Turkey Natural Gas Market
What is next?

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`The interpretations, estimates and/or opinions reflect the judgment of the authors, not the Company`

ANGORAGAZ

TÜRKERLER

Overview of Türkerler Group

Construction

- Contract Work
- Real Estate Development
- Water & Infrastructure
- Cement

Highlights

- A leading brand in the construction business
- Pipeline of A+ real estate development projects
- Significant growth potential for infrastructure

International Alliances
OTV International, a Veolia Water company

Others
Several companies operating in the textile,

Energy

- Generation
- Distribution
- Trading

Highlights

- 24 MW GEPP, 120 MW HEPP operational
- 816 MW existing RES licenses, 125 MW under con
- 600.000 power distibution customers and

1.7 GWh Energy Sales in VEDAS

- Currently with 678.000 of customers and 2.6 bil.

m3 of gas distribution, in İzmir

Public-Private Partnership

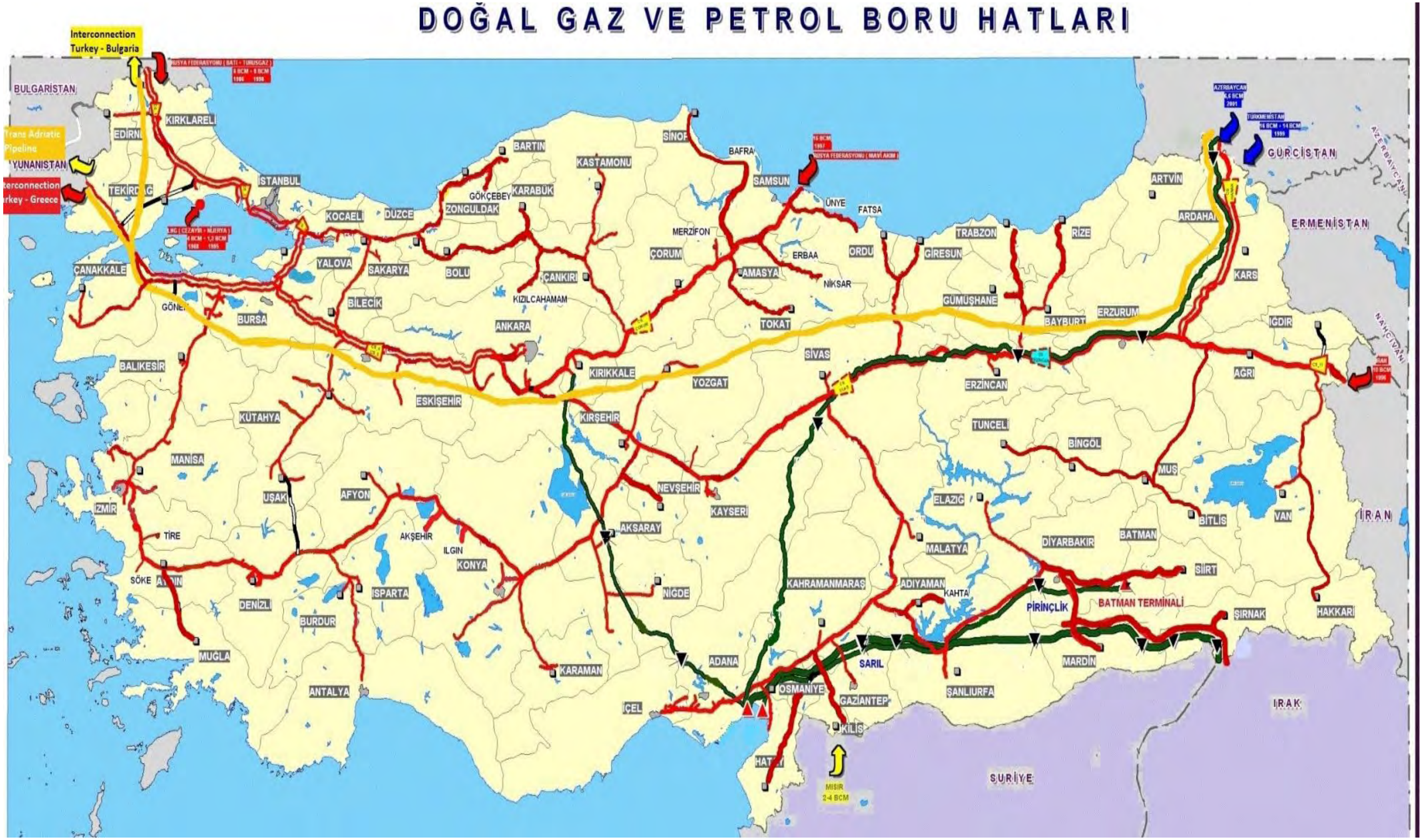
- Healthcare

Highlights

- Won the tender for Turkey's first and largest PPP
- Ankara, İzmir, Kocaeli healthcare campus projects

Local & International Alliances
Astaldi SpA, Gama Holding

PIPELINE SYSTEM



The Length of BOTAŞ Natural Gas Transmission Network

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOTAL	4.510	5.245	6.078	7.809	8.333	9.798	11.130	11.332	11.593	12.215	12.290	12.292	12.561	12.963
Yearly	1.020	735	833	1.731	524	1.465	1.332	202	261	622	75	2	270	402

Ref: BOTAS Sector Report 2015

Natural Gas Supplied Cities

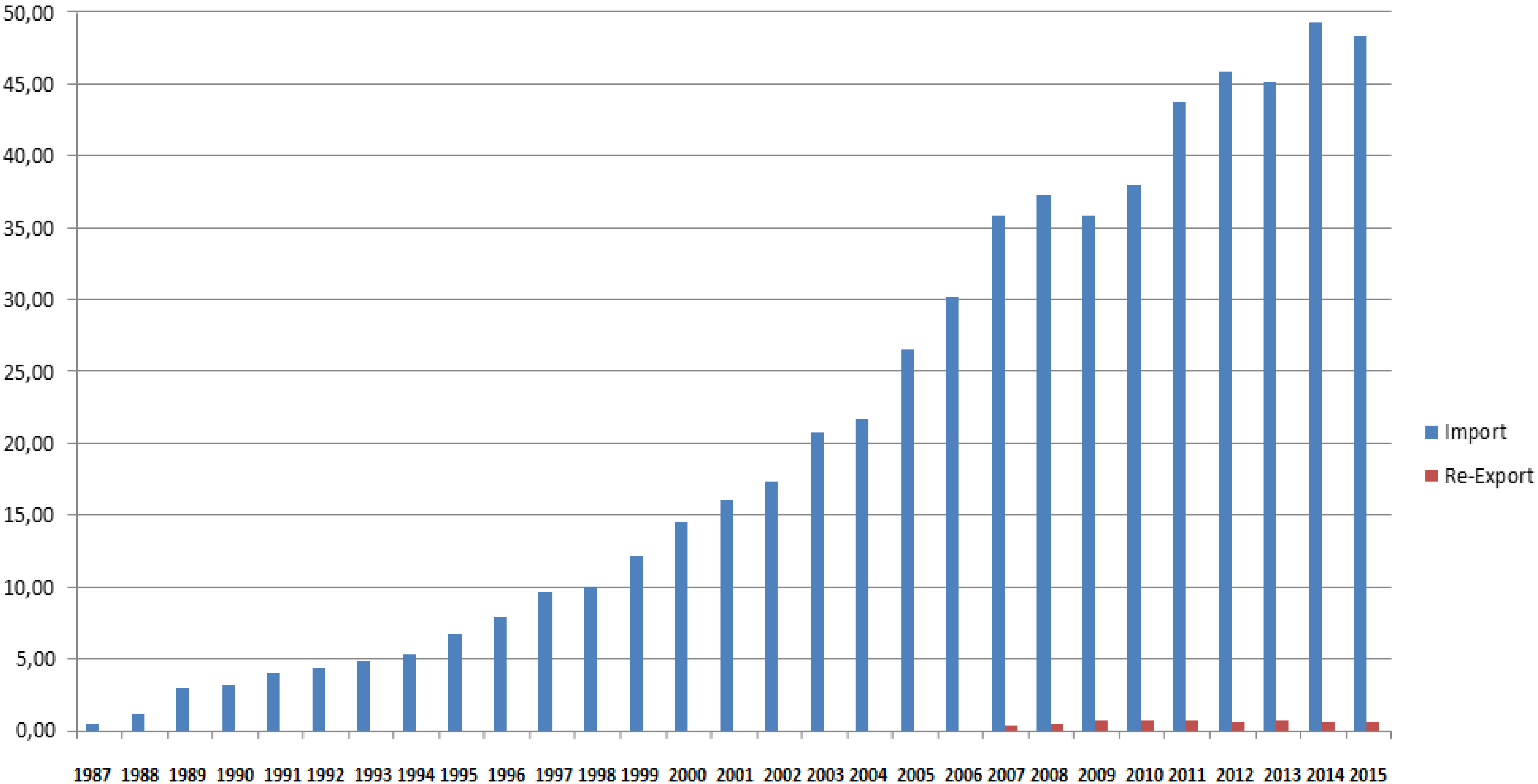
Natural Gas Supplied (77)

Prepairing for Construction Tenders (3)

Ongoing Construction (1)

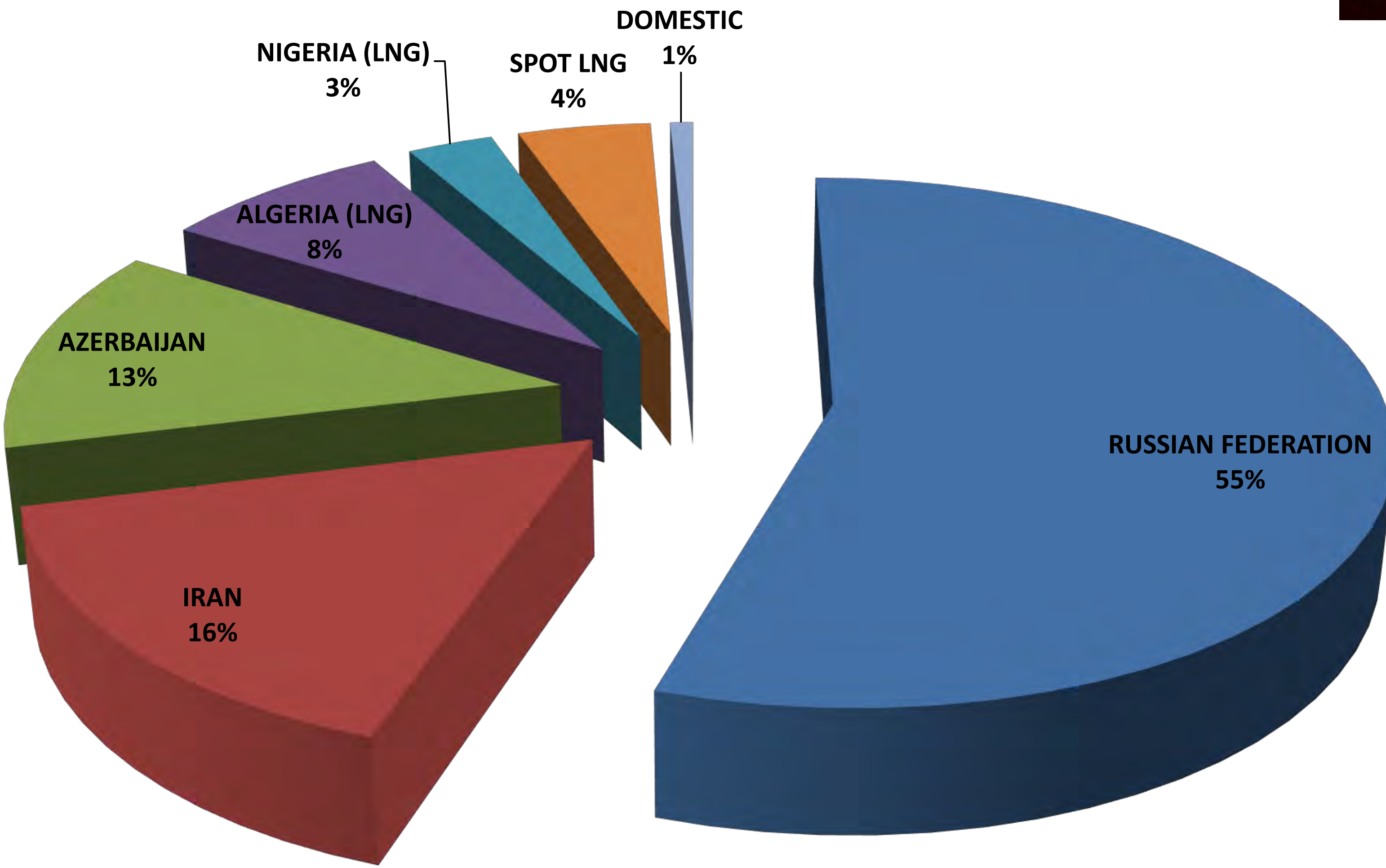
Ref: BOTAS Sector Report 2015

Gas Import & Re-Export



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Import	0,43	1,11	2,93	3,19	3,96	4,35	4,86	5,28	6,74	7,90	9,70	10,00	12,10	14,50	16,00	17,30	20,80	21,70	26,50	30,20	35,80	37,30	35,80	38,00	43,80	45,90	45,20	49,30	48,30
Re-Export																					0,31	0,44	0,72	0,66	0,73	0,61	0,68	0,63	0,62

Gas Supply Market Shares 2015

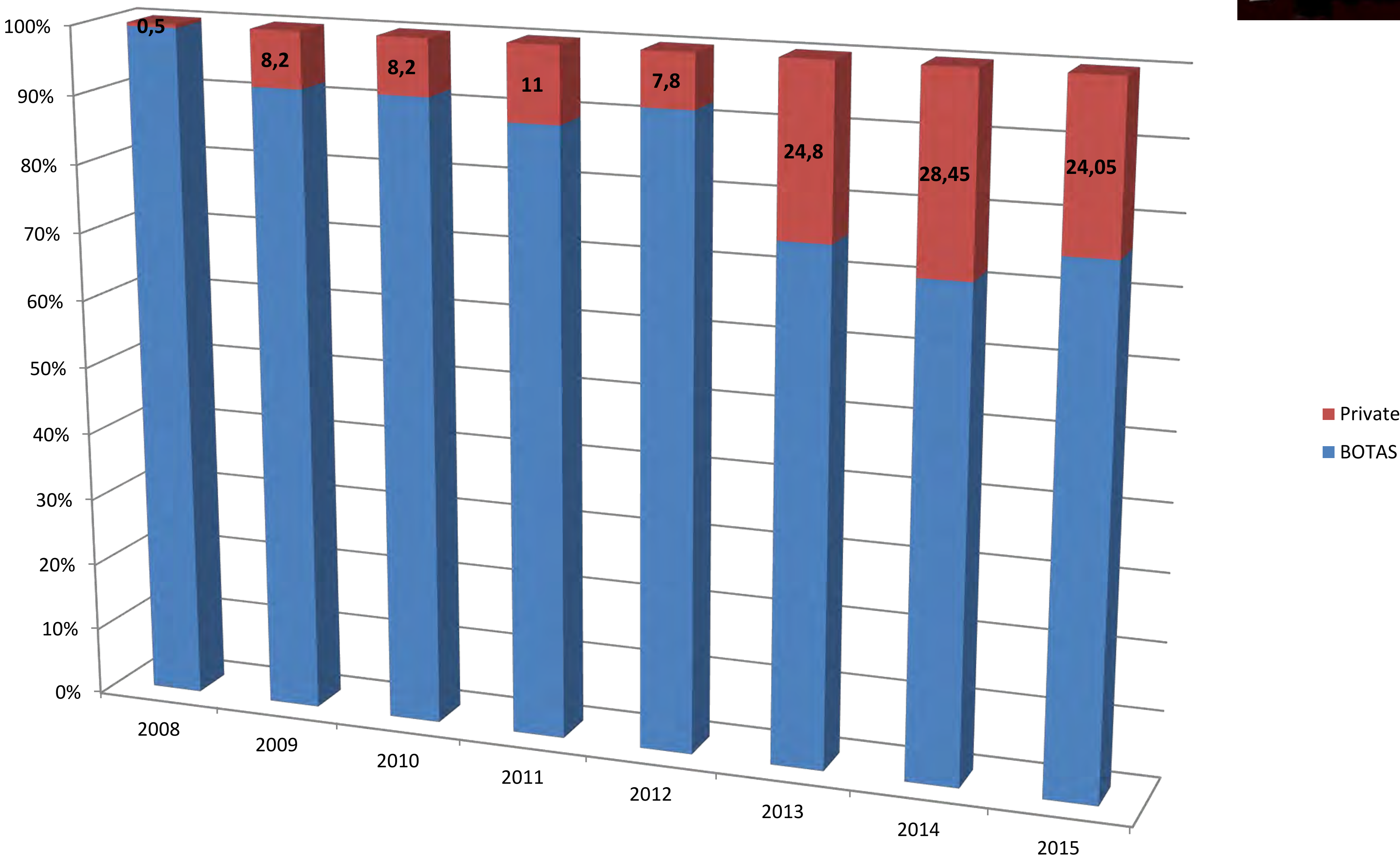


GAS IMPORT CONTRACTS

- **BOTAS**
- Russian Federation Western Route 4 BCM
- Russian Federation Blue Stream Route 16 BCM
- Iran 10 BCM
- Azerbaijan 6.6 BCM S.D 1
- Azerbaijan 6.0 BCM S.D 2
- Algeria 4.0 BCM
- Nigeria 1.2 BCM
- **TOTAL 47.8 BCM**

- **PRIVATE IMPORTERS**
- Enerco 2.5 BCM
- Bosphorus 2.5 BCM
- Akfel 2.25BCM
- Avrasya 0.5 BCM
- Batı Hattı 1.0 BCM
- Kibar 1.0 BCM
- Shell 0.25 BCM
- Delivery of Socar at Entry Point 1.2BCM
- **TOTAL 10.0 BCM**

Annual Shares of Imports



Active Wholesale Companies

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Aksa	Aksa	Aksa	Aksa	Aksa	Aksa	Aksa	Aksa	Aksa	Aksa
Turcas	Turcas	Turcas	Turcas	Turcas	Turcas	Turcas	Aygaz	Aygaz	Aygaz
		Aygaz	Aygaz	Aygaz	Aygaz	Aygaz	Doğal	Doğal	Doğal
		Doğal	Doğal	Doğal	Doğal	Doğal	EWE	EWE	EWE
		EWE	EWE	EWE	EWE	EWE	Gazport	Gazport	Gazport
		Gazport	Gazport	Gazport	Gazport	Gazport	NaturGaz	NaturGaz	NaturGaz
		NaturGaz	NaturGaz	NaturGaz	NaturGaz	NaturGaz	Zorlu DG	Zorlu DG	Zorlu DG
		Pozitif	Pozitif	Pozitif	Pozitif	Zorlu DG	GDF Suez	GDF Suez	GDF Suez
		Zorlu DG	Zorlu DG	Zorlu DG	Zorlu DG	EnerjiSA	Hattuşa	Hattuşa	Hattuşa
			Akenerji	Akenerji	Akenerji	GDF Suez	Medgaz	Enerya	Enerya
			EnerjiSA	EnerjiSA	EnerjiSA	Hattuşa	Hipot	Cengiz	Cengiz
			GDF Suez	GDF Suez	GDF Suez	Medgaz	OMV Enerji	OMV Enerji	OMV Enerji
			Hattuşa	Hattuşa	Hattuşa	Zorlu Ted.	Odaş	Odaş	Odaş
			Medgaz	Medgaz	Medgaz	OMV Enerji	Angoragaz	Angoragaz	Angoragaz
			Zorlu Ted.	Zorlu Ted.	Zorlu Ted.	OMV Gaz	Global Energy	Global Energy	Global Energy
				OMV Enerji	OMV Enerji	Angoragaz	Erdgaz	Erdgaz	Erdgaz
				OMV Gaz	OMV Gaz	Erdgaz	Socar Gaz	Socar Gaz	Socar Gaz
					Angoragaz	Socar Gaz	Socar T.	Socar T.	Socar T.
					Erdgaz	Socar T.	Torunlar	Torunlar	Torunlar
							TT Elektrik	Şişecam	Şişecam
									EnerjiSA
									Akmercan
									NaturelGaz
2	**2**	**9**	**15**	**17**	**19**	**19**	**20**	**20**	**23**

DESTINY FOR TURKEY ?

Comission Staff Working Document 2015

Good progress has been made on security of supply. The Ministry of Energy and Natural Resources adopted its new strategic plan for 2015-2019 which aims to improve security of energy supply, diversify supply sources and promote energy efficiency and renewable energy, with incentives to use domestic sources. Turkey continues to comply with the oil stocks acquis. In April, the Turkish Electricity Transmission Company and the European Network of Transmission System Operators for Electricity signed a long-term agreement on commercial energy exchanges. Turkey's efforts to strengthen the electric interconnection with all its neighbours have also continued. A gas transportation agreement between Turkey and Turkmenistan was ratified in May. Operations related to the trans-Anatolian natural gas pipeline project moved forward decisively. In December 2014, Russia announced a new gas transportation project in cooperation with Turkey to replace the South Stream pipeline project, but its construction remains uncertain***. A fair and transparent gas transit regime in line with the EU energy acquis is needed to enable Turkey to play a major role as a gas transit country to the EU. (See Chapter 21 on Trans-European networks).***

What is Hub? What is Energy Hub?

Two different alternatives…

Two different ways…

28/06/2016

Ref: Rıdvan Akar, Aygaz

Difference between trading hub and transit hub?

Trading Hub → **a place where goods from other places are bought and sold** *Ref: Cambridge Dictionary*

Transit Hub no definition…

Transit → **movement of goods or people from one place to another:** *Ref Cambridge Dictionary*

(Energy) Transit Hub → **the movement of Energy from one place to another:**

Ref: Rıdvan Akar, Aygaz

Turkey and Hub Definition

- Time to decide…

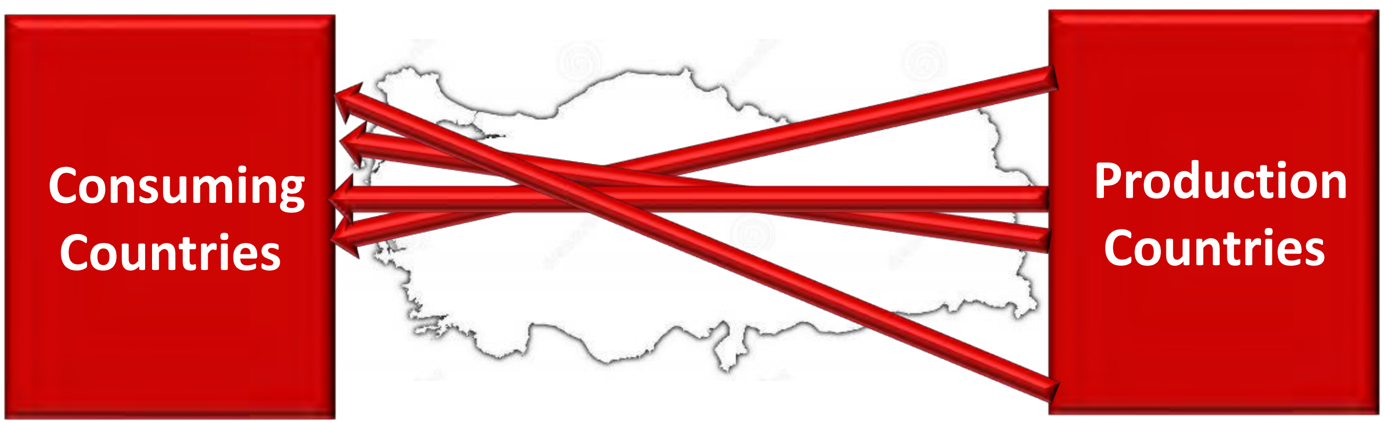
Demand and Supply match anyway.

But in different concept…

Ref: Rıdvan Akar, Aygaz

Transit Hub Turkey

the movement of natural gas from one place to another:



Ref: Rıdvan
Akar, Aygaz

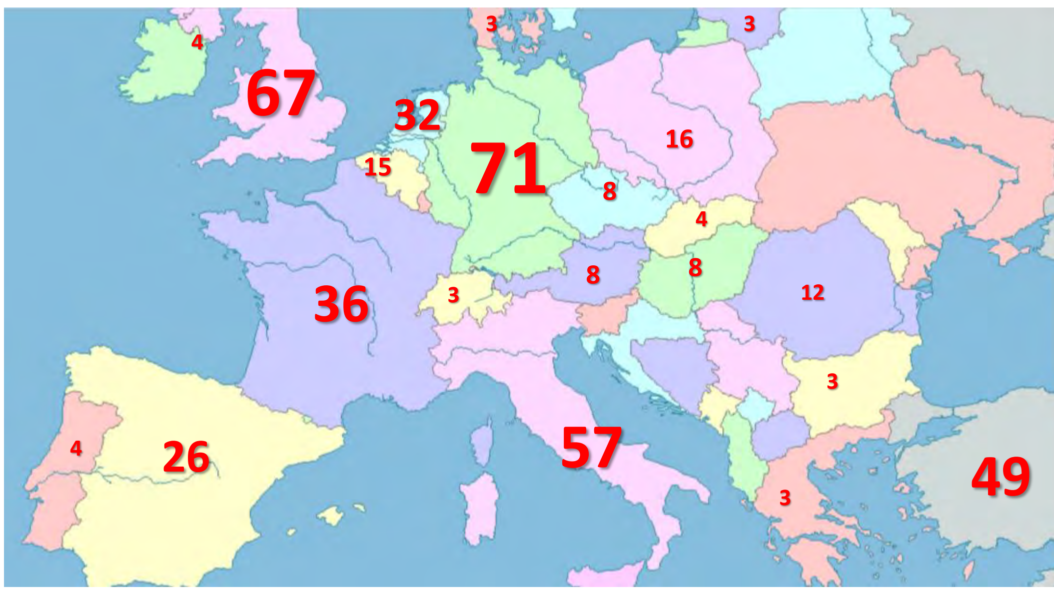
Trading Hub Turkey

A place that natural gas bought and sold

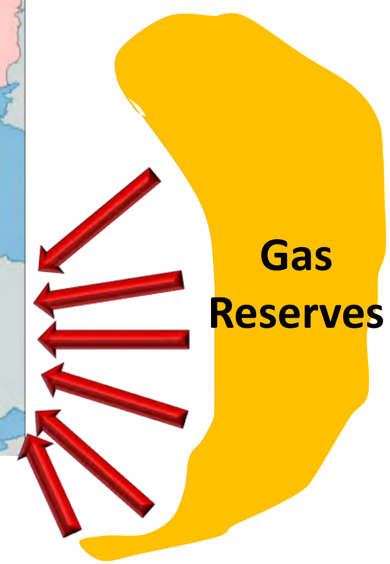
28/06/2016

Natural Gas Flows and Consumption

Where is the most suitable place for trading hub?



2014 Natural Gas Comsumptions (bcm)
Source: BP Statistical Review, 2014



Why Turkey?

- Turkey is a big market and nearest country to production Countries,
- Turkey is very well placed geographically,
- It is easy to be transit country but advantages are limited,
- Turkey can be trading hub and provide security of supply to all countries.
- Turkey's security of supply is important as much as EU's security of supply
- There are many challenging opportunities for future not only for Turkey but also surrounding countries.

Conditions precedent…

- Transparency
- Pipeline connection btwn Countries
- Flexibility
- Security of Supply
- Private Players
- Regulation
- Market Culture
- Government desire

OTHERWISE

TRANSIT HUB

(Only for domestic needs)

UNDERGROUND STORAGE

- By 2019, Tuzgölü underground storage facilities will start to operate, this will bring additional 20 mcm entry capacity to the system. Currently 75% of the project have been completed. It has 1 bcm storage capacity at this moment but there are some projects in order to increase the storage capacity.
- There will be an additional tender by BOTAS in order to construct 2nd phase at Silivri which currently has 2.5 bcm storage capacity.
- There will be multiple FSRU units which will be included in the system in forthcoming years in order to increase entry point capacities.

SYSTEM ENTRY CAPACITIES

- Increasing the daily flow capacities of Turkish entry points Turkey has a 211 MCM entry point capacity, it is anticipated that it will reach to a level of 250 – 280 mcm by 2019 and 300 MCM later.
- Marmara and Aliaga 4th Tank. Increasing the send-out capacity at Marmara LNG terminal by 9 MCM, Aliağa LNG terminal by 8 MCM until 2017 winter
- Increasing the send-out capacity at Silivri underground storage by 5 MCM
- BOTAŞ will start to operate a FSRU (Floating Storage Regasification Unit) of 20 mcm capacity in three different places.
- TANAP Project will have first flow of natural gas in 2018 June, This could bring extra entry capacities for Turkey up to 6.0 bcm.
- Including the TANAP and Tuz Gölü underground storage facilities, daily entry capacity of Turkey is targeted to reach 300 mcm

CHALLANGES

- New Gas Supply Sources, Israel gas, Iranian additional capacity, Turkish Stream, KRG Gas
- Structure of BOTAS, unbundling
- Inadequacy of legislation and regulation
- Pipeline and Underground Storage Capacity
- Incentives towards storage and LNG terminal investments that require huge investments
- Amendment of Gas Law

THANK YOU

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Thanks to PETFORM and Ridvan Ucar Aygaz.

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