. Suppliers of last resort will be determined by the EPDK based on their storage/ LNG import capabilities and existing supply commitments.

Market liberalization

The widespread effects of the natural gas market on the energy markets and the overall economy make liberalisation a vital (and political) issue.

As previously discussed, Natural Gas Market Law No. 4646 and other regulations brought important liberalisation targets to the Turkish market over the last decade, but most of these targets were not met. Here is an overview of important liberalisation targets and their outcomes:

- **Unbundling of BOTAŞ and incorporation of an autonomous Transmission System Operator (TSO):** Law No. 4646 required that the wholesale, transmission and storage businesses of BOTAŞ be legally unbundled, and an autonomous TSO would own and operate the transmission network. Third-party access to the transmission network and the transmission tariff would then be regulated. "The Principles for BOTAŞ Transmission Network Operation Regulations" (ŞİD) went into effect in 2004 and in 2007 a private wholesale company became the first "shipper." The number of shippers increased with the 2008 amendments to ŞİD which allowed the trading of gas among shippers. However, no unbundling has taken place yet. Draft amendments to the Law No. 4646 includes a 1/1/2015 deadline for the unbundling of BOTAŞ into three separate legal entities for its transmission, storage and trade activities.

- **Increase in import competition:** Law No. 4646 aims at limiting BOTAŞ' gas imports to 20% of total consumption via contract and volume transfers to private companies. But BOTAŞ made 92,25% of all gas imports and 91% of overall gas sales in 2012. Tables 1 and 2 show us that private companies now hold contracts with Gazprom to import 10 bcm, but they have not been importing the full contracted amount.

  The provision that prohibits private investors from importing pipeline gas from countries which already have a supply agreement with BOTAŞ has been eliminated in the draft amendments. Another issue is the obligation to receive distinct import licenses for each import contract and a separate export license if the company wishes to re-export some of its supplies. In our opinion, companies should be allowed to engage in gas imports and exports with one license and without any limitation regarding the source and route of the supplies.

Table 1:
Contract Transfers to the Private Sector

Company	Amount (mcm/year)
Enerco Enerji San. ve Tic. A.Ş.	2500
Bosphorus Gaz Corp. A.Ş.	750
Avrasya Gaz A.Ş.	500
Shell Enerji A.Ş.	250
TOTAL	***4000***

Table 2:
New contracts with the Private Sector

Company	Amount (mcm/year)
Akfel Gaz San. ve Tic. A.Ş.	2250
Bosphorus Gaz Corp. A.Ş.	1750
Batı Hattı A.Ş.	1000
Kibar Enerji Dağıtım San. A.Ş.	1000
TOTAL	***6000***

- **Competition between wholesale suppliers:** Law No. 4646 requires distribution companies to buy only up to 50% of their natural gas needs from one supplier. This provision was not implemented due to BOTAŞ sustained dominance in the market, as explained above.

- **Cost-Based Pricing for BOTAŞ:** Taner Yildiz, the Minister of Energy and Natural Resources, stated that Turkey has lower end-user gas prices than the 27 European Union member states. This is thanks to subsidized pricing. In 2008, BOTAŞ was included in the Cost-Based Pricing Mechanism for State-Owned Enterprises to determine its wholesale prices for distribution companies and eligible consumers. This had required BOTAŞ to update its tariff every month by factoring in variables such as the import prices and TL/USD parity. The company was later exempted from the mechanism, and since then it has been charging subsidized prices to distribution companies and eligible consumers, including gas-fired IPPs. (The gas prices for power plants in the Build-Operate and Build-Operate-Transfer schemes and state-owned power plants remain unsubsidized.) Due to its dominant position in the market, BOTAŞ' tariff for distribution companies and eligible consumers are taken as benchmark in the pricing by the private wholesale companies as well. As such, BOTAŞ pricing policy has not only distorted competition, but has also affected its own financial position, leading to questions about its sustainability. The burden of susbidies on the market as well as the company itself is likely to have grown in the context of the latest USD appreciation.

- **Eligible consumer limit:** The eligible consumer limit, i.e. the consumption threshold over which a customer can pick its supplier, has been determined as zero for all consumers except households in 2014, for whom the 100 tcm/year limit applies. Tendered inner-city distribution companies enjoy an eligible consumer limit of 15 mcm/year for the first five years of their operation, as they charge a higher distribution fee from ineligible consumers. And, Ankara's recently privatized inner-city distribution network Baskent Gaz has a special eligible consumer limit of 800 tcm until August 2017.

- **Establishment of a Natural Gas Spot Market:** According to the new Electricity Market Law, a new Energy Markets Operation Company (EPİAŞ) will be established to operate day-ahead and intraday power markets. Influenced by the developments in the natural gas market directly, power generation companies also demand a spot natural gas market to be established under EPİAŞ. This would provide them and potential investors with the reliable price signals and financial products they need for feasibility studies and risk management.

  In fact, plans towards establishing a gas spot market and derivatives markets are already underway. According to the draft amendments to Law No. 4646, EPİAŞ will operate the spot natural gas market and Borsa İstanbul will operate the markets, where the standardized gas contracts and derivatives products will be traded. BOTAŞ is expected to take a 15% shareholding in EPİAŞ once the spot market in natural gas is established.

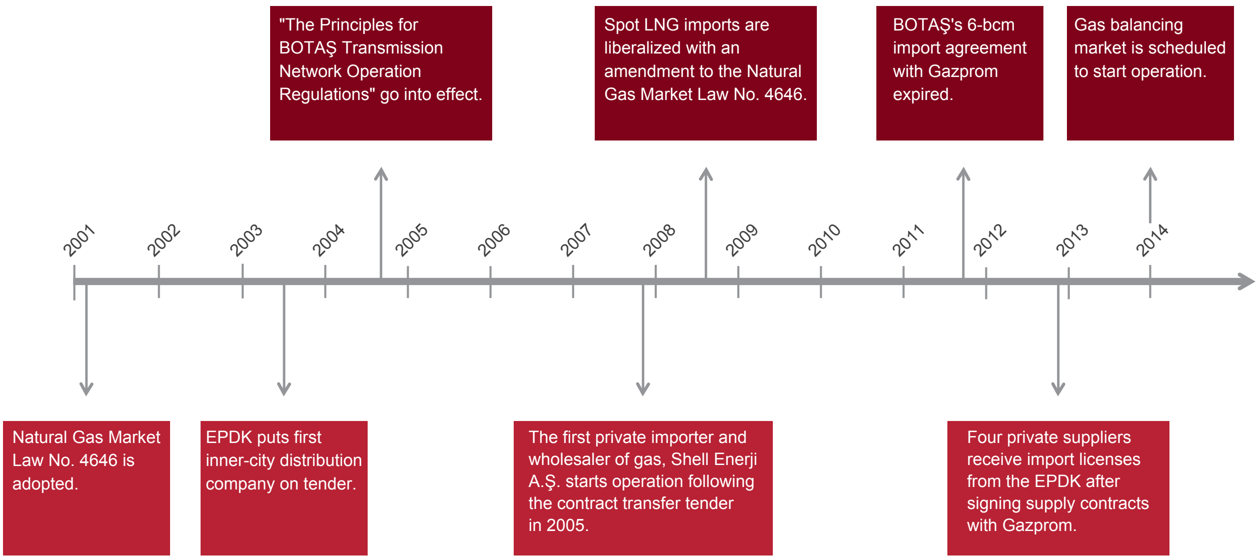
  The amendments to the ŞİD are drawn up to start a market for the trading of balancing gas. We see these amendments as a positive step forward, but the Electronic Bulletin Board software, which BOTAŞ uses to monitor capacity allocations, gas flows, gas trade, congestions and cuts in the system, is reportedly not ready for this purpose.

  The experience with gas markets in Europe gives us reason to believe that a liberal gas market would give Turkey more clout in its negotiations with its suppliers. In Europe, the establishment of spot markets and gas hubs enabled gas trade in the open market and the formation of relatively low spot market prices. This, in turn, led European utilities to successfully renegotiate the terms of their long-term contracts with large suppliers such as Gazprom and Statoil as well as suppliers from Libya and Qatar, or start arbitration proceedings. It is important to note that the contract prices of Gazprom and Statoil depend on the country, the buyer and the openness of the market. Gazprom tends to charge higher prices to south eastern European countries, which are almost fully dependent on Russian gas, whereas Statoil has been more willing to restructure its contracts in more liberal markets, such as the UK and western European countries.

In 2012, 43% of total gas sold was at prices linked to spot market prices. The remaining 57% was sold at oil-linked prices. As long-term contracts with oil-linked pricing expire and new suppliers such as Azerbaijan, the US and Mozambique enter the market, European utilities will have greater leverage over the pricing in their long-term contracts.

- **Third-Party Access:** The terms and conditions for access to BOTAŞ and Egegaz LNG import terminals were published in 2010, but a more effective third-party access regime is required for potential private investments in transmission, storage and LNG terminals to go forward. However, no clear exemptions and access rules have been specified in the draft amendments to Law No. 4646. Instead, the draft provisions require all storage capacity to be made available to third-parties on an impartial and equal basis. There is no equivalent requirement for LNG terminals. LNG terminal tariffs will be set freely based on the terms and conditions published by the EPDK, whereas the storage tariffs will be determined according to the service costs, amortisation of investment cost and the reasonable rate of return to be announced by the EPDK.

Figure 2: Liberalisation timeline in the Turkish natural gas market



Infrastructure Constraints

Investments into the transmission network, as well as storage and LNG terminal facilities are vital to ensure supply security. Turkish Petroleum Corporation (TPAO) and BOTAŞ storage facilities have a total capacity of 4.1 bcm. This corresponds to less than 10% of Turkey's annual imports. BOTAŞ and Egegaz LNG terminals have a total capacity of 535 tcm of LNG. Gas wholesale companies are unable to fulfill their storage requirements under the Natural Gas Market Law due to the absence of sufficient storage capacity. Gas supply cuts in early 2012 and late 2013, which led to power cuts and unprecedented hikes in power prices, were exacerbated by transmission bottlenecks. To mitigate any recurrence, BOTAŞ is currently making new investments in loop lines and compression stations to increase transmission capacity. And also, additional storage capacity is under construction under the Salt Lake in central Anatolia. As explained in the previous section, the introduction of an effective third-party access regime, which takes into consideration both investment and liberalisation objectives, needs to be introduced immediately to attract private investment in gas infrastructure.

Table 3: Storage Facilities

Company	License duration	Storage facility	Storage Capacity
BOTAŞ (LNG)	10 years from 04.04.2003	Marmara Ereğlisi/Tekirdağ	255 000 m^3 LNG
Egegaz A.Ş (LNG)	30 years from 04.04.2003	Aliağa/İzmir	280 000 m^3 LNG
TPAO (Gas)	30 years from 18.04.2003	Silivri/İstanbul	2 661 000 000 m^3
BOTAŞ (Gas)	30 years from 27.06.2007	Sultanhanı/Aksaray	1 500 000 000 m^3

Constructing inner-city gas distribution networks is a good example of how private investment can be drawn to infrastructure projects. Expanding gas distribution to more provinces has led to an increase in industrial and residential natural gas consumption. For the most part, private companies, which bid the lowest distribution fee in the tender for the first eight years of the network's operation, build these.

60 gas distribution companies have been privatised so far and tenders for 2 others are in the works. Distribution companies, which were already active at the time of the adoption of Law No. 4646, were privatized either by their respective municipalities or by the Privatization Administration. Following the transfer of Başkent Gaz to Torunlar Enerji in June 2013, IGDAŞ in Istanbul is the last remaining inner-city distribution company awaiting privatization. One sticking point for the tendered companies is the tariff methodology for the period after the end of first eight years, which was published last year by the EPDK. Investors were not satisfied with the methodology and found the tariffs too low.

Data infrastructure is the final aspect of the infrastructure assets in the natural gas market, and there is room for improvement in this area, too. Distribution companies, eligible consumers and BOTAŞ need to make the necessary investments to ensure the real-time flow of data. Currently the daily time schedules of the electricity market and natural gas market are not harmonized, creating difficulties for participants in the two markets. As explained in the previous section, the Electronic Bulletin Board software has some important shortcomings. The SCADA system, which is established by the inner-city distribution networks to monitor the gas flows in the grid, is not fully operational in some cities, either.

Conclusion

Natural gas market liberalisation is key to ensuring supply security and overcoming infrastructure constraints. Achieving greater market liberalization will require the following policy actions to be taken:

- The provision in the Natural Gas Market Law, which prevents private players from importing pipeline gas from countries that already have a supply agreement with BOTAŞ, should be eliminated.
- BOTAŞ unbundling needs to go forward.
- The reduction of BOTAŞ market share through volume and contract transfers to private companies is vital to market liberalisation.
- Prices in the natural gas market should reflect the costs; cross-subsidisation between customer groups should be prohibited.
- An effective third-party access regime with exemptions should be introduced for private storage and LNG terminal investments.
- A natural gas spot market should be established under EPİAŞ.
- Regulatory constraints and the bureaucratic burden should be eliminated in gas trading. Companies should be allowed to engage in gas imports and exports with one license and without any limitation regarding the source and route of the supplies.

Glossary

BOTAŞ : Petroleum Pipeline Corporation
EPDK : Energy Market Regulatory Authority
EPİAŞ : Energy Markets Operation Company
TANAP : Transanatolian Pipeline
TEİAŞ : Turkish Electricity Transmission Company
TPAO : Turkish Petroleum Corporation
ŞİD : BOTAŞ Transmission Network Operation Regulations

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