MAJOR CHALLENGES TO THE LIBERALIZATION OF THE TURKISH NATURAL GAS MARKET

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PREFACE

The Turkish gas market is one of the most rapidly growing – and is therefore becoming one of the most important – markets in Europe. However, during the 2000s it experienced setbacks in terms of anticipated demand growth and the anticipated development of liberalisation and competition. Plans for rapid liberalisation and reducing the market share of Botas encountered harsh practicalities and legal obligations in relation to long term contracts signed with external suppliers. This paper sets out these problems and fills a gap in the gas literature not simply in relation to recent developments in the Turkish gas market, but also the perils of trying to introduce an unrealistically ambitious timetable for liberalisation in an emerging gas market. This is the OIES the Gas Research Programme's third publication on Europe's major gas markets published this year, following Philip Wright's book on the UK and Heiko Lohmann's study on Germany.

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ABBREVIATIONS AND ACRONYMS

Bcm	: Billion cubic metres
Bcm/annum	: Billion cubic metres per annum
Bosphorus	: Bosphorus Gas Corporation Inc.
BOTAS	: Petroleum Transmission Company
CCC	: Customer Connection Charge
CTF	: Contract Transfer Fee
Directive 98/30/EC	**:** Council Directive 98/30/EC of the Concerning Common Rules for the Internal Market in Natural Gas dated 21 July1998
Directive 2003/55/EC	**:** Council Directive 2003/55/EC of the Concerning Common Rules for the Internal Market in Natural Gas and Repealing Directive 98/30/EC dated 15 July 2003
DoA	: Deed of Assignment
DSO	: Distribution System Operator
EFET	: European Federation of Energy Traders
EMRA	: Energy Market Regulatory Authority
EU	: European Union
IEA	: International Energy Agency
Mcm/a	: Million cubic meter per annum
Nabucco Company	: Nabucco Company Pipeline Study GmbH
nTPA	: Negotiated Third Party Access
RB	: Regulatory Body
rTPA	: Regulated Third Party Access
TCA	: Turkish Competition Authority
TEIAS	: Electricity Transmission Company
TPAO	**:** Turkish Petroleum Corporation
TSO	**:** Transmission System Operator
$	**:** United States Dollars
2001 Law	: Natural Gas Market Law No.4646 dated 2 May 2001

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

There have been three main areas of concern relating to the Turkish natural gas market in the recent years:

I. Liberalization of the market in order to open it to competition by reducing the monopoly power of the incumbent company BOTAS and to comply with the EU's energy policies;
II. Trying to match the supply including long term take or pay obligations with ever-increasing demand;
III. Reinforcing Turkey's role as an 'energy bridge' between Europe and the resource rich states of the Middle East and the Caspian.

This paper focuses on the liberalization efforts, having first explained recent developments in the structure and ownership of the Turkish gas sector (including transit projects) and outlined recent data on and forecasts of supply & demand.

Since 1987 when gas began to be imported into Turkey, demand has grown very rapidly, reaching 27 Bcm in 2005. Turkey has been almost completely dependent on imports because remaining recoverable reserves were estimated at only 8 Bcm in 2003. Overestimating the pace of demand increase, BOTAS signed eight long-term (from 15 to 30 years) purchase contracts with six gas exporting countries between 1986 and 2001. Although since then the 16 Bcm/annum agreement with Turkmenistan has shown no signs of going ahead, Turkey is still left with contractual obligations of 51.8 Bcm/annum from Russia (three contracts totaling 30 Bcm/annum), Azerbaijan (6.6 Bcm/annum), Iran (10 Bcm/annum), Algeria (4 Bcm/annum) and Nigeria (1.2 Bcm/annum).

Under the Natural Gas Market Law (hereafter referred to as the 2001 Law) passed in May 2001, the objective of harmonizing Turkish natural gas legislation with the EU's energy *acquis* has almost been fully achieved. The basic concepts of Directive 2003/55/EC are all incorporated into the 2001 Law, including unbundling, market opening, and independent regulatory body and third party access. Although the 2001 Law theoretically opened the Turkish gas market to competition, no actual competition has developed. Trading has been hampered by BOTAS' on-going import dominance which has also been preserved by some restrictive provisions of the 2001 Law (for example, prohibiting new importers to supply from the countries with which BOTAS already has import contracts).

Before the enactment of the 2001 Law there were 7 companies established in 6 cities. At the beginning of 2004, the two distribution companies that had been owned by BOTAS were privatized, thus removing BOTAS from the distribution sector. With the tenders for new distribution regions, the total number of distribution regions has reached 49 and is expected to increase. In some of the tenders, the bids were so competitive that companies accepted operating with zero profits for the first eight years in addition to paying an initial lump sum payment to the Energy Market Regulatory Authority (EMRA).

Turkey is keen to develop new gas supply routes to Europe, taking advantage of its pivotal position between that continent and the resource-rich Middle East and Caspian regions. There

are two major cross border pipeline projects: Nabucco pipeline project and Turkey–Greece pipeline project. There has been some scepticism about the Nabucco project, which has a huge planned capacity of 25.5–31 Bcm/annum, on two fundamental grounds – lack of both gas supply and customers. However, the January/February 2006 dispute between Russia and Ukraine, and Europe's desire to diversify its supplies away from Russia, seem to have enhanced the importance of Nabucco. In June 2006, the Energy Commissioner of the EU, Andris Piebalgs, and the energy ministers of the stakeholder countries of Nabucco (Turkey, Bulgaria, Romania, Hungary and Austria) agreed at a ministerial conference in Vienna to accelerate the commercial, regulatory and legal work needed to build the Nabucco gas pipeline in the shortest possible time. The European Union presented a scenario according to which 10–15 percent of its gas demand would come from Nabucco by 2025, and at the end of the conference the Ministers and the EU signed a joint declaration.[2]

The 2001 Law mandated an ambitious gas release programme stating that at least 10 percent of the import market should be opened to new investors each year and requiring that BOTAS' import market share should fall below 20 percent by 2009. However, by 2006 BOTAS has failed to fulfill that obligation since no contract release and no volume release has yet occurred.

By the end of 2004, a gas release programme was initiated which required BOTAS to hand over 6 out of 8 existing contracts – specifically part of the contracts with Russia, Algeria, Nigeria and Iran – to new entrants. The amount of gas to be divested each year (16 Bcm) via the gas release programme corresponded to 60 percent of the demand in 2005. The bidding dates for gas release programme were deferred four times on legal grounds (a new law had to be passed to amend the relevant article of the 2001 Law). The new Law enacted in June 2005 has necessitated separate tenders for contract and volume releases, and required companies to obtain the preliminary consent of the sellers prior to the auction. The tender was announced on September 22 and completed on 30 November 2005.

Factors perceived by new entrants as entry barriers to the gas release programme were:

- confidential clauses in the import contracts
- the requirement for sellers' consent prior to the tender
- ambiguity as to how BOTAS will release its contracted customers
- potential extra costs to companies arising from mandatory gas storage.

In the volume release component of the gas release programme, the first two of those possible barriers will automatically be removed; however the last two concerns still remain to be tackled. Import contracts include strict confidentiality clauses which cannot be disclosed to the companies before the tender. Tenderers who had the chance to examine the BOTAS' contracts therefore had an unfair advantage over those who did not. Suppliers were reluctant to renegotiate contracts with companies that they barely know, when they had already signed contracts with BOTAS which was financially backed by the Turkish Treasury; therefore suppliers did not give the consent to most of the bids. In addition, mandatory storage of 10 percent of the annual import volume is required of importers. The most critical entry barrier

[2] Commissioner Piebalgs Welcomes Agreement to Accelerate Nabucco Gas Pipeline Project, *European Commission Press Release*, 26 June 2006. (http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/842&format=HTML&aged=0&language=EN&guiLanguage=en).

has been BOTAS' 'captive customers'. While aiming to decrease its import share below 20 percent, BOTAS still has contracts with its customers for the delivery of approximately 27 Bcm each year, constituting more than 70 percent of expected demand up to 2009.

Despite the entry barriers, there was real interest in the tender from 40 companies. Mainly because most of the companies could not get consent from the sellers, only four companies – Shell, Bosphorus, Enerco and Avrasya – were able to submit valid offers in the tender. Thus they became eligible to start negotiations to partially take over 4 Bcm/annum of Russia's Turusgaz contract, 25 percent of the amount offered by the contract release.

As soon as the Board of BOTAS approves the allocation of volumes to those four companies, they will start the negotiations with the seller. A further contract release or a volume release process will be initiated by BOTAS to liberalize the remaining contracts immediately after the conclusion of the current contract release process, but with no guarantee of any greater success.

International experience suggests that the time remaining for the completion of the gas release programme to 2009 is too brief to allow for the release of 80 percent of BOTAS' import share. The first phase of the gas release programme aimed for the contract release of 16 Bcm/annum (corresponding to 60 percent of the demand in 3). But it now appears that negotiations between the bidders and Gazprom will start for 4 Bcm/annum, which constitutes only 10.8 percent of the minimum take or pay obligation in 2009. Even if this first phase for 4 Bcm/annum is successfully concluded, this will still leave BOTAS with the obligation of transferring 25.6 Bcm/annum (69.2 percent of minimum take or pay in 2009) to achieve the goal of 80 percent of release by 2009.

No country has so far succeeded in implementing a program of contract release. The Turkish gas release programme is unique and it has proved impossible to achieve such high volume releases in so short a time. The design of the programme was fundamentally flawed, and a number of policy changes and amendments to the 2001 Law will be required to accelerate the liberalization process and the introduction of competition in the Turkish natural gas industry. These changes are summarized below.

Revised Gas Release Programme

There are two possible ways to amend the gas release programme: either the time span for the release of 80 percent of BOTAS' import contracts must be extended beyond 2009, or a less ambitious import share target must be accepted for 2009. Of these two options, the latter seems more reasonable.

The need to decrease the incumbent company's market share below 20 percent (as envisaged in EMRA's regulatory principles) may be overambitious. In EU member states other than UK, none of the former incumbents have an upstream (import and production) market share of less than 40 percent. An import share of 40–45 percent – higher than the unattainable 20 percent but sufficient to prevent any maintenance of monopoly power – would be more reasonable as BOTAS' new import share target for 2009.

In addition, as shown in Table 1, BOTAS is to be divided into legally unbundled companies by 2009 the scheduled completion date for the gas release programme.[3] Thus, despite the proposed increase in import share target, cross subsidization between the competitive (import and trading) and regulated (transmission) activities of BOTAS will be prevented. EMRA can regulate third party access to the transmission system by importers and wholesalers. A network code has already been in force since 2004 and can be amended if the need arises after new companies enter the market.

Table 1: Timetable of Actions Required by the 2001 Law[4]

Actions			2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Enactment of 2001 Law			■												
Preparatory Period			■	■											
Unbundling Requirement	Accounting Unbundling	Distribution Companies[5]	■	■											
		BOTAS	■	■	■										
	Legal Unbundling	BOTAS	■	■	■	■	■	■	■	■	■				
Privatization of BOTAS' Activities[6]												■	■		
GAS RELEASE PROGRAMME				■	■	■	■	■	■	■	■				
Mandatory Storage[7]	Importers												■	■	■
	Wholesalers	For Sales to Eligible Customers											■	■	■
		For Sales to Distributors											▒	▒	■

Amending the Import and Wholesale Threshold of 20 percent

Quantitative provisions to promote competition are abundant in the 2001 Law. The reason behind the 20 percent market share limit in import and wholesale markets is the desire to have a minimum of 5 companies in the gas market. If the threshold provisions of the 2001 Law are to remain, the recommended import share (say, 40–45 percent) for BOTAS by 2009 should be

[3] The title 'BOTAS' will remain with the import company; other companies will have different titles (Temporary Article 2/4).

[4] Timetables for some of the activities set out in the 2001 Law coincide with each other. All BOTAS' activities are targeted to be legally unbundled, and it has to release 80% of its import market share via the gas release programme, by 2009. Then BOTAS is required to privatize its storage and trading activities by 2011, and will only retain its transmission activity (TSO) and an import share of less than 20 percent (which is the market share threshold for import and wholesale companies as well). Mandatory storage of 10 percent of the annual import volume is to be assured by the importers and the wholesalers from 2011 onwards.

[5] This applies to existing distribution companies; new companies in distribution or other segments of the gas market are already required to implement accounting unbundling from their other activities.

[6] BOTAS' storage and trading activities are to be privatized within two years after the completion of legal unbundling (Temporary Article 2/4).

[7] Similar to the importers' requirement, wholesalers have to assure the necessary storage within 5 years after taking the wholesale license (Article 4/4/e/1-2). In case of there not being enough national storage capacity, that limitation can be extended by EMRA (up to 2 years for the sales made to the distribution companies, not restricted for the sales to the eligible customers). Assuming that new importers will be active by 2006 via the gas release programme and new wholesalers will enter to the market as soon as the import competition starts, wholesalers should have enough storage till 2011 and 2013 for the sales made to eligible customers and the distribution companies, respectively.

the threshold for new entrants to the wholesale and import markets, to avoid discrimination among the players. The relevant provisions of the 2001 Law should be amended accordingly and in the event of a company's share exceeding a pre-defined threshold, remedies should be determined in advance.

Release of Customers

Liberalizing the upstream market by means of a gas release programme does not make sense if the customers in the downstream market remain the captive of the incumbent company via long term contracts, and there is not sufficient demand for the new entrants. Despite BOTAS' official aim to reduce its import share below 20 percent, the share of its contracted customers is well above 70 percent of expected demand in 2009.

BOTAS should immediately decide upon and publish a non-discriminatory and transparent methodology for releasing some of its captive customers, before moving further to the next phase of the gas release programme. Potential investors should be aware of how, when and which customers will be released.

Legal Unbundling of BOTAS

To maximize the benefit from liberalization created by the gas release programme, legal unbundling of BOTAS' activities is of crucial importance to increase transparency and eliminate cross subsidies.

Under the established timetable, and assuming no delays, legal unbundling will be concluded by 2009. However a delay in the legal separation of BOTAS' activities would, in turn, cause a delay in the privatization of its storage and trading activities which would restrict competition in those activities. Importers will have difficulty in finding wholesale customers for their gas and in fulfilling the storage obligations.

Because Turkey is inexperienced in gas market liberalization and yet is trying to achieve an unprecedented gas release programme, delays have been very common (for example, the contract release tender has been postponed 4 times). Therefore the process of legal unbundling of BOTAS should be accelerated and concluded by 2009.

Potential Risk of Vertical Integration

Gazprom and its affiliate Bosphorus are already legally unbundled. Nevertheless, Gazprom may decide to invest in the distribution business either by winning a tender or by taking over another distribution company. Or, in the future, the market power of Gazprom in Turkey's upstream (import) gas market might be replaced by other suppliers that are willing to invest in the downstream companies. In either case, the upstream company does not have to be legally unbundled from the distribution company since the 2001 Law does not require this.

Especially when supply conditions are tight, even companies with tiny market shares can have enough market power to discriminate in favour of their affiliates and to increase prices sharply. Ex-ante measures are needed to regulate the market in order to prevent such potential competition distortions. Legal unbundling is only the first step along that path. The European Commission obliges TSOs and DSOs to be legally unbundled from activities other than

transmission and distribution. As shown in Table 1, the 2001 Law obliges companies other than BOTAS to implement only accounting unbundling. To allow DSOs to have effective decision making rights and to prevent possible competition infringements, a provision should be incorporated in the 2001 Law requiring legal unbundling of DSOs from other activities not related to distribution.

Abandoning import restriction

The 2001 Law prevents importers from buying gas from the countries with which BOTAS already has import contracts, whether or not these contracts are active. The objective of that provision is the protection of BOTAS which has long term supply contracts with take or pay obligations. In the event of excess supply, BOTAS may have financial difficulties if it faces competition. But conditions of excess supply are exactly those in which the benefits of competition can be obtained.

In order to foster supply diversification, the import restriction clause in the 2001 Law should be annulled by 2009 at the latest, when estimated demand starts to exceed the minimum take or pay obligation of the supply contracts. After 2009, the difference between the estimated demand and the minimum take or pay volumes increases sharply, thus leaving enough room for BOTAS and new importers.

Transferring Some of BOTAS' Obligations via Volume Release

In the volume release component of the gas release programme, tender terms and procedures should allow BOTAS to transfer contractual financial obligations (specifically take or pay obligations) to the wholesalers in proportion to the volumes for which the latter are assuming responsibility. Otherwise a disproportionate share of the financial risk of the contracts will remain with BOTAS.

Issue of Mandatory Storage

According to the 2001 Law, the construction phase of all of the storage facilities being built by BOTAS will be concluded by 2011, at which time they will be privatized. As shown in Table 1, 2011 is also the date when the storage obligations of the importers and wholesalers will commence. Hence the timetable for importers and wholesalers to comply with the storage obligations seems appropriate. Nevertheless, the issue of how storage requirements will be applied should be clearly explained, and storage activities should be left for the market to resolve in a transparent and non-discriminatory way. By 2011, the issue should be reexamined in the light of security of supply concerns and existing storage facilities in Turkey.

Regulation of Distribution

Distribution is the only part of the Turkish gas market that has been liberalized relatively easily because BOTAS had little involvement in that sector even before the 2001 Law. Very low (sometimes zero) profit margins asked by the investors in the distribution tenders might be an indication either of investors' overestimation of prices at the end of 8 years (when EMRA will be determining the tariffs under a price cap regulation), or of unrealistically optimistic demand growth projections. In either case, companies may have financial problems that will adversely affect the service quality in the distribution regions. That, in turn, may

bring the risk of underinvestment and regulatory capture[8] by the distribution companies. Companies may collectively ask EMRA for price increases, and this will not be difficult for them considering that 7 companies account for all operations in 26 of the 42 new distribution regions (see Table 4 below).

EMRA should set out the regulatory principles very clearly and scrutinize the extent to which the companies fulfill their investment obligations. Moreover, EMRA should also make clear that, by the end of the first 8 years, no company will be granted a price increase, and that failed – that is, bankrupt– companies will be retendered.

[8] Regulatory capture refers to a situation in which a government regulatory agency becomes dominated by the interests of the industry that is oversees.

1 STRUCTURE AND OWNERSHIP OF THE TURKISH NATURAL GAS INDUSTRY

Until the year 2001, when the Natural Gas Market Law (the 2001 Law)[9] was enacted, the incumbent company of Turkey, BOTAS,[10] held monopoly rights to natural gas imports, trade, transmission and storage. In accordance with the 2001 Law, its monopoly rights, other than for 'national transmission lines', were abolished.[11] Although BOTAS has divested all of its distribution interests, it still holds a de facto dominant position in import, trade and transmission activities.

Figure 1: Natural Gas Infrastructure in Turkey

Source: BOTAS (http://www.botas.gov.tr/eng/maps/map1.asp)

9 Natural Gas Market Law No.4646, Official Gazette Date: 2 May 2001, Number: 24390, http://www.epdk.org.tr/english/regulations/natural/law/natural_gas.html

10 BOTAS, Petroleum Transmission Corporation, was founded on 15 August 1974 as an affiliate of Turkish Petroleum Corporation (TPAO) in order to transport crude oil from Iraq to Ceyhan. Since 1987, BOTAS' crude oil pipeline business has been expanded to cover the natural gas transportation and trade activities. BOTAS maintained a monopoly status in natural gas import, transmission (excluding city distribution), trade and tariffs through Statutory Decree No.397 dated 9 February 1990. In 1995, the company was restructured as a State Economic Enterprise obtaining the status of independent company. The 2001 Law annulled Statutory Decree No.397, thus enabling new entries and competition in the natural gas market. (www.botas.gov.tr)

11 'National transmission lines' include existing lines and those under construction or planned.

1.1 Distribution

Distribution activities in the cities are carried out by private companies and municipalities. As indicated in Table 2, before the 2001 Law 7 companies were established in 6 cities: IGDAS and Bahcesehir in Istanbul, EGO in Ankara, IZGAZ in Izmit, AGDAS in Adapazari, ESGAZ in Eskisehir, BURSAGAZ in Bursa. At the beginning of 2004, the two distribution companies that had been owned by BOTAS (BURSAGAZ and ESGAZ) were privatized, thus removing BOTAS from the distribution business. The distribution companies that are owned by municipalities are to be privatized in the near future.[12]

Table 2: Distribution Companies Established Before the 2001 Law

Distribution Region	Company[13]	Date of Operation
Ankara	EGO (Municipality)	1988
Bursa	BURSAGAZ (Calik Group)	1992
Istanbul1	IGDAS (Municipality)	1992
Istanbul2	Bahcesehir (Nurol-Mesa-Suzer-TOKI)	1994
Eskisehir	ESGAZ (Kolin Construction Company)	1996
Izmit	IZGAZ (Municipality)	1996
Adapazari	AGDAS (Erdem Holding)	2002

Source: BOTAS, EMRA and IEA 2005a

Following the 2001 Law, new distribution regions – which cannot be larger than one province – are determined by considering their technical and economical parameters, and tenders for some of them have already been completed by the Energy Market Regulatory Authority (EMRA). As shown in Table 3, auctions were held for 42 new distribution regions, for 39 of which licenses have been issued.

With the new tenders, the number of the distribution regions where both industrial and residential customers consume gas has reached 20 (7 existing and 13 new) and new tenders for 8 further distribution regions are underway. Considering that Turkey is composed of 81 provinces, natural gas usage became much more extensive after the 2001 Law. The cities to which transmission lines are connected and the rest of the cities with no transmission grid connection yet, are planned to have all their gas requirements met by 2008 and 2010, respectively[14].

[12] The 2001 Law stipulates that the distribution regions operated by the municipalities should be privatized three years after the enactment of the law or within three years following the clearance of the external debt backed by the Treasury. The first condition is now redundant since the deadline has passed, so the second will apply (Temporary Article 3/b). On the other hand, municipalities will not withdraw from distribution entirely. Companies holding a distribution license must offer at least 10% of the shares to the municipality in the largest city of the designated distribution region, without payment. The municipality can increase its share up to 20% by paying a negotiated price for the additional of 10%. In cases where the municipality does not ask for the shares or where its shares are not sufficient to appoint a board member, EMRA may ask the distribution company to make arrangements to enable the municipality to be represented in the board of directors and board of auditors, in accordance with the Turkish Commercial Law (Article 4/4/g).

[13] The titles in the parentheses are those of the parent companies.

[14] BOTAS (http://www.botas.gov.tr/eng/naturalgas/ng_city_d.asp)

Table 3: Structure of the Distribution Regions

Before the 2001 Law		7
After the 2001 Law	Tenders Concluded	42
	- Licenses Given	39
	- Industrial and residential customers served gas	13
	- Industrial customers served gas	13
	- Pending Licenses	3
	Planned Tenders	8
Total		57

Source: EMRA (http://www.epdk.org.tr/lisans/dogalgaz/lisansdatabase/ihale.asp)
BOTAS (http://www.botas.gov.tr/eng/naturalgas/ng_city_d.asp)

Distribution tenders have been held in accordance with the 2001 Law and the Distribution Regulation[15], and the terms of the tender (for example, the distribution region, the duration of the license, the eligible customer threshold and the customer connection charge (CCC) for a fixed term) are set by EMRA. The tenders are based on the unit service and amortization charge which is to be fixed for 8 years starting from the effective date of the license. Following the completion of that fixed term, price cap regulation is to be applied. The unit service and amortization charge includes all operating costs and amortization of the infrastructure plus a rate of return per cubic meter gas supplied to the final customer, but not the cost of the gas or the meter. The CCC is intended to cover the cost of the meter and, so far, the maximum possible CCC has been $180 (excluding VAT) for the first 5 years.

The procedure for the tender is as follows:

I. All the offers based on the unit service amortization charge are submitted to EMRA in sealed envelopes. All the offers are opened and the lowest three are publicly announced by EMRA on the tender date.
II. A Dutch auction is then held among the companies that have given the lowest three offers. The price ceiling for the Dutch auction is the lowest of those three offers.
III. The auction proceeds until the bidders stop decreasing the price. The bidder, among the three, that bids the lowest price gets the right to a license.

The lowest bidder applies to EMRA for a license which is issued for 30 years. EMRA obliges the bidder to establish a new company, legally unbundled from the parent company, with an obligation to produce financial documentation within 90 days. Starting from the effective date of the license, the company has the obligation to

- start investment within 6 months,
- ensure gas supply to a specific part of its designated region that will be chosen on its own initiative within 18 months and
- supply gas to all customers in its designated region within 5 years.

[15] Natural Gas Market Distribution and Customer Services Regulation, Official Gazette Date: 3 November 2002, Number: 24925, http://www.epdk.org.tr/english/regulations/natural/distrubution/distribution.pdf

BOTAS has the obligation to connect the distribution region to the transmission grid within a year from the auction date (Article 4/4/c/1).

If the distribution company wishes to extend the duration of the license, it has to get the approval from EMRA one year prior to the expiry date. The unit service and amortization charge and CCC will be reset by EMRA for the new term, starting from the end of the 8 year period. The ownership of the distribution network belongs to the company which has the right to transfer it to another enterprise prior to the expiry of its license term with the consent of EMRA which must ensure that the new company is competent to hold the distribution license and that the unit service and amortization charges are not exceeded.

Distribution companies may own and operate facilities in only two distribution regions. That number, however, can be increased by a decision of EMRA which takes into account issues such as consumption capacity and the number of customers in each region (Article 4/4/g/5). The aim of that provision, to have as many actors as possible, could not be achieved and, as of April 2006, EMRA has allowed one company to operate in as many as 7 distribution regions of the 42 newly auctioned regions. As shown in Table 4, the new distribution regions are dominated by 7 companies which divide 26 out of 42 new distribution regions between them (Anadolu operates in 7 regions, Aksa in 5, Metangaz in 4, Gaznet in 3, Arsan in 3, Zorlu in 2 and Corum in 2). In addition, Kolin, the winner of the Izmir tender, had already been operating in one of the existing distribution regions (Eskisehir). Although the benefits of benchmarking resulting from having a different company in each distribution region are not maximized, the distribution companies have more buying power and should therefore be able to reduce prices to customers. But if it is not regulated well, this situation may just result in higher profits.

Table 4: Distribution Tenders Held After the 2001 Law

Name of the Distribution Region	Name of the Winning Company	Announcement Date of the Tender	Date of the Tender	Unit Service and Amortization Charge* (US Cent/kWh)	License
Kayseri	HSV	18.01.2003	19.06.2003	0.076	Yes
Konya	GAZNET	02.02.2003	31.07.2003	0.064	Yes
Erzurum	PALEN	07.02.2003	13.08.2003	0.046	Yes
Corlu	ARSAN	30.04.2003	28.08.2003	0.036	Yes
Gebze	PALGAZ	02.05.2003	11.09.2003	0.052	Yes
Inegol	KALEN	30.04.2003	18.09.2003	0.061	Yes
Catalca	ANADOLU	30.04.2003	25.09.2003	0.044	Yes
Bandirma	ANADOLU	02.07.2003	09.10.2003	0.174	Yes
Balikesir	AKSA	02.07.2003	16.10.2003	0.112	Yes
Sivas	ANADOLU	02.07.2003	30.10.2003	0.164	Yes
Kutahya	ONGAZ	02.07.2003	06.11.2003	0.124	Yes
Konya-Eregli	GAZNET	26.07.2003	04.12.2003	0.172	Yes
Corum	GAZNET	26.07.2003	18.12.2003	0.079	Yes
Kirikkale-Kirsehir	GUNAY	31.08.2003	08.01.2004	0.158	Yes

Samsun	CENGIZ	07.09.2003	22.01.2004	0.055	Yes
Aksaray	ERS	21.09.2003	12.02.2004	0.236	Yes
Karadeniz Eregli-Duzce	AKSA	29.09.2003	08.04.2004	0.034	Yes
Gemlik	ANADOLU	26.07.2003	22.04.2004	0.239	Yes
Yalova	ARSAN	12.03.2004	01.07.2004	0.031	Yes
Usak	UDAS	11.01.2004	02.12.2004	0.055	Yes
Polatli	DELTA	29.05.2004	13.01.2005	0.230	Yes
Izmir	KOLIN	08.06.2004	27.01.2005	0.012	Yes
Manisa	AKSA	18.06.2004	24.02.2005	0.016	Yes
Nigde-Nevsehir	METANGA Z	10.07.2004	17.03.2005	0.098	Yes
Bilecik-Bolu	AKSA	24.07.2004	09.06.2005	0.016	Yes
Karabuk-Kasta.-Cankiri	CORUM	02.11.2004	16.06.2005	0.069	Yes
Edirne-Kirklareli- Tekirdag	ZORLU	05.09.2004	23.06.2005	0 CCC: 0 $1.84 million**	Yes
Yozgat	CORUM	19.11.2004	30.06.2005	0.176	Yes
Malatya	PEKER	21.08.2004	07.07.2005	0.037	Yes
K.Maras	ARSAN	22.08.2004	14.07.2005	0.009	Yes
Denizli	METANGA Z	05.09.2004	21.07.2005	0 CCC:$149	Yes
Gaziantep-Kilis	ZORLU	11.10.2004	28.07.2005	0 CCC:$30	Yes
Sanliurfa	GÜR-DAG	19.12.2004	09.11.2005	0.095	No
Canakkale	AKSA	02.07.2005	16.12.2005	0.001	No
Isparta-Burdur	SEL-TAN	24.05.2005	23.12.2005	0.015	No
Afyonkarahisar	ANADOLU	11.06.2005	06.01.2006	0 CCC:$174	No
Kars-Ardahan	IS-KA	16.06.2005	20.01.2006	0.279	No
Erzincan	METANGA Z	02.07.2005	27.01.2006	0.089	No
Karaman	TEFIROM	16.07.2005	03.02.2006	0.144	No
Amasya-Tokat	ANADOLU	16.07.2005	10.02.2006	0 CCC: $163	No
Antalya	METANGA Z	16.07.2005	17.02.2006	0 CCC: $5	No
Karacabey- M.Kemalpasa-Susurluk	ANADOLU	11.06.2005	24.02.2006	0.081	No

Source: EMRA, as of April 2006 (http://www.epdk.org.tr/lisans/dogalgaz/lisansdatabase/ihale.asp)

* If not stated, the CCC was $180 in the tenders.

** Additional payment, converted at the Central Bank's exchange rate, 23 June 2005.

The fact that as many as thirteen of the tender winners were originally construction companies suggests that they want to benefit from economies of scope in building the infrastructure. In the tenders, the unit service and amortization charges ranged from zero to $0.279 per kWh depending on the development level, consumption pattern, physical structure of the region and the degree of competition in the bidding process. Regarding the first nine tenders, Mr. Tonge, the head of a consultancy firm, stated that the recent distribution concessions have been awarded on the basis of bids which would give profit margins which will be only 10 percent of those achieved by Turkey's existing distribution companies. According to his analysis, one of the reasons that companies submitted such low bids was that they have used optimistic forecast rates of demand growth; the low margins would have implications for the security of supply to Turkish consumers since suppliers might go out of business if the forecasts are not fulfilled.[16]

In some of the tenders, the bids were so competitive that the companies agreed to operate with zero unit service and amortization charge and accepted less than the recommended CCC. In the Edirne-Kirklareli-Tekirdag tender, the first bidder not only offered zero as unit service and amortization charge and CCC, but also agreed an additional payment of $1.84 million (at exchange rate of 25 June 2005).

Table 5 shows recently announced tenders, expected to take place in 2006.

Table 5: Planned Distribution Tenders

Name of the Distribution Region	Announcement Date of the Tender
Trabzon-Rize	15.11.2005
Elazig	26.11.2005
Gumushane-Bayburt	04.12.2005
Diyarbakir	18.01.2006
Adiyaman	27.01.2006
Seydisehir-Cumra	01.02.2006
Ordu-Giresun	01.02.2006
Van	21.02.2006

Source: EMRA, April 2006
(http://www.epdk.org.tr/lisans/dogalgaz/lisansdatabase/ihaleedilecekler.asp)

1.2 Transmission

According to the 2001 Law (Article 4/4/c), new transmission pipelines can be constructed and owned by private companies, and those transmission lines should be interconnected with the existing ones. However, BOTAS has authority over existing transmission lines, as well as those under construction or planned (Table 6). After the completion of the lines under construction and planned, the gas transmission network is expected to reach to 7,000 km of high-pressure transmission lines.

[16] 'Turkey's Local Distribution Tenders: Too Good to Be True?', *Gas Matters*, November 2003, p.6.

Table 6: Natural Gas Pipelines in Turkey

Pipelines	Length	Diameter	Date of Operation
Existing National Pipelines			
Main Line Malkoçlar–Ankara	842 km	36″–24″	June 1987–August 1988
Pazarcik–Karadeniz Ereğlisi	209 km	24″–16″	January 1996
Bursa–Çan	208 km	24″–8″	July 1996
Çan–Çanakkale	107 km	12″	July 2000
Eastern Anatolia Main Line	1,491 km	48″–40″–16″	December 2001
Karacabey–İzmir	241 km	36″	April 2002
Samsun–Ankara*	501 km	48″	January 2002
National Pipelines Under Construction			
South (Sivas–Mersin)	565 km	40″	
Sivas–Malatya	168 km	40″	
Malatya–Gaziantep	182 km	40″	
Gaziantep–Mersin	215 km	40″	
Konya–İzmir	618 km	40″	
Konya–Isparta	217 km	40″	
Isparta–Nazilli	203 km	40″	
Nazilli–İzmir	198 km	40″	
Planned Pipelines			
Eastern Black Sea Region	308 km	24″-12″	
Karadeniz. Ereğlisi–Bartın	141 km	16″-12″	
Georgia Border–Erzurum	225 km	48″	
Interconnector Turkey–Greece	200 km	36″	

*Domestic part of the Blue Stream Pipeline
Source: IEA 2005a, p.102

The main principles of the network code that has been in force since September 1, 2004 are that capacity is allocated using an entry-exit system, that under conditions of congestion, capacity is allocated proportionally (pro-rata) and that capacity is based on a ‘use it or lose it’ principle (BOTAS, 2004).

1.3 Storage

There are no storage facilities yet[17]. However, there are 4 new projects, of which 2 (Northern Marmara and Degirmenkoy) are under construction and 2 (Salt Lake and Tarsus) are planned, with a total capacity of 7–10 Bcm. These storage facilities are of great importance in avoiding the penalties that may stem from the take or pay contracts and in developing new transit

[17] With a view to importing LNG, a private LNG terminal (Egegaz) with a total capacity of 6 Bcm/annum (the second largest in the world) was constructed in the western part of Turkey (Aliaga, Izmir) in 2002. It was granted a storage license by EMRA in 2003, but is still waiting for its import license. If the legal proceedings can be concluded, BOTAS is keen to use that facility as storage until Egegaz starts importing. (Aliaga Chamber of Commerce, http://www.alto.org.tr/Ayrinti.asp?HaberNo=554)

capacities (IEA, 2005a, p.101). For a country like Turkey, the risk of a severe winter without adequate gas storage would be unacceptably high.

BOTAS signed a Natural Gas and Reproduction Services Agreement with TPAO in July 1999.[18] According to this agreement, starting in 2006 (originally planned for 2005), BOTAS will use two depleted gas fields that belonged to TPAO in the northern part of Marmara Sea (Northern Marmara and Degirmenkoy) as underground storage facilities. Two other projected storage facilities in salt domes will be owned by BOTAS (IEA, 2005b, p.VI.60). The Salt Lake project has been financed by the World Bank[19] and is expected to be completed by 2010 (Taranto, 2005, p.16).

1.4 Transit Projects

Turkey occupies a pivotal position between the resource rich Middle East and Caspian regions, and southern and central Europe where supply will be insufficient to meet future demand. Natural gas demand in Europe is expected to increase at an average annual rate of 1.8 percent to reach 807 Bcm in 2030 (IEA, 2004, p.130). Over the next 20 to 30 years, around 70 percent of the European Union's energy requirements (compared to 50 percent today) will be met by imports – some of them from regions threatened by insecurity (European Commission, 2006). With increased dependence on natural gas, especially in the power generation sector, importing countries have been looking to diversify sources of supply in order to improve security. Europe's main external gas corridors today run either through and from North Africa to Italy and Spain, or from Russia through Ukraine and Belarus to the rest of Europe. Turkey's geographic position is unique; its closeness to the most important gas fields of Central Asia, the Persian Gulf, Iran and Russia has made the country the most attractive gateway for the 'third corridor' of Europe's energy supply (Posch and Grgic 2004, p.2).

Turkey has a unique role as an energy transit route because it controls both a sea lane – the Straits between Europe and Asia – and overland routes to the Mediterranean. While much of Central Asia's energy resources will continue to move through Russia's pipelines to the Black Sea, some will soon flow through lines westward from the Caspian and across Turkey to terminals on its Mediterranean shores (Cohen, 2004).

Turkey is keen to develop new gas supply routes, to increase cooperation among neighboring countries and to stimulate the integration of Turkish and European natural gas markets (IEA, 2005a, p.104). Although there is no transit of gas at present, Turkey has been planning new gas projects to form an East–West energy corridor. With those projects that are underway and planned, Turkey aims to be the gateway for natural gas from the Middle East, Central Asia and the Caspian region. Turkish Government officials have recently been declaring that Turkey plans to be an 'energy hub' in the region.[20]

Recent studies and projections by the world's leading research agencies and energy companies, have held out the prospect that natural gas transported from Caspian and Middle

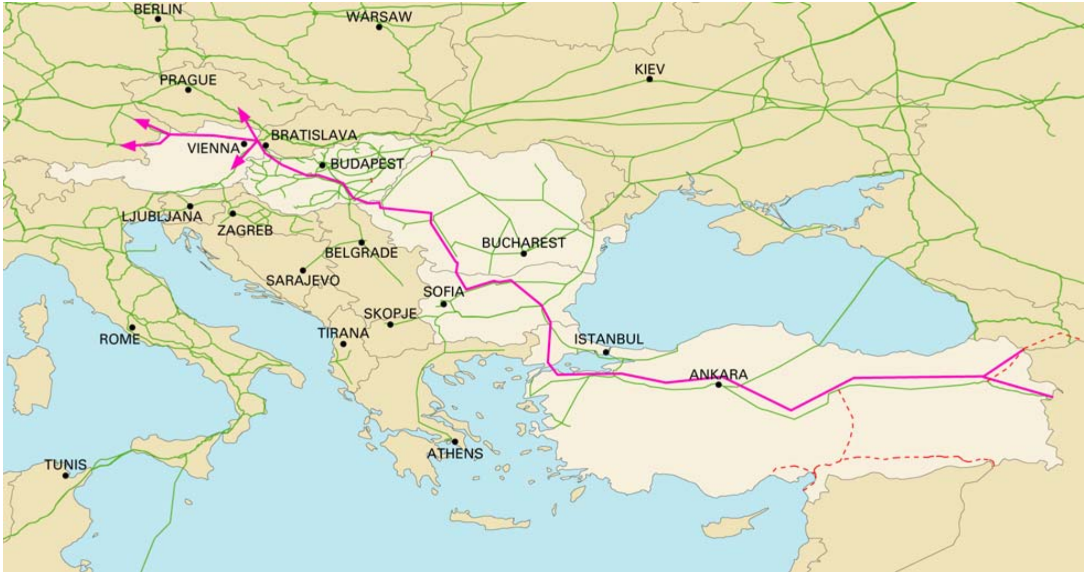
[18] This rather strangely named agreement arises from the concept that stored gas has to be produced again; BOTAS (http://www.botas.gov.tr/raporlar/Botas/projeler.htm)
[19] Gas Sector Development Project of the World Bank, www.worldbank.org.tr
[20] Turkey Sees Itself as Future Energy Hub for Europe, *World Tribune*, 15 June 2005 (http://www.worldtribune.com/worldtribune/05/front2453531.9625.html).

East Region to Europe through Turkey will increase rapidly to reach enormous levels by 2020 (INOGATE, 2004, p.9). Although this expectation now seems highly unlikely because of the delays in both current and planned projects, the Turkish Government is very enthusiastic about achieving that goal eventually. There are two major cross border pipeline projects (the Nabucco and the Turkey–Greece pipeline projects).

1.1.1 Nabucco Gas Pipeline Project[21]

The Nabucco Gas Pipeline (Figure 2) will run from the Georgian/Turkish and the Iranian/Turkish borders to Central Europe via Turkey, Bulgaria, Romania, Hungary and Austria; an distance of about 3,300 km.

Figure 2: Nabucco Gas Pipeline



Source: GTE (2004).

The aim is to supply gas for central and eastern Europe from the Caspian Region and the Middle East, and partially meet the future gas demands of the project partners. The capacity of the pipeline is planned to be 25.5–31 Bcm/annum, around two thirds of this expected to be supplied to Austria for onward export to European countries, thus enabling them to increase supply diversity. In the high case scenario, 16 of 31 Bcm/annum will be supplied to Europe; in the low case scenario, 13.5 of 25.5 Bcm/annum. The rest is the expected offtake in the transit countries.

For the first 2 to 3 years, gas will be supplied via the Turkey's current connection points with Georgia and Iran; later new supply points on the Iraqi and Syrian borders, which will permit access to Syrian, Egyptian and Qatari gas, are planned. The feasibility study of the project was completed at the end of 2004 and the detailed technical design and the environmental assessment study of the project are due to be completed by mid–2006. The first and second

[21] See Gallistl, 2005; Gallistl, 2004; GTE, 2004; and Pipeline and Gas Journal, August 2005.

phases of construction are projected to be completed by 2010 and 2012, respectively. Total investment required for the project is €4.6 billion and operation will start by the end of 2011.

On June 24, 2004, the Nabucco Company Pipeline Study GmbH (Nabucco Company) was established by five companies – BOTAS of Turkey, Bulgargaz EAD of Bulgaria, SNTGN Transgaz SA of Romania, MOL Natural Gas Transmission Co Ltd of Hungary and OMV Gas GmbH of Austria – as a joint venture with a 20 percent share each. Some gas companies are also interested in participating in the joint venture. The Indian company GAIL announced its intention to take a stake in the company by the end of 2005, but was not accepted into the consortium.[22] E.ON has had discussions with a view to taking a stake; the identity of other interested companies have been kept confidential. So far none of the negotiations have been concluded.[23]

There has been scepticism about Nabucco among the players in the market on two fundamental grounds: lack of gas and insufficient customers. The Nabucco Company has to find customers which will commit themselves to buy gas from the project. Supplying 25.5–31 Bcm/annum presents a problem in the short term for a number of reasons: Azerbaijan does not yet have the production capacity to supply these quantities; Iran's infrastructure is insufficient to bring such large volumes to the Turkish border and, in any case, Iran has shown no interest in being a supplier; Turkmenistan does not want to be involved in the project unless the Trans-Caspian pipeline idea (see below) is revived; Iraq will not be a possible exporter in the medium term; and if early volumes come from Russia through now underused Blue Stream pipeline, this will not mean any diversification of supply for Europe.[24] However, this project will provide route diversity since the Ukraine route is problematic after the recent dispute between Russia and Ukraine. Europe's urgent need to diversify its supplies is most likely to translate into significant political support for Nabucco. OMV's CEO, Wolfgang Ruttenstorfer, foresaw that when in June 2005 he said that the primary justification for the line is not demand, but the need to diversify Europe's gas supply away from Russia.[25] The greater the volume of gas supplies delivered to Europe via Turkey, the greater the pressure on Gazprom to operate on a commercial basis (Roberts, 2004, p.18).

1.1.2 Turkey–Greece Natural Gas Pipeline Project

Following meetings in Brussels in July 2000 between Turkey, Greece and the European Union, BOTAS and DEPA of Greece signed a Memorandum of Cooperation on January 18, 2001 in order to transport natural gas produced in the Middle East, Caspian and South Mediterranean countries to Greece via Turkey. Accordingly the technical working group completed some studies, which were then submitted to the European Union, regarding the interconnection of the gas grids of the two countries and the formation of the 'South European Gas Ring'. The Natural Gas Sales and Purchase Contract was signed by BOTAS and DEPA on 23 December 2003 (BOTAS, 2003, p.6–7).[26]

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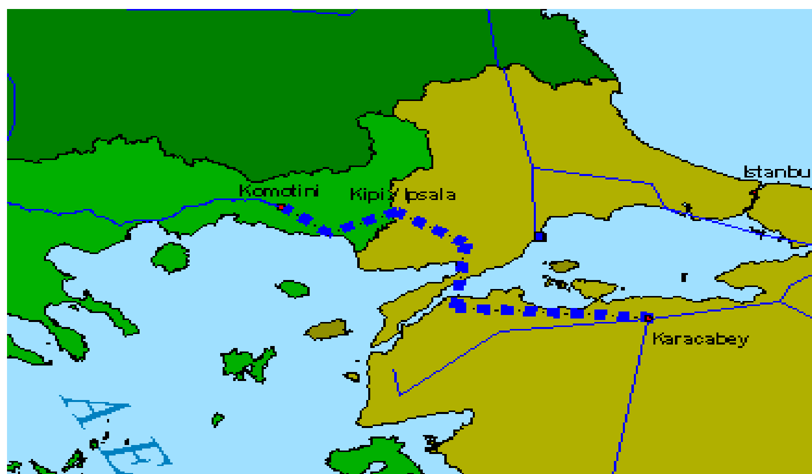
[22] 'Gail to Pick up Equity Participation in Nabucco Natural Gas Project', *MBendi Information for Africa*, August 20, 2005, p.1 (http://www.mbendi.co.za/a_sndmsg/news_view.asp?I=69849&PG=23)
[23] 'Russian Gas and LNG- Diversity within a Pan-European Portfolio', *Gas Matters*, May 2006, pp. 16–21.
[24] 'Turkey's Gas Market Revolution Makes Halting Progress', *Gas Matters*, 28 June 2005, p.15.
[25] 'Nabucco – A Hint of Eastern Promise', *Gas Matters*, 28 June 2005, p.15.
[26] Annual Report of BOTAS, 2003, pp. 6–7.

Figure 3: Turkey–Greece Gas Pipeline



Source: GTE (2004).

The total length of the Turkey–Greece interconnection will be 300 km, of which 209 km will pass through Turkish territory, with 17 km across the Sea of Marmara. Commissioning is envisaged to be in 2006. Transportation volume will start with 0.75 Bcm/annum and is expected to reach to 11 Bcm/annum in 2012 out of which 3 Bcm/annum and 8 Bcm/annum will be delivered to Greece and Italy, respectively.[27]

Although there are questions about the wisdom of contributing further to Italy's surplus, the Turkey–Greece pipeline has the advantage of using the existing and soon-to-be-built infrastructure. Besides this, the volumes can also be met from the second phase of Azerbaijan's Shah Deniz project or from Turkey's surplus.[28]

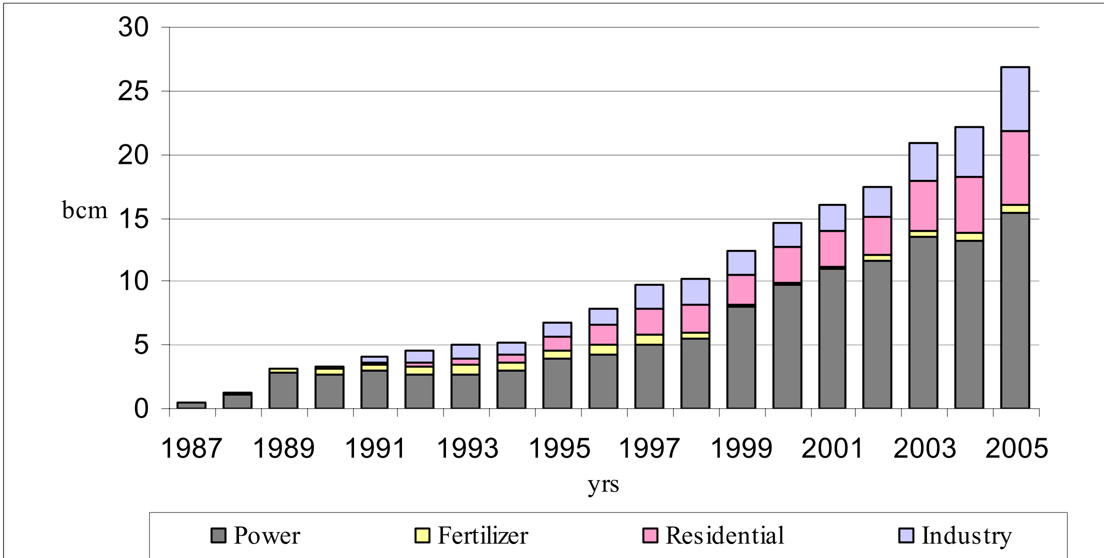
[27] BOTAS (BOTAS (http://www.botas.gov.tr/eng/projects/allprojects/greece.asp)
[28] 'Turkey's Gas Market Revolution Makes Halting Progress', *Gas Matters*, 28 June 2005, p.15.

2 DEMAND AND SUPPLY IN THE TURKISH NATURAL GAS INDUSTRY

2.1 Demand in the Turkish Natural Gas Industry

Natural gas consumption in Turkey started in 1987 in the power sector and has grown rapidly since then. In 2003, gas supply totaled 21.2 Bcm accounting for 23 percent of the TPES (IEA, 2005a, p.13). Gas demand has tripled in the last 10 years with an average annual increase of 14 percent (Figure 4).

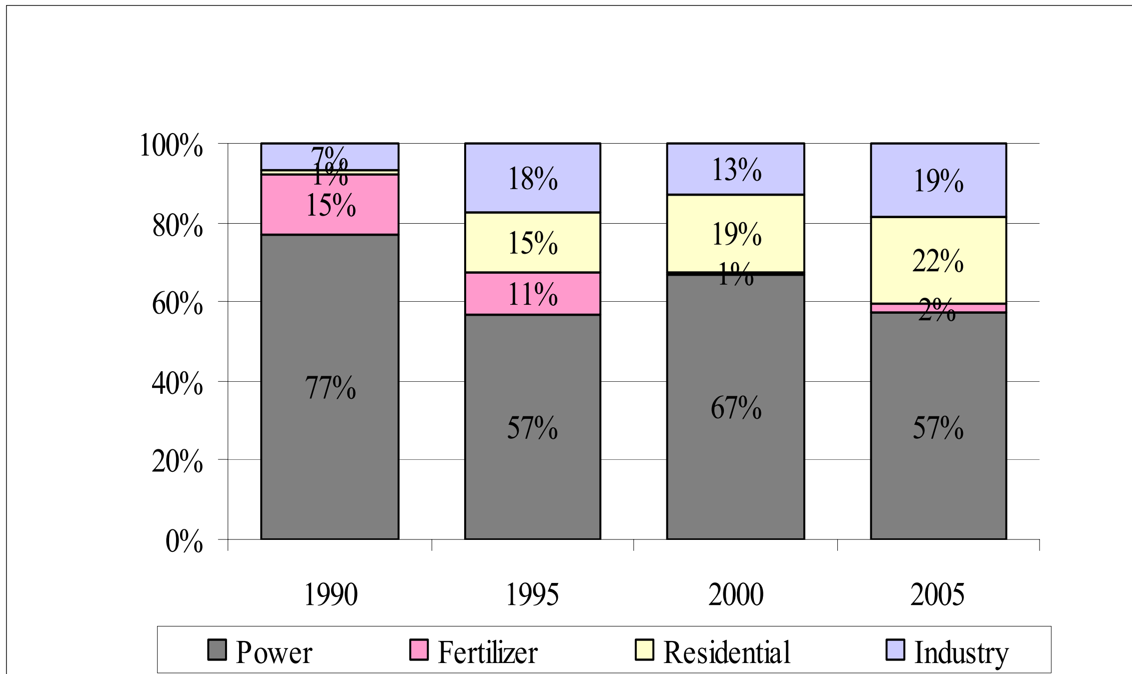
Figure 4: Demand by Sector (1987–2005)



Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

As illustrated in Figure 5, although the power generation market has expanded less than expected in the last 5 years (because of the 2001 financial crisis) gas consumption is still concentrated in the power generation industry which still accounted for 57 percent of gas demand in 2005. The shares of residential and industrial use have increased gradually, while the share of the fertilizer industry fell sharply from 15 percent in 1990 to 1 percent in 2000 and has not recovered.

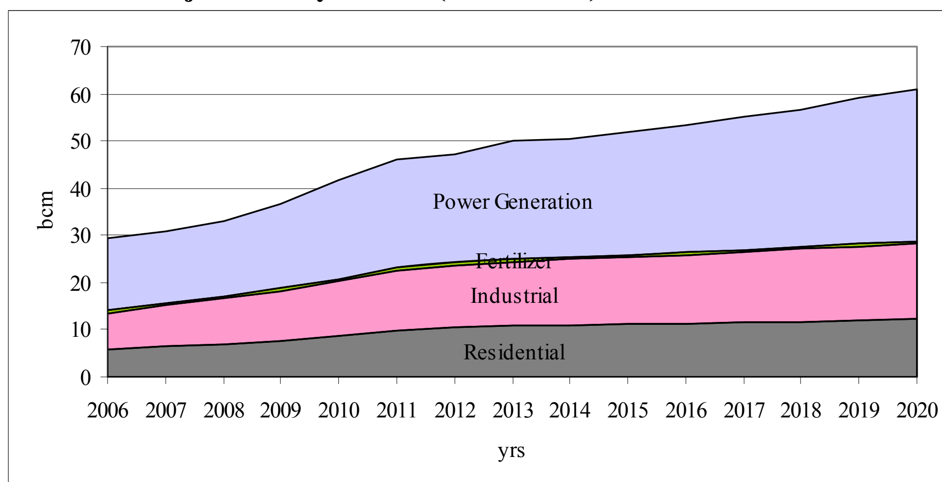
Figure 5: Structure of Gas Consumption in Turkey



Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

Demand projections are carried out by BOTAS in collaboration with the Ministry of Energy. BOTAS projects industrial and residential demand based on several sources of data, for example, population, the level of development, GDP growth and climate change, from both the State Institute of Statistics and the State Planning Organization. Since 2004, a specially created software program from the well-known Middle East Technical University has been used for this purpose. The Ministry of Energy bases its forecasts of power sector demand on data from distribution companies, the incumbent transmission company (TEIAS) and the generation companies.[29]

Figure 6: Demand Projections by Sector (2006–2020)



Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

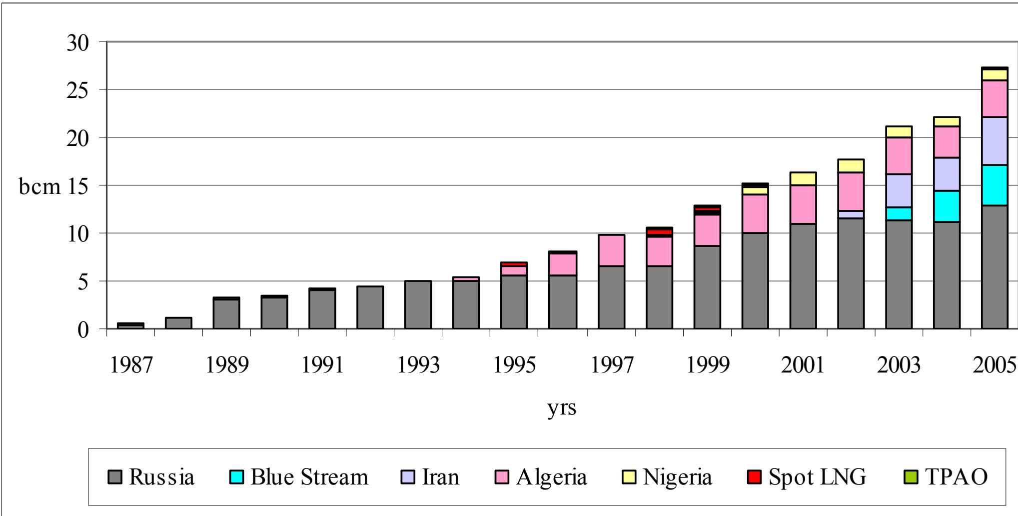
[29] Interview with Umit Kayrak of BOTAS on 6 January 2006

Turkish natural gas demand is projected to increase rapidly (at between 5.6 and 13.6 percent a year depending on the sector) between 2006 and 2011 (Figure 6). After 2011, the pace of increase in demand will slow down (and remain at an average of 3 percent). Consumption of natural gas will double by 2020 in all sectors other than fertilizers.

2.2 Structure of Supply and Contractual Relationships

Turkey's gas reserves in 16 fields are owned by TPAO. Remaining recoverable reserves were estimated at 8 Bcm in 2003 (IEA, 2005a, p.72), compared with demand of 26.7 Bcm in 2005. Thus Turkey is overwhelmingly dependent on gas imports as shown in Figure 7.

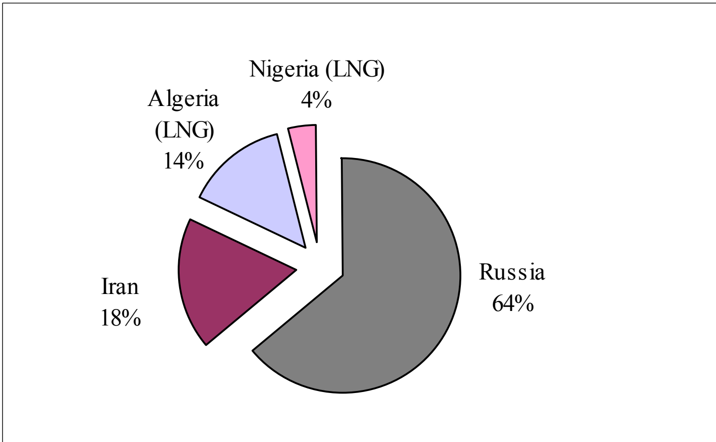
Figure 7: Supply by Country of Origin (1987–2005)



Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

In 2005, as shown in Figure 8, the national shares of supply were Russia 64 percent of which 14.6 percent came through the Blue Stream pipeline (Figure 9), Iran 16 percent, Algeria 14 percent and Nigeria 4 percent. Thus, Turkey purchases almost two thirds of its gas from Russia.

Figure 8: Supply by Country of Origin (2005)



Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

Turkey has signed eight long-term purchase contracts with six gas exporting countries. Six of the contracts are already in operation and one (Azerbaijan) will commence in September 2006. Contracts have been signed for 15 to 30 years to ensure security of supply, extending to 2028. Table 7 summarizes the import contracts signed between 1986 and 2001. In accordance with the 2001 Law (Temporary Article 2/1), BOTAS cannot sign any new contracts until its share of imports falls below 20 percent.

Table 7: BOTAS' Existing Gas Import Contracts

Contracts	Date of Signature	Date of Operation	Length (years)	Expiration Date	Volume (Bcm/annum, plateau)
Russia (West)	1986 (Feb.)	1987 (June)	25	2012	6
Algeria (LNG)	1988 (April)	1994 (Aug)	20	2014	4
Nigeria (LNG)	1995 (Nov.)	1999 (Nov.)	22	2021	1.2
Iran	1996 (Aug.)	2001 (Dec.)	25	2026	10
Russia (Blue Stream)	1997 (Dec.)	2003 (Feb.)	25	2028	16
Russia/Turusgaz (West)	1998 (Feb.)	1998 (March)	23	2021	8
Turkmenistan	1999 (May)		30		16
Azerbaijan	2001 (March)	2006 (Sept)	15	2021	6.6

Source: BOTAS (http://www.botas.gov.tr/eng/naturalgas/ng_buy_ant.asp)

BOTAS was so active in negotiating new natural gas contracts during the period 1995–2001 that it overcommitted itself and, in the process, saturated the future domestic natural gas market – even before the possibilities of coordinating with new Central Asian gas producers, such as Turkmenistan and Kazakhstan, had been fully explored (Ogutcu, 2002, p.4).

In 1999 BOTAS signed an agreement with Turkmenistan for the delivery of 16 Bcm/annum of gas via a pipeline across the Caspian Sea and Azerbaijan with volumes to increase to 30 Bcm/annum, the extra 14 Bcm/annum going on to the Europe.[30] Azerbaijan, with its own major resource of Shah Deniz, developed by a consortium led by BP and Statoil, and enjoying the political support of the United States, held all of the key negotiating cards (Stern, 2005, p.74–75). Turkmenistan's failure to extend the duration of the mandate letter given to the international partners which was due in February 2000, led the international partners (GE Capital and Bechtel) to pull out of the project[31]. Although the 16 Bcm/annum agreement with Turkmenistan has shown no sign of being implemented since then, Turkey is still left with contracts to import 51.8 Bcm/annum: 30 Bcm/annum from Russia, 6.6 from Azerbaijan, 10 from Iran, 4 from Algeria and 1.2 from Nigeria. During US Vice President Cheney's visit to Kazakhstan in May 2006, there was talk about reviving the Trans-Caspian project with Kazakhstan rather than Turkmenistan as the exporter.[32]

[30] 'Turkey's Gas Market Revolution Makes Halting Progress', *Gas Matters*, 28 June 2005, p.15.
[31] BOTAS (http://www.botas.gov.tr/projeler/tumprojeler/hazar.esp)
[32] 'Cheney in Kazakhstan to Boost Gas Pipeline Plan That Bypasses Russia', *AsiaNews*, 5 May 2006 (http://www.asianews.it/view.php?l=en&art=6082)

The Blue Stream pipeline (Figure 9) is a unique gas transmission facility with a length of 1,213 km, of which 373 km is the Black Sea section, for the delivery of 365 Bcm of Russian gas to Turkey over 25 years, bypassing all other countries.[33]

Figure 9: Blue Stream Pipeline

Source: Gazprom (http://www.gazprom.ru/eng/articles/article8898.shtml)

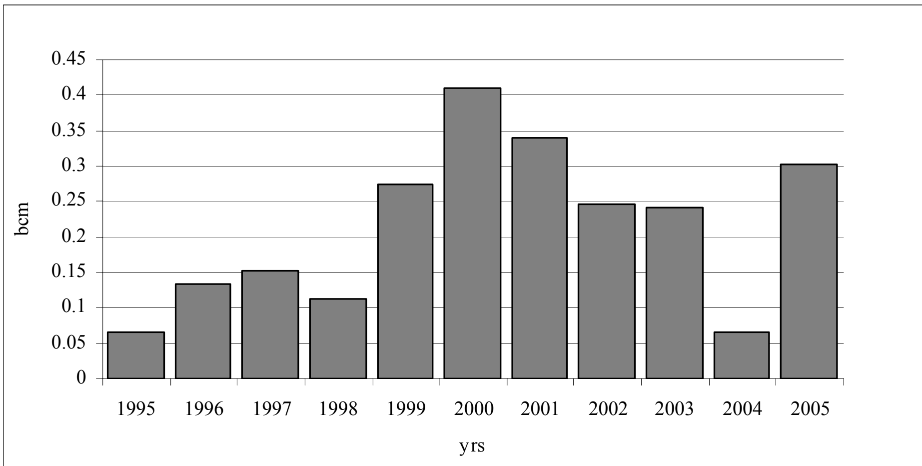
2.3 Comparative Analysis of the Supply and Demand Projections

Figure 10 indicates that there has been excess supply in the Turkish gas market during the last 10 years. In 2000, the supply overhang seemed to be as much as 409 million cubic metres. Those figures would have been greater if renegotiations had not taken place. BOTAS' renegotiations with the sellers have resulted in price decreases over time. After reduced prices had been achieved in the contracts for Russian gas via the Western route, as well as with Iran, in 2003 BOTAS demanded a reduction in the prices and overall volumes of Blue Stream gas because the contracted volumes were more than Turkish demand could support. Instead of going to an international arbitration process, originally considered by Gazprom, the parties managed to reach a settlement which reduced both the price and the take or pay percentage.[34] At present, the take or pay obligation of BOTAS is around 75 percent of contracted volumes on the average.

[33] An Intergovernmental Agreement between Turkey and Russia was signed in December 1997 and a Memorandum of Mutual Understanding between Gazprom and Italian ENI was signed in February 1999 for the realization of the project (http://www.gazprom.ru/eng/articles/article8895.shtml). Commissioning started in the early 2003 and total delivery has reached 8.8 Bcm by the end of 2005 (1.25, 3.24, and 4.32 in 2003, 2004 and 2005, respectively)(http://www.botas.gov.tr/eng/activities/ng_ttt.asp).

[34] 'Blue Stream Flows Again As Dispute Ends', *Gas Matters*, July 2003, p.1, 26–28.

Figure 10: Gas Supply Overhang (1995–2005)



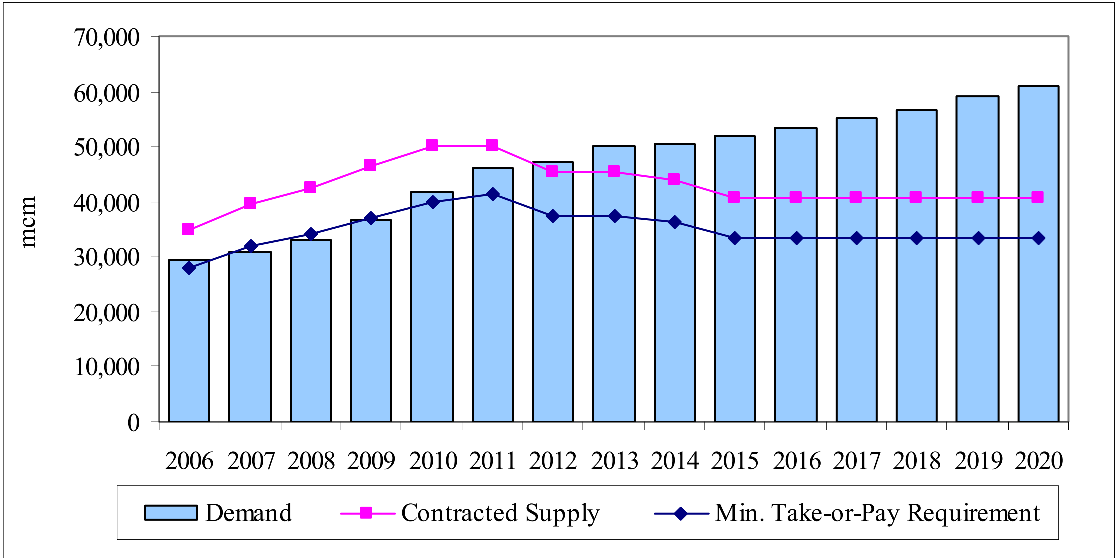
Source: BOTAS (http://www.botas.gov.tr/eng/activities/ng_ttt.asp)

Considering that there are no storage facilities yet and BOTAS has never paid penalties stemming from take or pay obligations[35], there should not have been any major difference between demand and supply. A BOTAS official explained that the demand figures exclude internal company use (the amount used for heating BOTAS' buildings and in compressors); and stated that the difference between the supply and demand figures may arise from the accounting principles (for example, even if LNG shipment was made in December, it might appear in the January accounts of the following year); a certain amount of gas might have been used for linepack; and some gas has also been used as cushion gas in the construction of the storage facilities.[36]

Figure 11 below indicates the comparison of supply and the estimated demand between 2006 and 2020 showing the contracted supply and the minimum take or pay volumes. Minimum take or pay obligations are already very close to estimated demand. Moreover, that figure disregards internal use (220–320 mcm) and the amount that will be exported to Greece starting from 2006 (246 mcm in 2006, 492 in 2007 and 737 afterwards); when those amounts are included, gas demand can exceed take or pay amounts. As long as BOTAS has not overestimated the demand, then there seems to be no risk of excess supply over the coming years, and new gas import contracts can be signed starting from 2009.

[35] Interview with Meltem Ergul of BOTAS on 28 April 2006.
[36] Interview with Fulya Zorlu of BOTAS on 28 April 2006.

Figure 11: Supply (Contracted/Minimum Take or Pay) and Demand (2006–2020)



Source: BOTAS

3 LIBERALISATION, DIVERSIFICATION AND THE GAS RELEASE PROGRAMME

3.1 Liberalization Envisaged by the Natural Gas Market Law, 2001

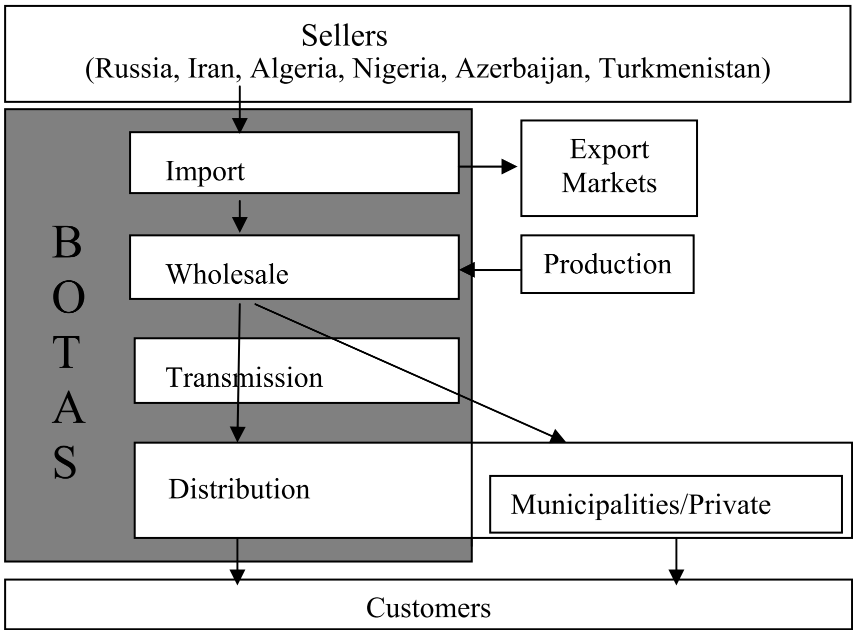
3.1.1 Main Objectives of the 2001 Law

The main objectives of the 2001 Law are the liberalization of the natural gas market, the creation of a financially sound, stable and transparent market, and the establishment of independent regulation. The 2001 Law is a framework law whose provisions also aim at the harmonization of Turkish legislation with the European Union (EU)'s energy acquis.

The 2001 Law entrusted EMRA,[37] already in charge of regulation in electricity market, with the responsibility for natural gas market regulation. Companies have to obtain licenses from EMRA for periods ranging from 10 to 30 years in order to engage in market activities such as transmission, distribution, wholesale trade, import, export and storage. A preparatory period of 12–18 months[38] was foreseen in order to bring the secondary legislation into force and for companies to prepare for the licenses. License applications by companies could not be made to EMRA before the end of the preparatory period.

Before the enactment of the 2001 Law, BOTAS had been vertically integrated and held monopoly rights for all natural gas market activities other than distribution (illustrated in Figure 12).

Figure 12: Natural Gas Market Structure before the 2001 Law



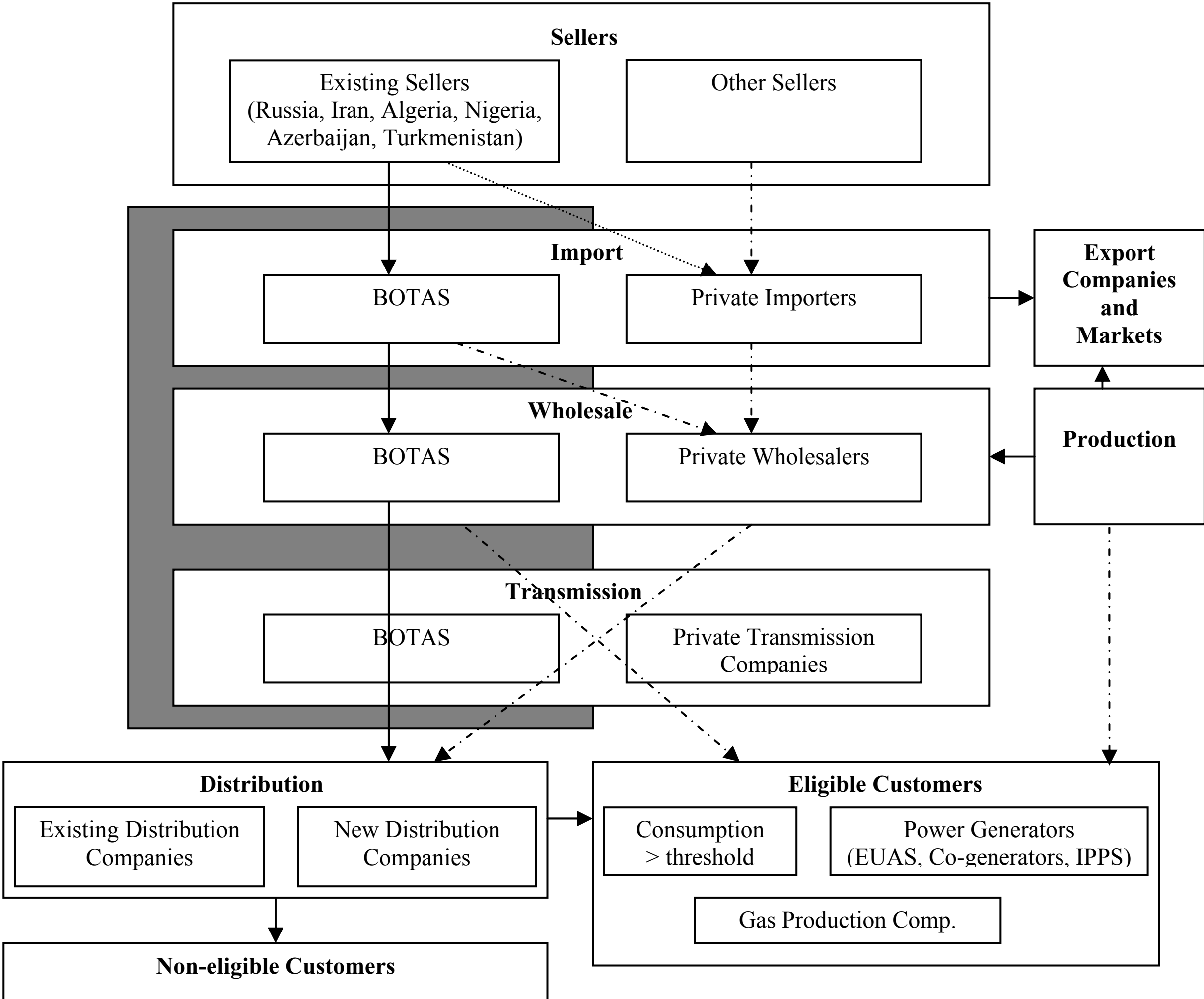
[37] EMRA is the independent regulator responsible for electricity, natural gas and petroleum market regulation. The main responsibility of EMRA in the gas sector is to set up and implement regulatory measures to ensure the establishment of a liberal and competitive natural gas market where all market segments will be open to private companies. It regulates and approves transmission, storage, wholesale and retail tariffs (until competition is achieved), issues licenses and resolves regulatory conflicts.

[38] The preparatory period starts with the effective date of the 2001 Law (2 May 2001) and was originally planned to be 12 months, but could be extended to 18 months by decision of the Council of Ministers. EMRA used maximum extension and so the preparatory period ended on 2 November 2002.

The 2001 Law, aiming to foster competition in gas market, abolished the legal monopoly of BOTAS. Figure 13 reflects the natural gas market structure envisaged by the 2001 Law. However, there are still some restrictions for companies operating in the natural gas market. According to Article 7/2, none of the companies – importers, wholesale and generation companies – may have a market share exceeding 20 percent of the national consumption in the current year as projected by EMRA. There are in addition two important restrictions specific to importers:

- importers cannot import gas from countries from which BOTAS imports, as long as the latter's contracts with those countries are in effect (Temporary Article 2);
- within five years importers must have a contract with storage companies for 10 percent of their annual import volumes, (Article 4/a/3).

Figure 13: Natural Gas Market Structure Envisaged by the 2001 Law[39]



After the adoption of the 2001 Law, private sector interest in the natural gas sector increased and some licenses were issued by EMRA to companies other than BOTAS. However, as

[39] Heavy arrows indicate the current transactions. Dashed arrows are the market transactions identified in the 2001 Law, but not yet operational. Arrows with stars indicates a possible change after the implementation of the gas release programme.

shown in Table 8, BOTAS is still the sole license holder in pipeline transmission, import and export. Besides, none of the wholesale and storage companies have commenced operations. No competition has so far developed since there have been no new gas importers and no choice for consumers other than BOTAS.

Table 8: Number of Licenses Given by EMRA for Each Gas Activity

	State Owned Enterprise	Private Enterprise
Transmission	1 (BOTAS)	13 (LNG Transport)
Distribution	0	39
Wholesale	1 (TPAO)	16
Import	1 (BOTAS)[40]	0
Export	1 (BOTAS)	0
Storage	2 (TPAO & BOTAS)	1

Source: EMRA (http://www.epdk.org.tr/lisans/dogalgaz/yururluk.htm), 26 April 2006.

3.1.2 EU's Main Competition Concerns in its Energy Policies

In 1986, an EU Council of Ministers Resolution[41] aimed at the convergence of member states' policies and set out the EU's initial energy policy objectives to be achieved by 1995. Directive 98/30/EC[42] was the main piece of sector-specific regulation determining common rules for the internal gas market. Directive 2003/55/EC[43] of 26 June 2003 (replacing Directive 98/30/EC) was adopted in order to accelerate the liberalization of national gas markets.

3.1.2.1 Unbundling[44]

Although there are some drawbacks of unbundling (for instance, loss of economies of scope from integrated operation, increased transaction costs and high direct costs of separation because of not making investments jointly), they are outweighed by the benefits which include the elimination of cross subsidization, the stimulation of innovation and efficiency in competitive services, and limiting the need for difficult, costly and only partially effective regulation (OECD, 2006, p.5).

The new regime introduced by Directive 2003/55/EC requires *legal unbundling*[45] of the transmission system operator (TSO) and the distribution system operator (DSO) from other activities not related to transmission and distribution, in order to allow TSO and DSO 'effective decision making rights'. Where the DSO and TSO are part of a vertically integrated undertaking, they should be independent in terms of their organization and decision making from the other activities not related to DSO and TSO (*management unbundling*). If TSO and

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[40] The companies having the import license can automatically engage in wholesale activity without any wholesale license (Article 4/a); therefore BOTAS does not need an additional wholesale license.

[41] Council Resolution of 16 September 1986 on New Community Energy Policy Objectives for 1995 and Convergence of the Policies of the member States, OJ C241/1, 16 September 1986

[42] Council Directive 98/30/EC of the Concerning Common Rules for the Internal Market in Natural Gas, OJ L240/2, 21 July 1998, s. 1, Brussels

[43] Council Directive 2003/55/EC of the Concerning Common Rules for the Internal Market in Natural Gas and repealing Directive 98/30/EC, OJ L176/57, 15 July 2003, Brussels

[44] See European Commission, 2004.

[45] Legal unbundling implies that the two companies will be separate legal entities, but not necessarily under separate ownership.

DSO are combined, the Directive provides an exemption from legal unbundling provided that the accounts are unbundled (*accounting unbundling*) and that the management of the combined operator is functionally unbundled from the other activities of the sector.

There is a possibility of exemptions for DSOs from the requirement of legal and *management* unbundling. DSOs serving less than 100,000 customers (connections) can be exempted from legal and management unbundling (with no time limit). Moreover, exemption from legal unbundling is also possible for the DSOs serving more than 100,000 customers till 1 July 2007 when all of the customers will be eligible.

3.1.2.2 Market Opening (Eligible Customers)

Directive 2003/55/EC accelerated the aim of Directive 98/30/EC in relation to market opening. From 1 July 2004, all non-households are to be free to choose their supplier and, from 1 July 2007, all customers will be eligible customers.

3.1.2.3 Third Party Access

The Directive 2003/55/EC makes regulated third party access (rTPA)[46] mandatory in all member sates from 1 July 2004 onwards (and almost all of the member states have already adopted rTPA). Storage facilities are exempted from that application, and member states may choose between rTPA and negotiated third party access (nTPA).[47]

As shown in Table 9, very few states in 2005 complied with unbundling requirements. The degree of market opening varied greatly among the member states (from 0 to 100 percent). There were still states (Czech Republic and Latvia) with no market opening.

[46] rTPA means that the access conditions are based on published tariffs or are conducted through a non-discriminatory and transparent auction procedure.
[47] nTPA means that the access conditions are freely negotiated between the network operator and the supplier or the eligible customer.

Table 9: Degree of Unbundling and Market Opening in Some of the EU Member States

	Unbundling		Market Opening (%)
	TSO	DSO	
Austria	leg.	leg.	100
Belgium	leg.	leg.	90
Denmark	*own.*	leg.	100
France	leg.	*acc.*	70
Germany	*acc.*	*acc.*	100
Ireland	*man.*	*man.*	86
Italy	leg.	leg.	100
Luxembourg	*man.*	*man.*	72
Netherlands	leg.	leg.	100
Spain	leg.	leg.	100
Sweden	*acc.*	*acc.*	50
UK	own.	own.	100
Estonia	*acc.*	*acc.*	95
Latvia	*acc.*	*acc.*	0
Lithuania	*acc.*	*acc.*	70
Poland	leg.	*acc.*	34
Czech Republic	*none*	*none*	0
Slovakia	*man.*	*man.*	34
Hungary	leg.	*acc.*	69
Slovenia	leg.	*acc.*	91

acc = accounting, man = management, leg = legal, own = ownership
Source: European Commission, 2005

3.1.3 Compliance of the 2001 Law with Directive 2003/55/EC

The objective of harmonizing the Turkish natural gas legislation with the EU's energy policies has almost been fully achieved by the 2001 Law, as summarized in Table 10. The basic concepts of the Directive 2003/55/EC such as unbundling, market opening, independent regulatory body and third party access (TPA) are all incorporated into the 2001 Law.

Table 10: Comparison of Turkey's and the EU's Major Competition Concerns in Natural Gas Industry

	EU (2003/55/EC Directive)	Turkey (2001 Law)
Unbundling	Legal, Management, Accounting	BOTAS: - Accounting unbundling (2003) - Legal unbundling (2009) Private Companies: Accounting Unbundling
TPA	rTPA Storage: rTPA and/or nTPA	rTPA Storage: nTPA
Eligible Customer (Market Openness)	All except households: July 2004 All: July 2007	>1 mcma for old distribution regions >15 mcma for new distribution regions 80% of the market open to competition in 2003
Regulatory Body (RB)	Establishment of an independent RB	EMRA

The 2001 Law (Article 7/c) requires companies that operate in more than one market activity to keep separate accounts for each activity. BOTAS is obliged to have accounting unbundling and legal unbundling for all of its activities by the end of 2003 and 2009, respectively (Temporary Article 2/4-5).

The ‘eligible customer’ concept in the 2001 Law (Article 8) has four categories:

I. Customers and associations of customers that consume above a certain threshold; in 2006 that threshold is 1 million cubic metres per annum for old distribution regions and 15 million cubic meters per annum (mcm/a) for new distribution regions, and it is to be determined by EMRA each year until the whole market is opened,
II. Power generation companies,
III. Cogeneration companies,
IV. Gas production companies.

Theoretically, 80 percent of the Turkish natural gas market was open to competition in 2004 (EMRA, 2004, p.12). However, since BOTAS is the sole player in the import and wholesale markets, there is still no alternative supplier for the customers. Turkey adopted regulated TPA for transmission and distribution and nTPA for storage.

3.2 The Turkish Gas Release Programme

3.2.1 Aim and Scope of the Gas Release Programme

In order to reduce BOTAS’ monopoly over gas imports and foster import diversification, the 2001 Law (Temporary Article 2) required BOTAS to release at least 10 percent of its import contracts each year, starting from 2002 until its market share falls below 20 percent by 2009. However, BOTAS has failed to fulfill that requirement since no contract or volume release could be achieved up to 2006. In March 2004, EMRA threatened BOTAS with fines over the company’s failure to meet the target of reducing its market share by 10 percent per year (Energy Information Administration, 2005). By the end of 2004, a ‘Gas Release Programme’ was initiated which would allow BOTAS to partially transfer 6 out of 8 existing contracts to new entrants, specifically contracts with Russia, Algeria, Nigeria and Iran. Azerbaijan and Turkmenistan contracts were excluded from the programme. The amount of gas to be divested each year (16 Bcm) corresponded to 60 percent of the demand in 2005; it is planned that half of the gas imported from Russia should be supplied by companies other than BOTAS.

The bidding dates for the gas release programme were deferred four times on legal grounds (a new law had to be passed to amend the relevant article of the 2001 Law). Another obstacle was the opposition of Russia and Iran to changing the terms of their gas export contracts with BOTAS (EIA, 2005). BOTAS officials stated that Algeria also declared that it did not want to transfer its contract.[48]

The new Law,[49] passed in June 2005, required a change from the old bidding mechanism, which was a combined tender for both contract and volume releases.[50] The new mechanism

[48] Interview with BOTAS officials, 25 November 2005.
[49] Law Regarding the Amendment to the Natural Gas Market Law No.5367, Official Gazette, 25 June 2005, Number: 25856, http://www.epdk.org.tr/english/regulations/natural/law/ngas1.doc.

envisages that contract release tenders will be completed first and, if some of the planned volumes are not transferred, then a new tender shall be held for the release of the remaining volumes. In addition, the new Law requires companies to get the preliminary consent of sellers prior to the auction. Some companies asked for another postponement of the tender on the grounds that they were unable to contact Iran to ask for its consent; however BOTAS wanted to avoid the negative publicity which would have accompanied further postponements.[51] The tender for contract release took place on 30 November 2005.

3.2.2 Contract Release Mechanism[52]

The transfer mechanism was based on lots of 250 mcm/a. The total volume to be transferred (16 Bcm/annum) comprised 64 lots, as illustrated in Table 11. Three contracts are with suppliers from Russia totaling 10 Bcm/annum (40 lots), and the remaining three are with Iran (3.5 Bcm/annum, 14 lots), Nigeria (0.5 Bcm/annum, 2 lots) and Algeria (2 Bcm/annum, 8 lots). Each contract could be split into numerous smaller ones, thus the contracts could be partially transferred to more than one company, meaning that suppliers might have to negotiate many new contracts. However, there was no limitation on the number of lots for which a company could bid.

Table 11: Volumes to Be Transferred via the Gas Release Programme

Contracts	Name of the Company	Date of Signature	Expiration Date	Volume (Bcm/annum, Plateau)	Volume to be Released (Bcm/annum)	Equivalent Lots to be Released
Russia (West)	Gazexport	1986 (Feb.)	2012	6	3	12
Algeria (LNG)	Sonatrach	1988 (April)	2014	4	2	8
Nigeria (LNG)	NLNG	1995 (Nov.)	2021	1.2	0.5	2
Iran	NIGC	1996 (Aug.)	2026	10	3.5	14
Russia (Blue Stream)	Gazexport	1997 (Dec.)	2028	16	3	12
Russia/Turusgaz (West)	Gazexport	1998 (Feb.)	2021	8	4	16
Total					16	64

Source: BOTAS (http://www.botas.gov.tr/ihaleler/ilan_22092005_2.html)

Tender companies needed to be established in accordance with the Turkish Commercial Law. Prior to the tender, the tenderers should obtain a Seller's Consent Protocol (SCP) on which the number of lots are specified and an Import License Qualification Document from the seller and EMRA, respectively, for each contract.

For each lot, the companies had to offer a 'contract transfer fee (CTF)' of a minimum of $500,000. If a company wished to bid for more than one lot of the same contract, then it had to offer the same CTF.

[50] In the contract release, BOTAS is to transfer all of its rights and obligations stemming from the contracts to the private companies while, in the volume release, BOTAS is to sell the gas to the wholesalers at the Turkish border, still undertaking the contractual obligations.

[51] 'Turkish "Troyka" Joins for Demands to Import Natural Gas', *Zaman Newspaper*, 28 November 2005 (http://www.zaman.com/?bl=economy&alt=&hn=26880).

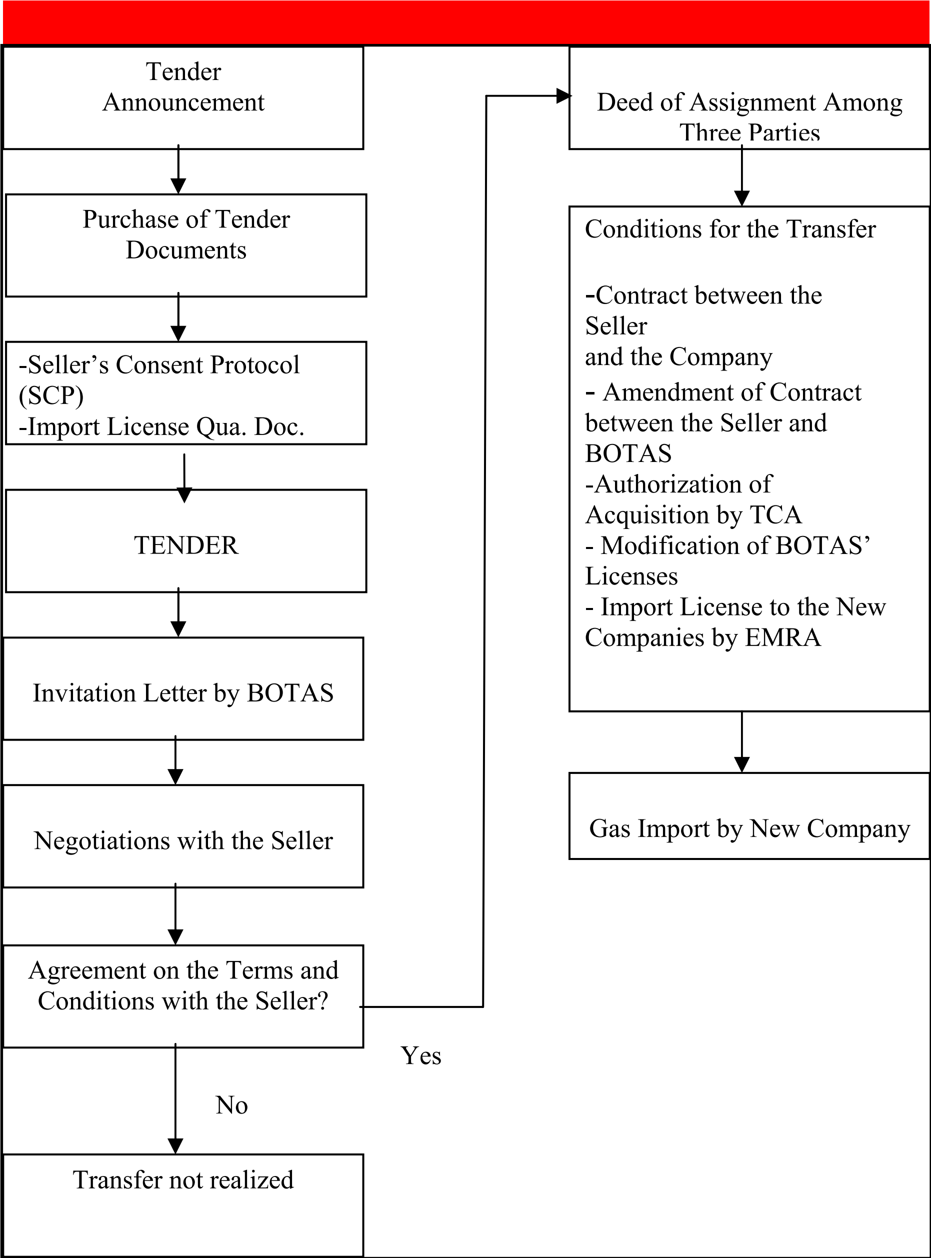
[52] Tender Announcement Document, BOTAS, 2005 (http://www.botas.gov.tr/ihaleler/ilan_22092005_2.html)

Following the tender, BOTAS allocated the lots among the tenderers. The highest bidder had priority to start negotiations with the seller for the lot. Having completed the lot allocation, BOTAS sent an 'Invitation Letter' to authorize the successful companies to sign the necessary agreements. BOTAS had the right to send an invitation letter to tenderers for fewer lots than they had requested or, if there were no more lots to be assigned for the relevant contract, not to send an invitation letter.

The Deed of Assignment (DoA), that is, the agreement showing the willingness of the three parties, had to be signed within 60 days of the delivery of the invitation letter (with a possibility of a 30-day extension at the request of the seller). If the seller and the company agree on the terms of the transfer, then the bilateral contracts between the seller and the company, and the seller and BOTAS, can be signed simultaneously. Before new companies can start to import, some other conditions (such as, authorization of the contract transfer by the Turkish Competition Authority (TCA) and the granting of an import license by EMRA) need to be met.

This process will continue until either all of the lots are transferred or until the last tenderer is reached. The tender for a further contract release, or a volume release of the remaining lots, will be announced after the process for the current contract release is completed.

Figure 14: Contract Release Mechanism



3.2.3 Outcomes of the Contract Release Tender

The tender was announced on 22 September 2005, and 37 companies (out of 40 that applied)[53] were granted an import license qualification document by EMRA when the tender was carried out on 30 November 2005 (See Annex 1).

Aytemiz Gas bid for one lot of each of the Blue Stream, Iranian, Algerian and Nigerian contracts; however, its offers were void since it did not obtain the sellers' consent. Petrol Ofisi withdrew from the Blue Stream, Iranian, Russian (West) and Russian/Turusgaz

[53] Press Release on Natural Gas Contract Release, EMRA, December 5 2005. (http://www.epdk.org.tr/basin/2005basin/2005-12-05-kontrat.html).

contracts with an ironic 'thank you' note to express their views on the process. Gazport responded similarly to the Blue Stream and Iranian contracts and Habas also withdrew from the Russian/Turusgaz tender. As shown in Table 12, the only valid offers were made for the Russian/Turusgaz contract by four companies: Shell, Bosphorus, Enerco and Avrasya made offers of $2,010 (for 1 lot), $1,811 (for 3 lots), $1,600 (for 10 lots) $910 (for 5 lots), respectively.[54]

Table 12: Offers for the Russian/Turusgaz Agreement

	Number of lots	Equivalent Volume (Bcm/annum)	CTP Offered/Lot ($)
Shell	1	0.25	2,010
Bosphorus	3	0.75	1,811
Enerco	10	2.50	1,600
Avrasya	5	1.25	910
Total	19	4.75	

Source: see footnote 54.

Bosphorus is a joint venture of Gazprom (40 percent) and Tur Energy Corporation Inc. (60 percent) and was established in 2002 to transport and distribute natural gas.[55] The affiliates of Enerco and Avrasya are controversial after rumours in the press claiming that they have connections with Gazprom.[56]

In the best case scenario, the negotiations between the companies and Gazprom will be concluded, and the transfer of 16 out of 19 lots will be achieved. Thus initially, Shell, Bosphorus and Enerco have the chance to negotiate for all of the lots for which they bid, whilst Avrasya will be negotiating for 2 lots if BOTAS sends them an invitation letter. Shell, Bosphorus, Enerco and Avrasya will have maximum import shares of 0.9, 2.8, 9.3 and 4.65 percent in relation to 2005 demand – all significantly below the import threshold of 20 percent laid down by the 2001 Law (Article 4/a).

The Tender Commission of BOTAS accepted the following lot allocation: Shell 1 lot, Bosphorus 3, Enerco 10 and Avrasya 2 (instead of the 5 requested). Thus, if approved by the BOTAS board, invitation letters will be sent to the companies allowing negotiations with the seller to start.[57]

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[54] 'There Was No Demand for BOTAS' Contracts other than the Turusgaz Contract', *Dunya Newspaper*, 1 December 2005 (http://www.dunyagazetesi.com.tr/news_display.asp?upsale_id=242310);
'The Companies were not Interested in Gas Tender', *Zaman Newspaper*, 1 December 2005 (http://www.zaman.com/?hn=234066&bl=ekonomi&trh=20051201).

[55] Gazprom in Figures 2000–2004 (http://www.gazprom.ru/documents/Statistika%20En.pdf).

[56] 'Avrasya Gas Had Connection with Gazprom, Too', *Referans Newspaper*, 7 December 2005 (http://www.finansalforum.com.tr/haber.aspx?HBR_KOD=30357); 'Competition Authority has the Last Word'; *Radikal Newspaper*, 9 December 2005 (http://www.radikal.com.tr/haber.php?haberno=172408); 'Increased Reaction to Russian Consent', *Referans Newspaper*, 4 December 2005 (http://www.referansgazetesi.com/haber.aspx?HBR_KOD=30101).

[57] 'Approval to the Controversial Tender from BOTAS', *Sabah Newspaper*, 14 April 2006 (http://www.sabah.com.tr/2006/04/14/eko117.html)

3.2.4 *Evaluation of the Gas Release Programme*

Release programs are designed to overcome the problem of inadequate access to supply, particularly in the early stages of market opening, and therefore have an important role in the development of sustainable competition in gas markets (EFET, 2003, p.1).

In order to break the monopoly backed by long term contracts, some EU member states and candidate countries have already carried out gas release programs. Table 13 reflects the market structure in the upstream gas market of the selected countries. In most of the countries with no gas release programs, the number of market participants with significant market shares has remained limited and incumbent companies have preserved their monopoly (or dominant) status.

Table 13: Market Structure in the Upstream (Import and Production) Market 2004

	% of Gas Controlled by the Largest Company	No. of Companies with >5% Share (Production or Import)	Gas Release Programme
Austria	>90	1	yes
Belgium	92	1	no
Denmark	80–85	1	yes
France	91	1	planned
Germany	50	12	in progress
Ireland	40	5	no
Italy	68	3	in progress
Netherlands	60	1	no
Spain	40	4	completed
Sweden	97	1	no
UK	25[58]	5	completed
Estonia	50	3	no
Latvia	100	1	no
Lithuania	59	2	no
Poland	98	1	no
Czech R.	99	1	no
Slovakia	100	1	no
Hungary	100	1	in progress
Slovenia	100	1	no
Candidate Countries			
Romania	87	4	yes
Bulgaria	100	1	yes
Turkey	97	1	yes

Source: European Commission, 2005
(http://europa.eu.int/comm/energy/electricity/benchmarking/doc/4/sec_2004_1720_en.pdf)

[58] Although the market share of the largest upstream (import and production) gas company in the UK is as low as 25%, the market share of its largest retailer, Centrica, is 53% as of September 2005 (Waddams, 2006, p.12).

The expectation of the Turkish gas release programme is that it will stimulate competition and efficient use of resources. The BOTAS monopoly will be abolished and there will be new market entrants. The release programme is also expected to achieve price transparency which is a vital element for a competitive market. However, in its current state the Turkish gas release programme has been hard to implement and therefore has not yet achieved the targeted goals.

3.2.4.1. Enormous Volume to Be Released in a Limited Time

The design of the gas release programme in Turkey was too radical; the volume of gas to be released (16 Bcm/annum) corresponded to 60 percent of 2005 demand, and this was to be achieved within 3 years. But the Turkish gas release programme is unprecedented since no country has thus far implemented a program of *contract release* (World Bank, 2004, p.33).

The Turkish gas liberalization process has required a gas release programme far more ambitious than even those achieved in the UK and Spain, which were among the first and the most extensive programs in Europe. Gas release in the UK between 1992 and 1996 resulted in the development of a spot gas market and a rapid decrease in both industrial and commercial prices (EFET, 2003, p.2). It took Spain 3 years to release 9 percent of the market corresponding to 19 percent of eligible customers. 14 licensed gas traders submitted bids for 25 percent of the gas that was supplied from Algeria (Sonatrach) through the Gazoduc Mediteranne Europeene (GME) pipeline and released between 2001 and 2004.[59] Before the tender it was announced that no company could buy more than 25 percent of the gas on offer, and, after the tender, 6 out of 14 companies were allocated volumes: BP – 25 percent, Iberdola – 25 percent, Union Fenosa – 20 percent, Endesa – 18 percent, Hidrocantabrico – 10 percent and Shell – 2 percent (EFET, 2003, p.6).

Table 14: Volume Releases in Other Countries and the Gas Release Programme in Turkey

	Released Volume (Bcm/annum)	Length (years)	Released Volume as percentage of the Total Market	Number of Offers
UK	4.8	4 (1992–96)	<5	70
Spain	4.2	3 (2001–04)	9 (25% of Algerian Contract)	14
Germany	7.2	3	5% of Ruhrgas Contract	
Austria	0.25	1	3	12
Italy	2.3	4	3	
France	4.8	3	3.5	
Turkey	16	3	60	40

Source: Petform (2004), CEDIGAZ (2004) and EFET (2003).

As shown in Table 14, most European countries have adopted release programs corresponding to 3–9 percent of demand over 3–4 years. Turkey attempted to achieve a release of volumes seven times greater relative to the size of the market than the highest comparable figure in Europe (Spain with 9 percent) within the same time frame. This was unrealistic.

[59] 'New Spanish Law Paves Way for Deeper, Faster Market Liberalization', *Gas Matters*, 28 June 2000, p.14.

3.2.4.2. Barriers to Entry for the Potential Entrants

There have been a number of barriers to entry, including:

- the confidentiality clauses in the contracts,
- the sellers consent protocol that has to be signed between the seller and the potential importer before the tender,
- extra cost to the companies arising from the mandatory storage required by the 2001 Law,
- the ambiguity of whether and how BOTAS will release its contracted customers.

In the volume release component of the gas release programme, the first two of those issues will automatically be removed, however the latter two will still remain to be tackled.

3.2.4.2.1. Confidentiality Clauses

The contracts include strict 'confidentiality clauses', preventing the tenderers from examining them (Article 1 of Tender Announcement). Tenderers that have the opportunity to examine BOTAS' contracts (for example, via affiliates) therefore have an unfair advantage over those which do not. In addition, during the negotiations, the companies that are unaware of BOTAS' costs may agree higher costs with Gazexport (Gazprom) and may suffer competitive disadvantage in relation to BOTAS. Under such circumstances, if there is supply overhang then BOTAS will have a price advantage over other importers in supplying the market. However, confidentiality clauses might not have been perceived as a very high risk by the 40 companies which showed interest in contract release. If by some chance demand exceeds supply, then the customers will be paying more than they used to pay during BOTAS' monopoly, which was certainly not the aim of the gas release programme.

3.2.4.2.2. SCP between the Seller and the Potential Importer

Valid bids were received for only one out of six contracts on offer. Despite real interest in the tender from 40 companies – mainly Turkish-owned but also some global companies, such as BP, Shell, Statoil and Suez – bids from all but four companies (Shell, Bosphorus, Enerco and Avrasya) were invalid. This was mainly because the companies had to obtain the consent of the seller prior to the tender. Some of the companies bid without having consent from the seller and some sent ironic 'thank you' letters to express their dissatisfaction with the process. Contract release required the agreement of existing suppliers to replace a contract with an established state company (BOTAS) by a contract with an untested new importer. Therefore suppliers were reluctant to sign the SCP with companies other than BOTAS or those in which the suppliers themselves held shares. In addition, sellers did not want to forego the Turkish Treasury's financial guarantee of BOTAS' contracts.

Sellers consent may have been necessary to prevent bidders trying to initiate negotiations in which sellers would not participate. However, it immediately eliminated 90 percent of the companies which had shown initial interest.

3.2.4.2.3. Mandatory Storage

Mandatory gas storage required by the 2001 Law (Article 4/4/a/3) loads an extra cost on the companies which might be perceived as an entry barrier. Importers are asked to guarantee storage of 10 percent of the annual import volume within 5 years. If the first phase of the gas release can be concluded within 2006, then the importers must create the required storage capacity by 2011.

BOTAS is planning to use the Sea of Marmara storage facilities by the end of 2006. The Salt Lake project is to be completed by 2010. According to the 2001 Law (Temporary Article 2/4) BOTAS must privatize its storage facilities by 2011.

On the other hand (as mentioned in Section 1.3) it is not clear whether BOTAS will be using the private LNG terminal (Egegaz) as a storage facility. Egegaz wants to use its facility for importing LNG, but since 2002 EMRA has refused to issue an import license.[60] The EMRA president's explanation is that his priority is the protection of BOTAS until 2009 when competition in the market will be attained. If BOTAS declares that there is need for new import capacity, EMRA will issue new import licenses.[61]

If the goals of Law 2001 are achieved, all of the storage facilities of BOTAS will be completed and privatized by 2011. Hence there seems to be no real risk for importers that storage will not be part of a competitive market. Nevertheless, the issue of how mandatory storage will be applied should be explained in more detail and storage activities should be left to the market to determine in a transparent and non-discriminatory manner. In 5 years' time the issue should be looked at again in the context of concerns about security of supply and the adequacy of existing storage facilities.

3.2.4.2.4. Captive Customers

The most important entry barrier has been the long term commitments of BOTAS' existing customers. Most of its customers have contracts with BOTAS to 2020 for the delivery of approximately 27 Bcm each year. As reflected in Figure 15, only 7, 12, 18 and 26 percent of the demand forecast will remain available for new players in the market in 2006, 2007, 2008 and 2009, respectively. By 2009, BOTAS plans to release 80 percent of its import market share; however, only 26 percent of the customers will be non-captive. BOTAS aims to keep its import market share below 20 percent after 2009. On the other hand, BOTAS' share of the contracted customers will be well above 40 percent until 2020. Considering that, in the past, BOTAS has overestimated demand, and assuming that this is true for the coming years, the share available for new entrants may be even smaller.

Total expected demand by 2009 is around 37 Bcm, similar to minimum take or pay obligations. For BOTAS to have an import market share below 20 percent, it would have to release 29.7 Bcm of supply by that year. But in 2009, the demand of noncaptive customers – those free to negotiate with the new importers – will be only 9.3 Bcm. Therefore over 20 Bcm of imports would have no market.

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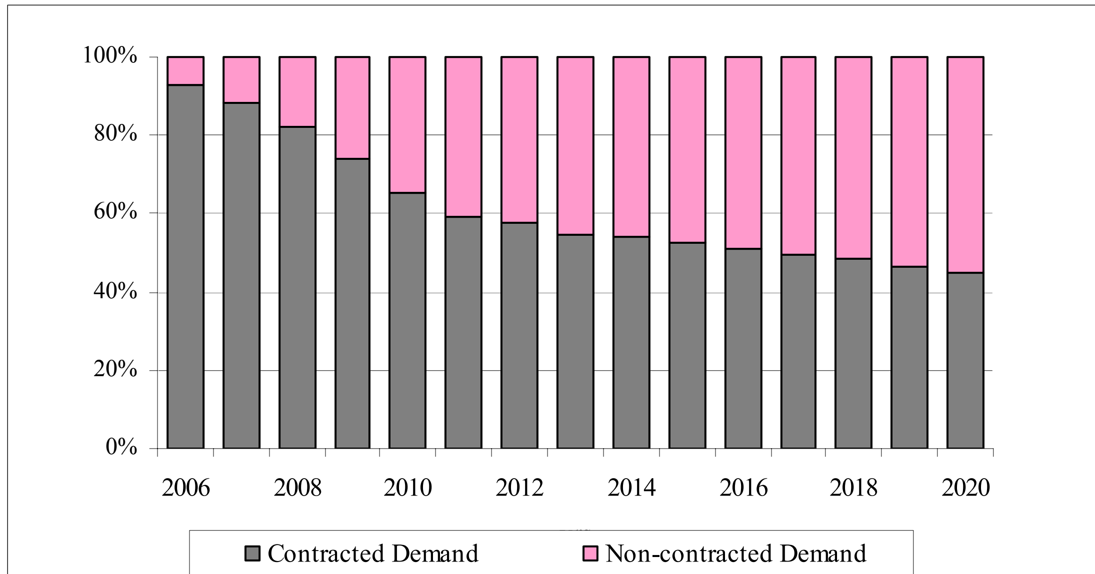
[60] 'LNG Terminal in Aliaga Left Inactive Since Years', *WowTurkey*, 5 January 2006, (http://www.wowturkey.com/forum/viewtake or payic.php?t=19726).

[61] 'The President of EMRA Explains Why Ege Gaz is not Functioning', *Aliaga Chamber of Commerce*, 6 January 2006, (http://www.alto.org.tr/Atrinti.asp?HaberNo=545).

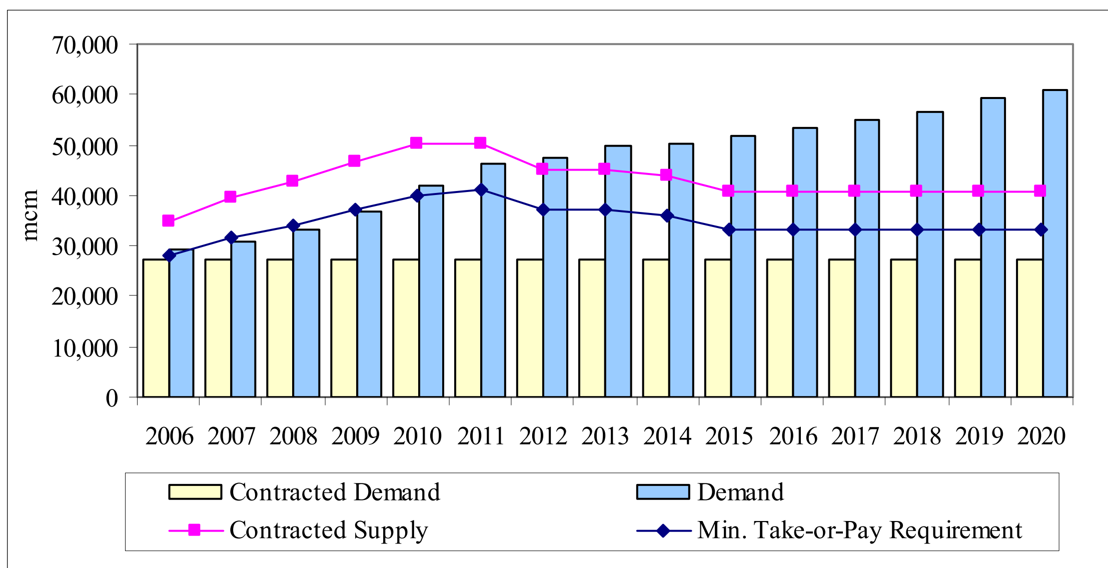
Figure 15: Share of Contracted Demand in Total Forecasted Demand



Source: BOTAS

If demand develops as BOTAS has anticipated (see Figure 16) and minimum take or pay volumes do not exceed demand, there is no space for new importers prior to 2010. In case of a more prolonged supply overhang, with BOTAS still retaining its contracted customers, then the situation would worsen and there would be virtually no market for new importers.

Figure 16: Comparison of Demand (Contracted & Total) with Supply (Contracted & Minimum Take or Pay) (2006–2020)



Source: BOTAS (http://www.botas.gov.tr/dogalgaz/dg_arztaleb_sen.asp)

Even under these conditions, the four bidders for contract release gas will have difficulty in finding customers. The amount that they bid for (4 Bcm) is equivalent to 15 percent of the market, but in 2006 only 7 percent of customers were noncaptive. Therefore, even if BOTAS releases this gas, the answers to the questions of how many customers can be released, by

when, and how, will remain uncertain; they need to be answered in a non- discriminatory and transparent way.

3.2.4.3 Vertical Integration of Gazprom

Gazprom has developed a strategy for expanding into downstream markets in Europe (World Bank, 2004, p.11-12). In Turkey where it is the largest supplier with a 64 percent market share, it has bought 40 percent of the shares in Bosphorus. Gazprom and Bosphorus are legally unbundled.

It has been long argued that Bosphorus would have an unfair advantage in the contract release negotiations with Gazprom over other new entrants. If Bosphorus can get the volume it asked for in the contract release negotiations, it will have a market share of 2.8 percent in 2005 demand terms, and this market share will decrease as the demand increases. In the current situation, Bosphorus does not seem to have significant market power. However, EMRA should monitor Gazprom and Bosphorus, and take ex-ante measures to prevent potential abuses of vertically integrated companies.

Annex 1: List of Companies Granted an Import License Qualification Document by EMRA[62]

1 Habaş Sinai ve Tıbbi Gazlar Istihsal Endüstrisi A.Ş.
2 Som Petrol Tic. A.Ş.
3 Zorlu Doğal Gaz İth. İhr. ve Top. Tic. A.Ş.
4 Egegaz A.Ş.
5 Avrasya Gaz A.Ş.
6 Enak Paz. Dep. ve Nak. A.Ş.
7 Aksa Doğal Gaz Top. Satış A.Ş.
8 Koç Statoil Gaz Toptan Satış A.Ş.
9 İGATAŞ İst. Gaz ve Akaryakit Ted. Sanayi ve Ticaret A.Ş.
10 Akenerji Ele. Üretimi Otopr. Grubu A.Ş
11 Transbalkan İnşaat Sanayi ve Ticaret A.Ş.
12 Cengiz Elek. Toptan Satış A.Ş.
13 Aytemiz Gaz Ticaret ve Sanayi A.Ş.
14 İGSAŞ İstanbul Gübre Sanayii A.Ş.
15 Bosphorus Gaz Corp. A.Ş.
16 ERDEMİR Gaz Ticaret A.Ş.
17 Shell Enerji A.Ş.
18 Nurol Enerji Üretim Paz. A.Ş.
19 Enerjisa Doğal Gaz Toptan Satış A.Ş.
20 Viteragaz Doğalgaz San. ve Tic. A.Ş.
21 Bisen Doğalgaz Toptan Satış İthalat İhracat İnşaat ve Ticaret A.Ş.
22 İlab Gaz A.Ş.
23 Medgaz A.Ş.
24 Enerco Enerji Sanayi ve Ticaret A.Ş.
25 Petrol Ofisi Alternatif Yakıtlar Toptan Satış A.Ş.
26 Gazport Doğal Gaz Toptan Satış Ticaret A.Ş.
27 İlci Doğal Gaz Işletme Dağitim Sanayi ve Ticaret A.Ş.
28 BP Doğal Gaz Ticaret A.Ş.
29 SUEZ-Tractebel Enerji Ticaret A.Ş.
30 GAP Petrol Gaz İthalat ve İhracat Paz. San. ve Tic. A.Ş.
31 Truva Doğalgaz Enerji İletişim Lojistik İnşaat Eğitim Danışmanlık İth.İhr. San. Ve Tic. A.Ş.
32 Anadolu Doğal Gaz İletim A.Ş.
33 Milangaz LNG Toptan Satış Tic. ve San. A.Ş.
34 Unigaz Gaz Sanayi ve Ticaret A.Ş.
35 Aksoy Gaz Toptan Satış A.Ş.
36 Enerji Petrolgaz İthalat İhracat Pazarlama San. ve Tic. A.Ş.
37 Troyka Doğalgaz Enerji Iletişim Lojistik İnşaat Eğitim Danişmanlik Ithalat Ihracat Sanayi ve Ticaret A.Ş.

[62] http://www.epdk.org.tr/lisans/dogalgaz/lisansdatabase/devir.asp

References

BOTAS, *Tender Announcement for the Transfer of Natural Gas Sales and Purchase Contracts*, Ankara, 2005

BOTAS, *Principles for Transmission Network Operation*, Ankara, 2004

BOTAS, *Annual Report*, Ankara, 2003

Centre International d'Information Sur le Gaz Naturel et Tous Hydrocarbures Gazeux (CEDIGAZ), *The Players on the European Gas Market*, Paris, 2004

Cohen, Saul B., "The Geopolitics of Turkey's Accession to the European Union", Eurasian Geography and Economics, 45, No.8, pp. 575-582, 2004

EMRA (Energy Market Regulatory Authority), *Annual Report*, Ankara, 2004

Energy Information Administration, *Country Analysis Brief: Turkey*, U.S. Department of Energy, 2005 (www.iea.doe.gov/emeu/cabs/turkey.html)

European Federation of Energy Traders (EFET), *Implementation of Gas Release Programme for European Gas Market Development*, Position Paper, 2003

European Commission, *Green Paper, A European Strategy for Sustainable, Competitive and Secure Energy,* COM(2006)105, Brussels, 2006

European Commission, *Report from the Commission on the Implementation of the Gas and Electricity Internal Market*, Commission Staff Working Document, COM(2004)863, Brussels, 5 January 2005
(http://europa.eu.int/comm/energy/gas/benchmarking/doc/4/com_2004_0863_en.pdf)

European Commission, *The Unbundling Regime,* Note for DG Energy and Transport on Directives 2003/54/EC and 2003/55/EC on the Internal market in Electricity & Natural Gas, Brussels, 2004
(http://europa.eu.int/comm/energy/electricity/legislation/doc/notes_for_implementation_2004/unbundling_en.pdf)

Gallistl, Johann, "Presentation of OMV Gas", Proceedings of the 7th Annual Conference on Oil and Gas Transportation in the CIS & Caspian Region, London, 2005

Gallistl, Hans, "Presentation of OMV Erdgas", Proceedings of the Conference on Natural Gas in South East Europe: Investment, Transit, Trade GmbH, Istanbul, 2004

Gas Transmission Europe (GTE), Gas in South Eastern Europe: GTE Presentation, Zagreb, 2004

IEA, *Energy Policies of IEA Countries: Turkey*, Paris, 2005a

IEA, *Natural Gas Information*, Paris, 2005b

IEA, *World Energy Outlook*, Paris, 2004

Interstate Oil and Gas Transport to Europe (INOGATE), *INOGATE Developments 2001-2004 and New Perspectives*, Greece, 2004

OECD, *Draft Report on Experiences with Structural Separation Recommendation*, DAF/COMP(2006)4, Directorate for Financial and Enterprise Affairs Competition Committee, Paris, 2006

Ogutcu, Mehmet, "Turkey's Energy Policies in the Context of Eurasian Geopolitics", Event Report, Kennedy School of Government Caspian Studies Program, Boston, 2002

Pipeline and Gas Journal, *2005 International Pipeline Construction Report*, August 2005

Petroleum Association (PETFORM), *Liberalization of Natural Gas-Gas Release Program*, Istanbul, 2004

Posch, Walter and Grgic Borut, "Turkey and the EU: Strategic Implications for Central Europe", Policy Analysis No.2, Ljubljana Institute for Strategic Studies, Slovenia, December 14-20, 2004

Roberts, John, "The Turkish Gate: Energy Transit and Security Issues", EU-Turkey Working Papers, Joint Project of Centre for European Policy Studies, Brussels and Foreign Policy Forum, Istanbul, 2004

Stern, P. Jonathan, *The Future of Russian Gas and Gazprom*, Oxford University Press, 2005

Taranto, Yael, *Report on the Natural Gas Sector*, Industrial Development Bank of Turkey, Ankara, 2005

Waddams, Catherina, "Lessons from Liberalising UK Retail Markets and Effects on Consumers", Presentation to the Hacettepe University, Ankara, 2006

World Bank, *Turkey: Gas Sector Strategy Note*, Report No. 30030-TR, Washington DC, 2004

Web Sites

Gas Matters: http://www.gas-matters.com

BOTAS: http://www.botas.gov.tr

EFET: http:// www.efet.org

EMRA: http://www.epdk.org.tr

Energy Information Administration: www.iea.doe.gov

European Commission DG Tren (Gas): http://ec.europa.eu/energy/gas/index_en.htm

IEA: http://www.iea.org

INOGATE: http://www.inogate.org/en

Gazprom: http://www.gazprom.ru

MOL: http://www.mol.hu/en

OMV: http://www.omv.com

Pipeline and Gas Journal: www.pipelineandgasjournal.com

PETFORM: http://www.petform.org.tr

The World Bank (Turkey): www.worldbank.org.tr

World Tribune: http://www.worldtribune.com

Legislation

Turkish Natural Gas Market Law No.4646:
http://www.epdk.org.tr/english/regulations/natural/law/natural_gas.html
Natural Gas Market Distribution and Customer Services Regulation:
http://www.epdk.org.tr/english/regulations/natural/distrubution/distribution.pdf

EU Gas Directive 2003/55/EC:
http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_176/l_17620030715en00570078.pdf