



Turkish Natural Gas Market: What is Next?

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About PETFORM



Established in 2000, PETFORM has played a crucial role in the transfer of private sector views to the public authorities regarding to Turkish energy legislation amendments. Member companies mainly have activities in 2 sectors:

- **Exploration & Production Sector**
- **Natural Gas Market**

Member Companies



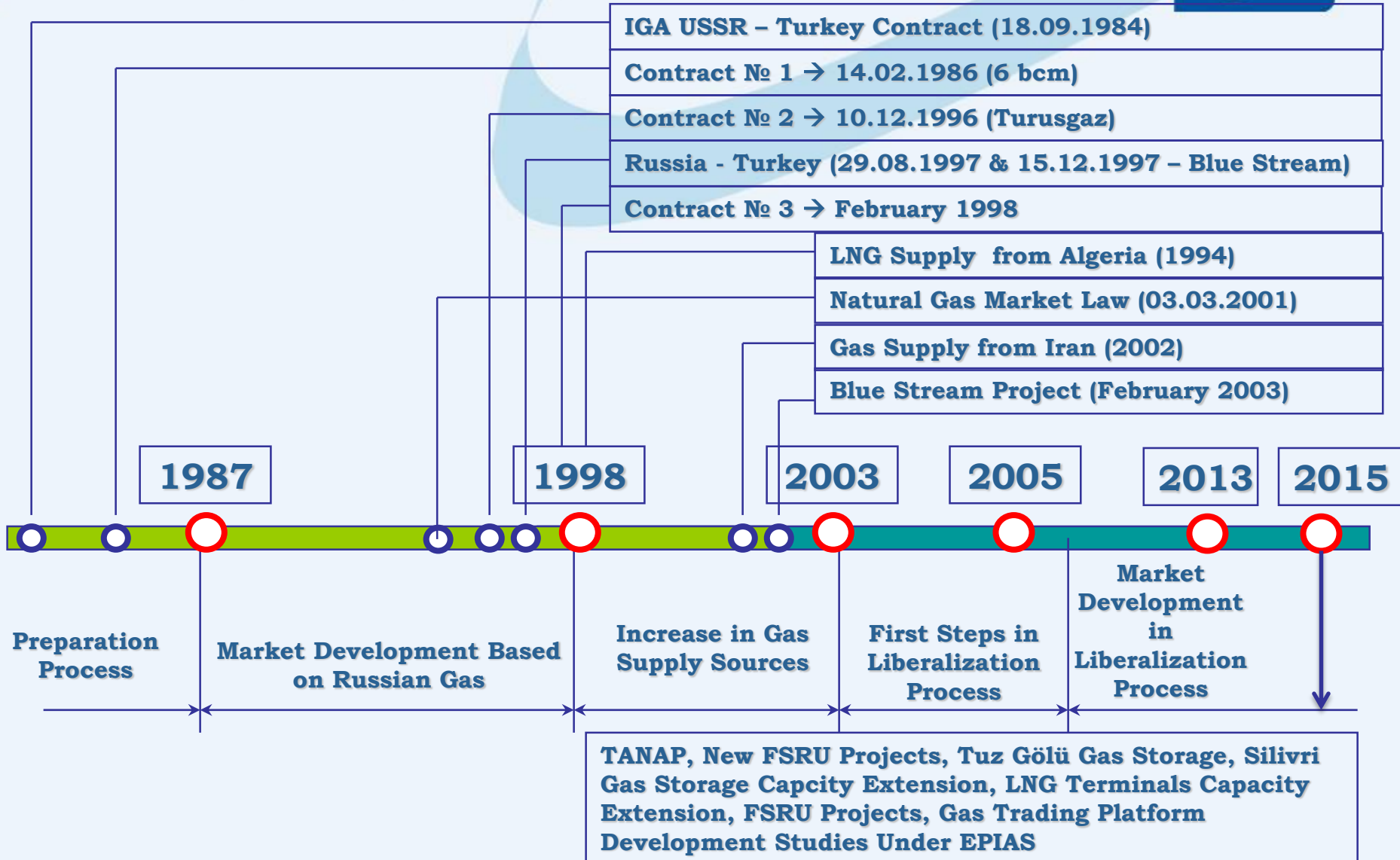
- AKENERJİ
- AKFEL
- AKSA
- ALADDIN MIDDLE EAST
- ANATOLIA ENERGY
- ANGORAGAZ
- ATTILA DOĞAN İNŞAAT
- AVRASYA GAZ
- AYGAZ
- BATI HATTI GAZ
- BM HOLDİNG
- BOSPHORUSGAZ
- BP
- ÇALIK ENERJİ
- DEMİRÖREN EGL
- DOĞAL ENERJİ
- DOĞAN ENERJİ
- EDISON
- EGEGAZ
- ENEL
- ENERCO ENERJİ
- ENERJİSA
- ENI
- ERDGAZ
- EWE ENERJİ
- EXXONMOBİL
- GDF SUEZ
- GENEL ENERGY
- GÜNEY YILDIZI PETROL
- HATTUŞA ENERJİ
- IBS RESEARCH
- KİBAR ENERJİ
- MARSA ENERGY
- MEDGAZ
- NATURGAZ
- OMV
- PALMET ENERJİ
- PERENCO
- POLMAK
- POZİTİF DOĞALGAZ
- SHELL ENERJİ
- SOCAR
- STATOIL
- TEKFEN İNŞAAT
- THRACE BASIN
- TIWAY
- TOTAL
- TRANSATLANTIC PETROLEUM
- TURCAS
- VALEURA ENERGY
- VALVITALIA
- ZMB GAZ DEPO
- ZORLU ENERJİ

Turkey's Overall Energy Balance (1990 – 2015)



| | 1990 | 2015 | Change |
|--|------|-------|-----------|
| Total Energy Demand (million toe) | 52.9 | 125.2 | ↑ 118% ↑ |
| Total Domestic Production (million toe) | 25.6 | 32.9 | ↑ 26% ↑ |
| Total Energy Imports (million toe) | 30.9 | 92.3 | ↑ 192% ↑ |
| Coverage of Domestic Production to Total Consumption | 48% | 28% | ↓ - 42% ↓ |

Development Process of Turkish Natural Gas Market



Gas Imports by Source Country (2011 - 2014)



| <i>(bcm)</i> | 2011 | 2012 | 2013 | 2014 | Share in Total (2014) |
|---------------|--------|--------|--------|--------|-----------------------|
| Russia | 25.406 | 26.491 | 26.212 | 26.975 | 55 % |
| Iran | 8.190 | 8.215 | 8.730 | 8.932 | 18 % |
| Azerbaijan | 3.806 | 3.354 | 4.245 | 6.074 | 12 % |
| Algeria (LNG) | 4.156 | 4.076 | 3.917 | 4.179 | 8 % |
| Nijerya (LNG) | 1.248 | 1.322 | 1.274 | 1.414 | 2 % |
| Spot LNG | 1.069 | 2.464 | 892 | 1.689 | 5 % |
| Total | 43.874 | 45.922 | 45.270 | 49.262 | |

Source: Energy Market Regulatory Authority

Gas Import Agreements



| Contract | Date of Signature | Date of Operation | Duration (Years) | Volume (Plateau bcma) | Date of Expiration |
|-------------------|-------------------|-------------------|------------------|-----------------------|--------------------|
| Algeria (LNG) | Apr 1988 | Aug 1994 | 20 | 4 | 2024 (extended) |
| Nigeria (LNG) | Nov 1995 | Nov 1999 | 22 | 1.2 | 2021 |
| Iran | Aug 1996 | Dec 2001 | 25 | 10 | 2026 |
| Russia (B.Stream) | Dec 1997 | Feb 2003 | 25 | 16 | 2028 |
| Russia (West) | Feb 1998 | Mar 1998 | 23 | 4 | 2021 |
| Azerbaijan | Mar 2001 | Jul 2007 | 15 | 6.6 | 2022 |

Source: Energy Market Regulatory Authority

Gas Trading Hub: Vision or Illusion for Turkey?



Physical Infrastructure

- Very well developed and maintained physical infrastructure
- No restrictions and congestions to meet peak demand
- Cross border capacity development with minimum congestion
- New storage and LNG facilities for supporting supply security to seasonal and peak demands

Regulatory Framework

- Policy drafting regulatory body should understand the real Dynamics of the Energy, TPA, Network Code, Independent TSO etc.
- Implementation of policies via EU directives.
- Monitoring of wholesale market integrity, competition (antitrust) and effective consumer interest protection is needed for competition
- Unbundling of transmission and counteraction of incumbents' vertical dominance

Independence of Transmission System Operator

- Appropriate capacity-booking model (entry/exit model, use it or lose it principle)
- Effective balancing mechanism
- Effective nomination processes
- Publicized imbalance charging structures (not overly punitive)
- Very well integrated storage injection and withdrawal processes to the transmission system
- Transparent tariffs for system entry and exit

Commercial and Market Conditions

- Formation and active promotion of common pricing reference
- Free day ahead and intraday price assessment mechanism
- Standard and commonly expected physical contracts
- No barrier for new entries
- No destination clauses
- Transparent price-discovery mechanisms / platforms ,functioning forward market
- Good synchronization between balancing, nearby and forward markets
- Stable financial and credit environment and mechanisms

Private Players' Entrance into the Market



Contract Release (2007)

| | |
|---------------|------|
| Enerco Enerji | 2.50 |
| BosphorusGaz | 0.75 |
| AvrasyaGaz | 0.50 |
| Shell Enerji | 0.25 |
| | + |

4 bcm

Contract Renewal (2013)

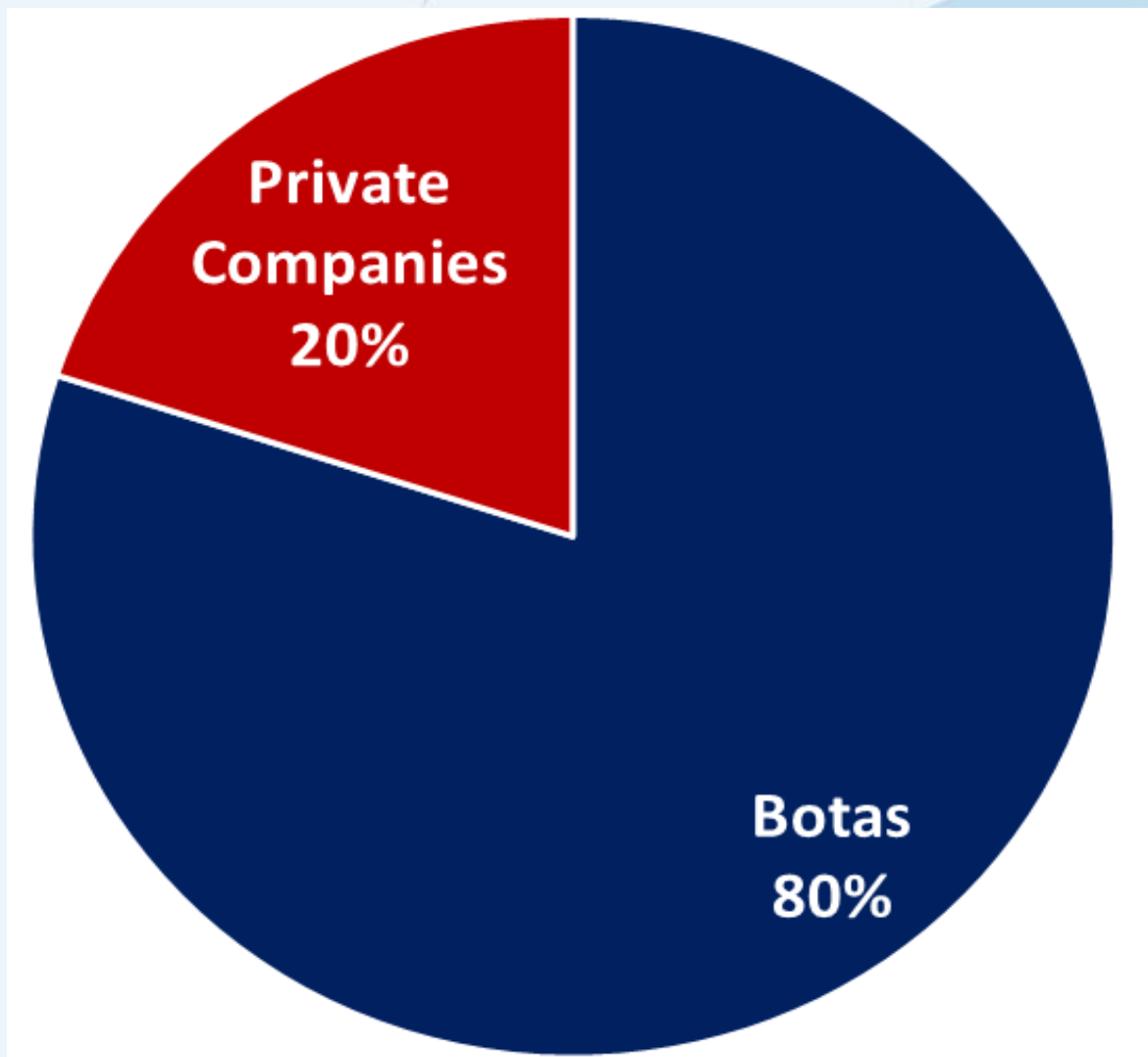
| | |
|--------------|------|
| Akfel Gaz | 2.25 |
| BosphorusGaz | 1.75 |
| Kibar Enerji | 1.00 |
| Batı Hattı | 1.00 |
| | + |

6 bcm

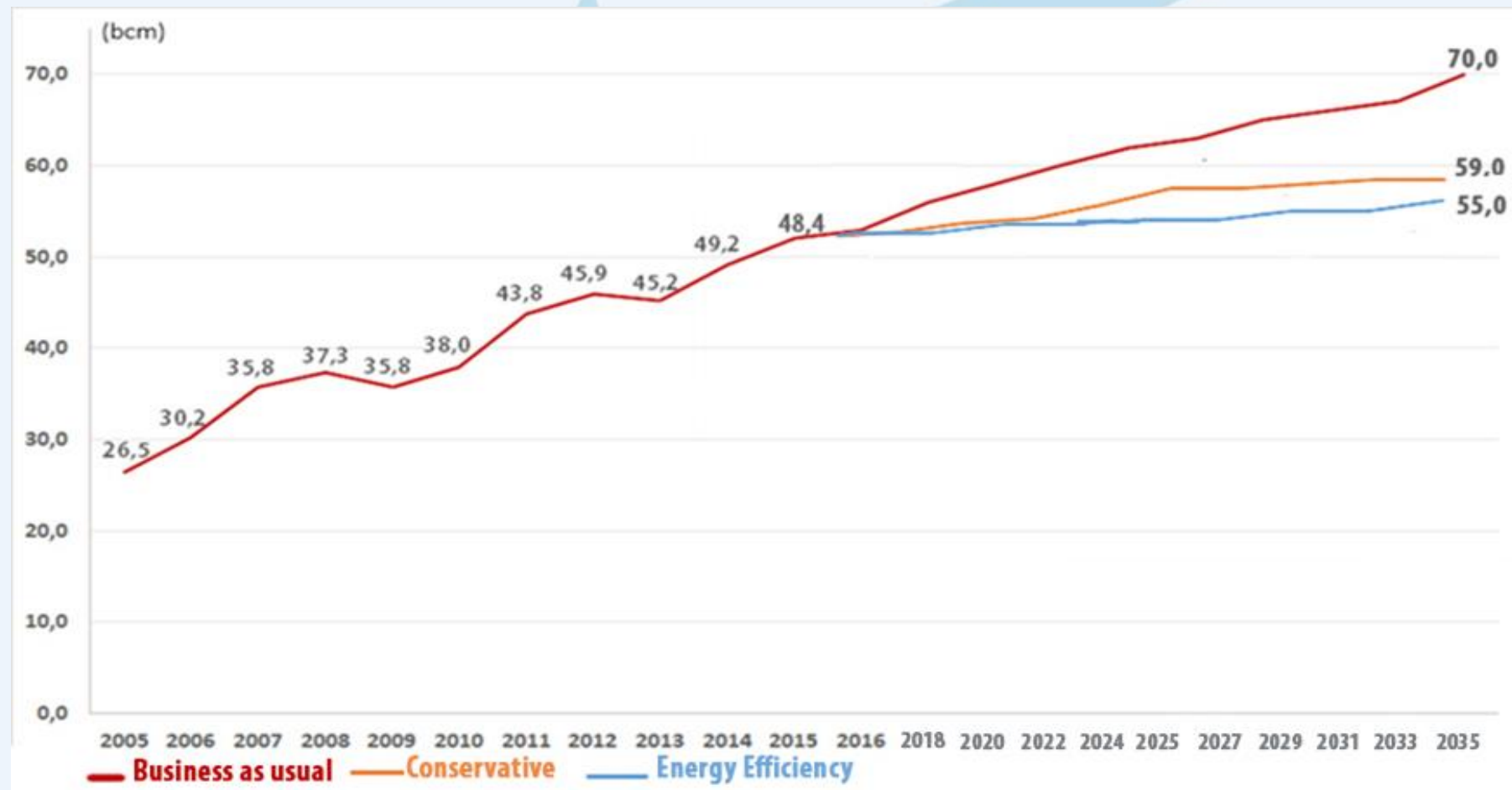
TR – AZ Agreement (2013)

| | |
|-------|------|
| SOCAR | 1.20 |
|-------|------|

Market Shares



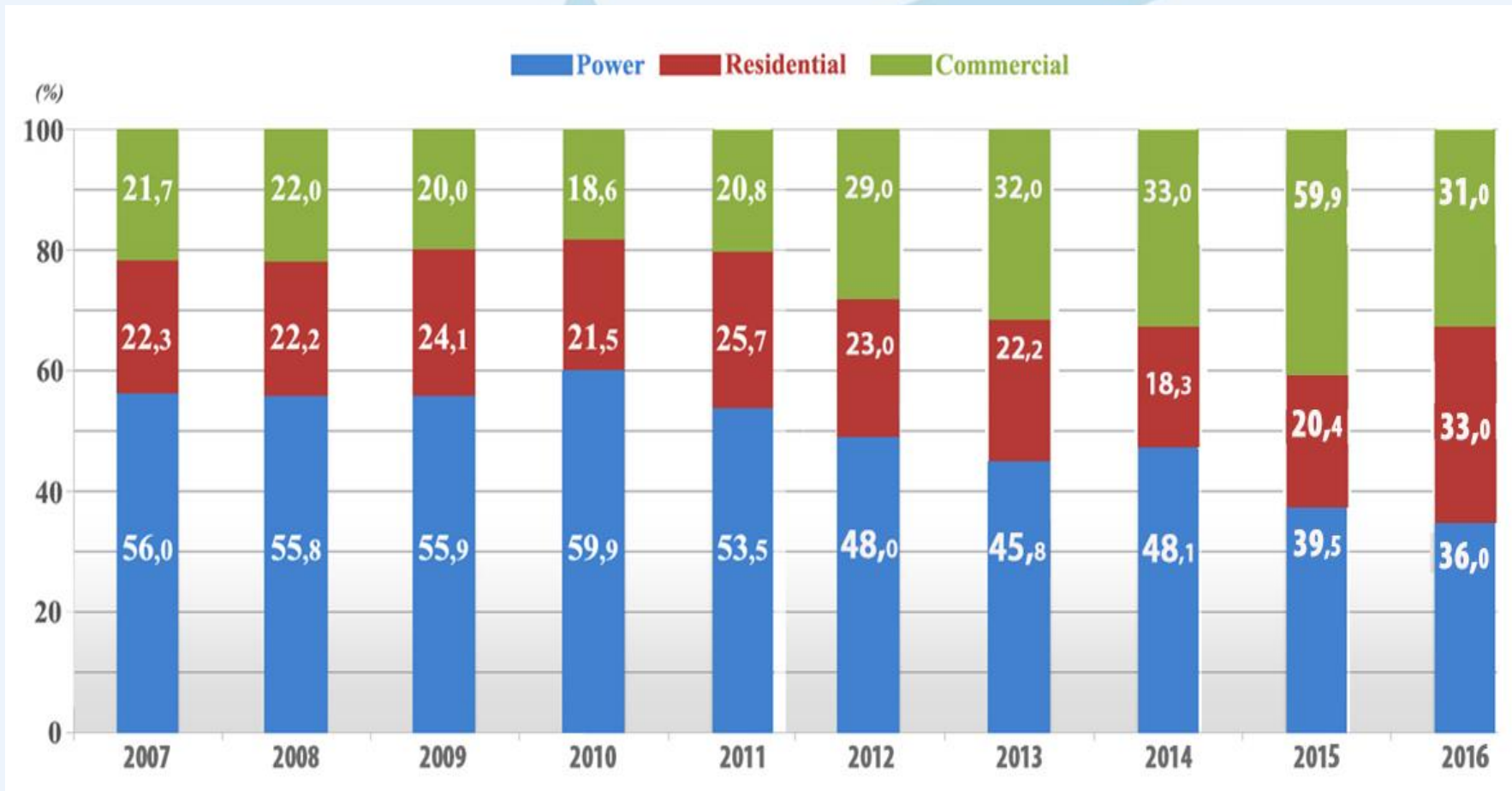
Natural Gas Demand Projection



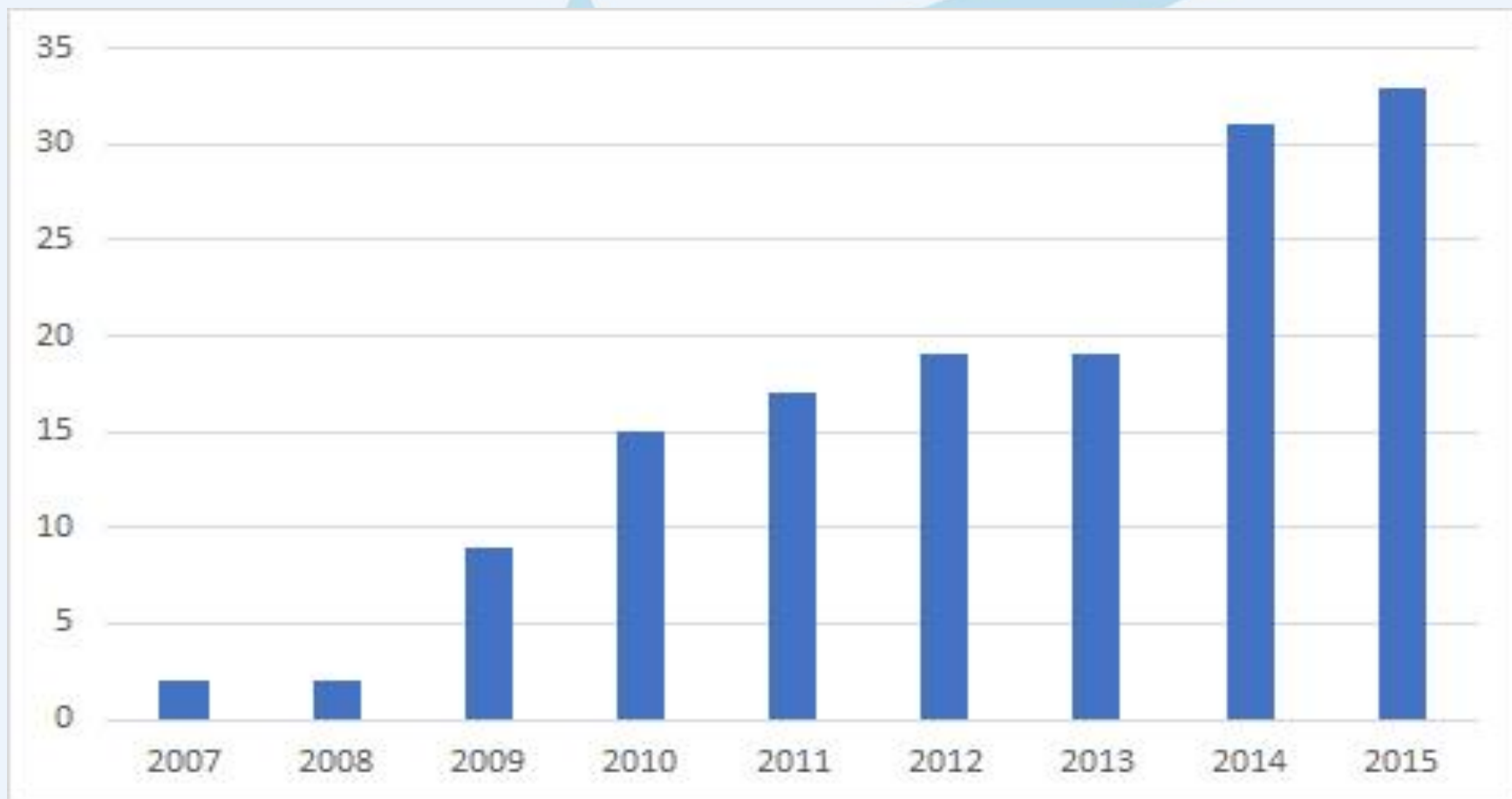
New Supply Opportunities



Changing Gas Demand Dynamics (2007 – 2016 1st. half)



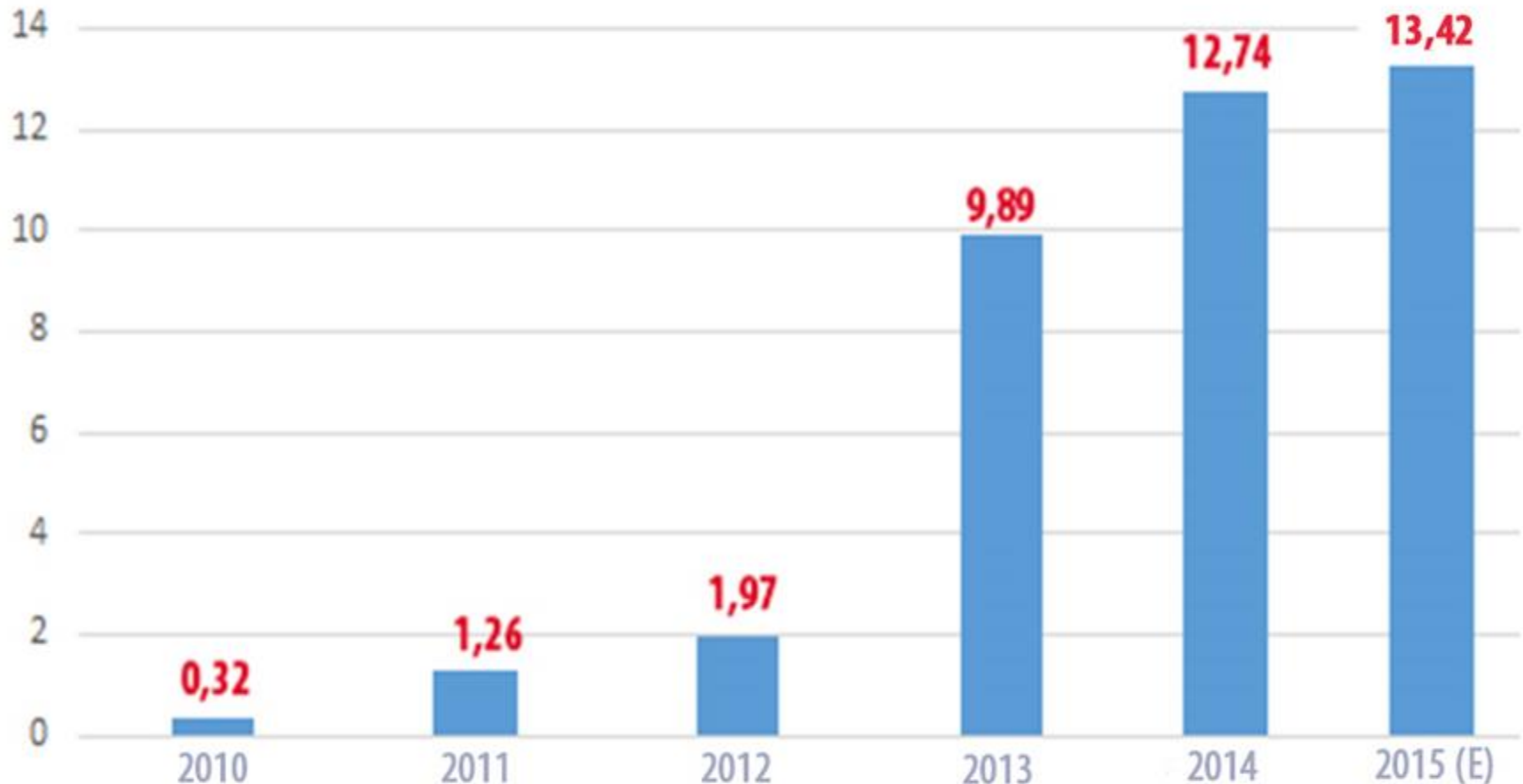
Number of Private Wholesalers in the Market



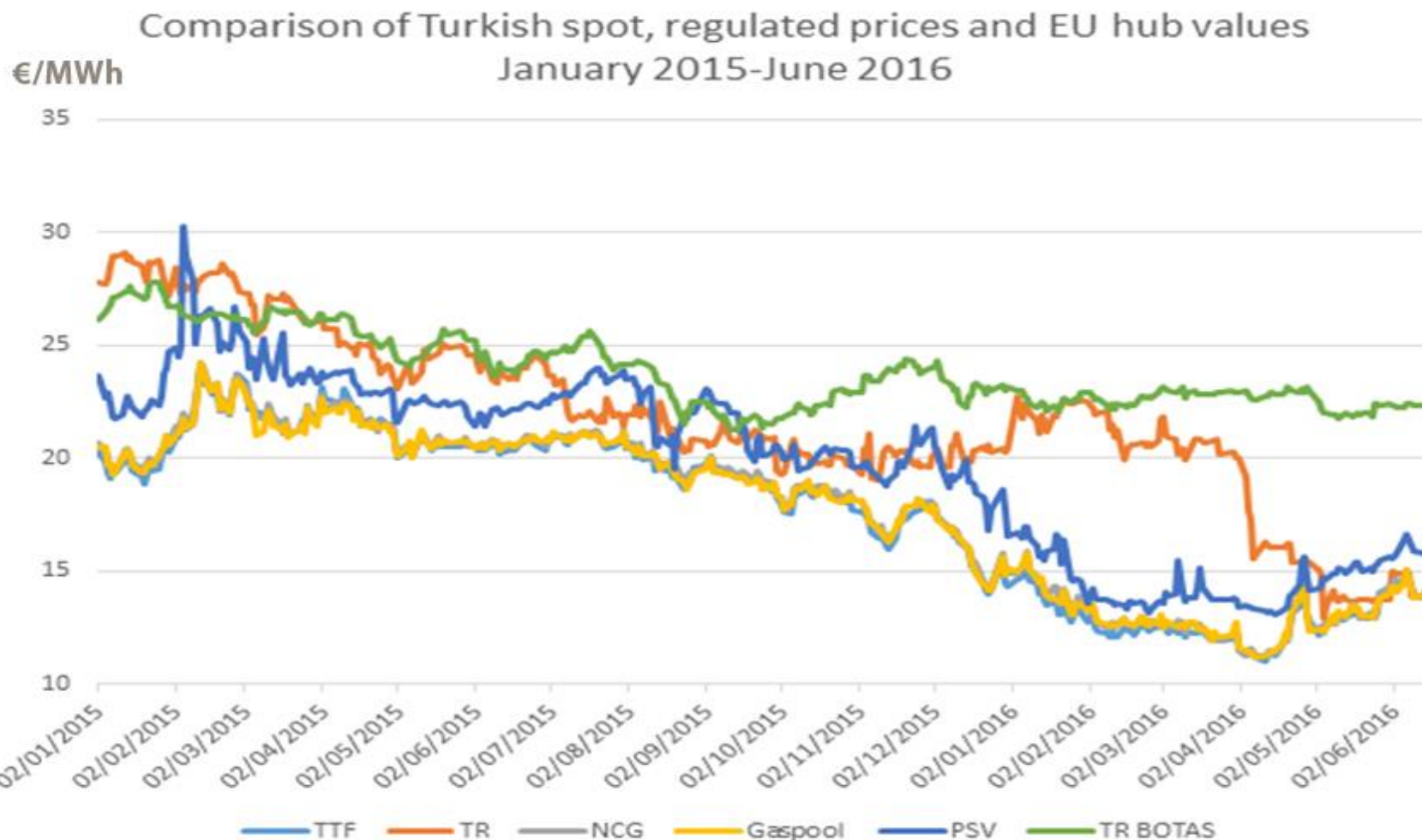
Turkey Virtual Trading Point (UDN) Volumes



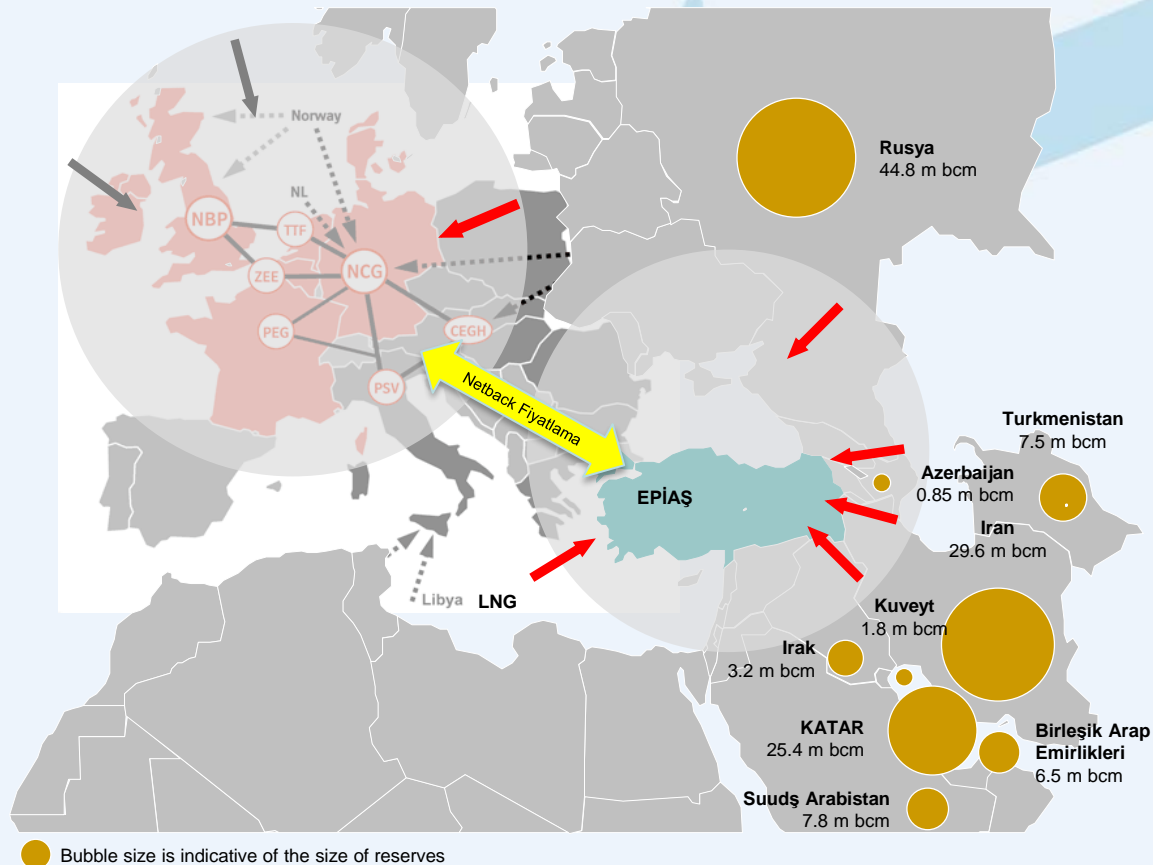
billion TRY



What Kind of a Gas Pricing System?



Integration of Turkey with European Hubs



- 8 Major European Trading Hub
- Trading on OTC's via Brokers
- Trading on Energy Exchanges

If Turkey can make necessary structural reforms, Turkish natural gas market will be integrated with European trading hubs and generate reference price for natural gas trade in the region.



THANK YOU...

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