

# TURKISH ENERGY Overview and the Policy

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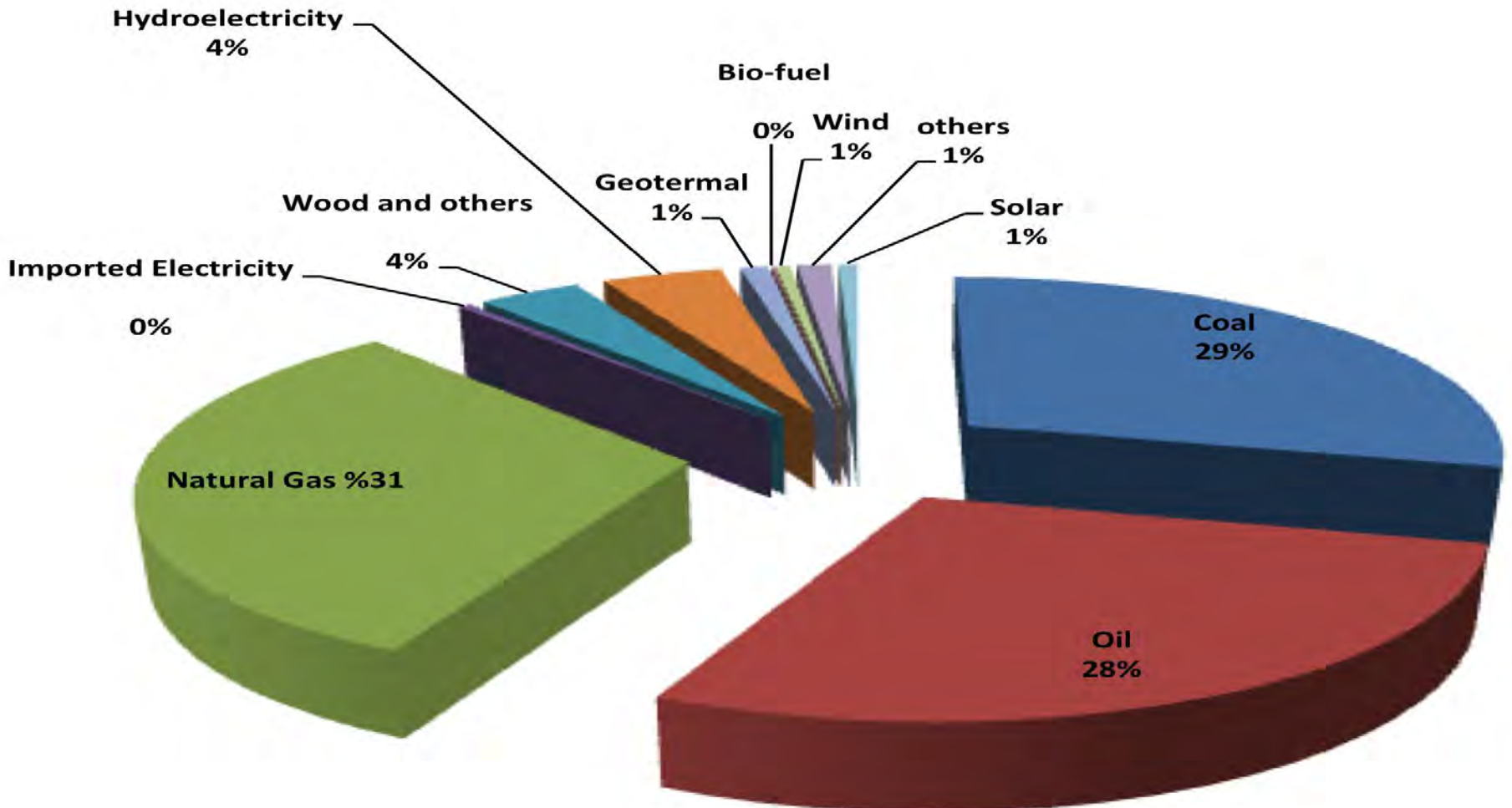
12/11/2015, Athens

# Turkish Primary Energy Consumption by fuel 2014 (mtoe)

Foreign Dependency Rate: %75!

OIL	GAS	COAL	HYDRO	WIND SOLAR GEO-	TOTAL
34	43.5	35.8	9	3	125.3

# Turkish Energy Mix-2014



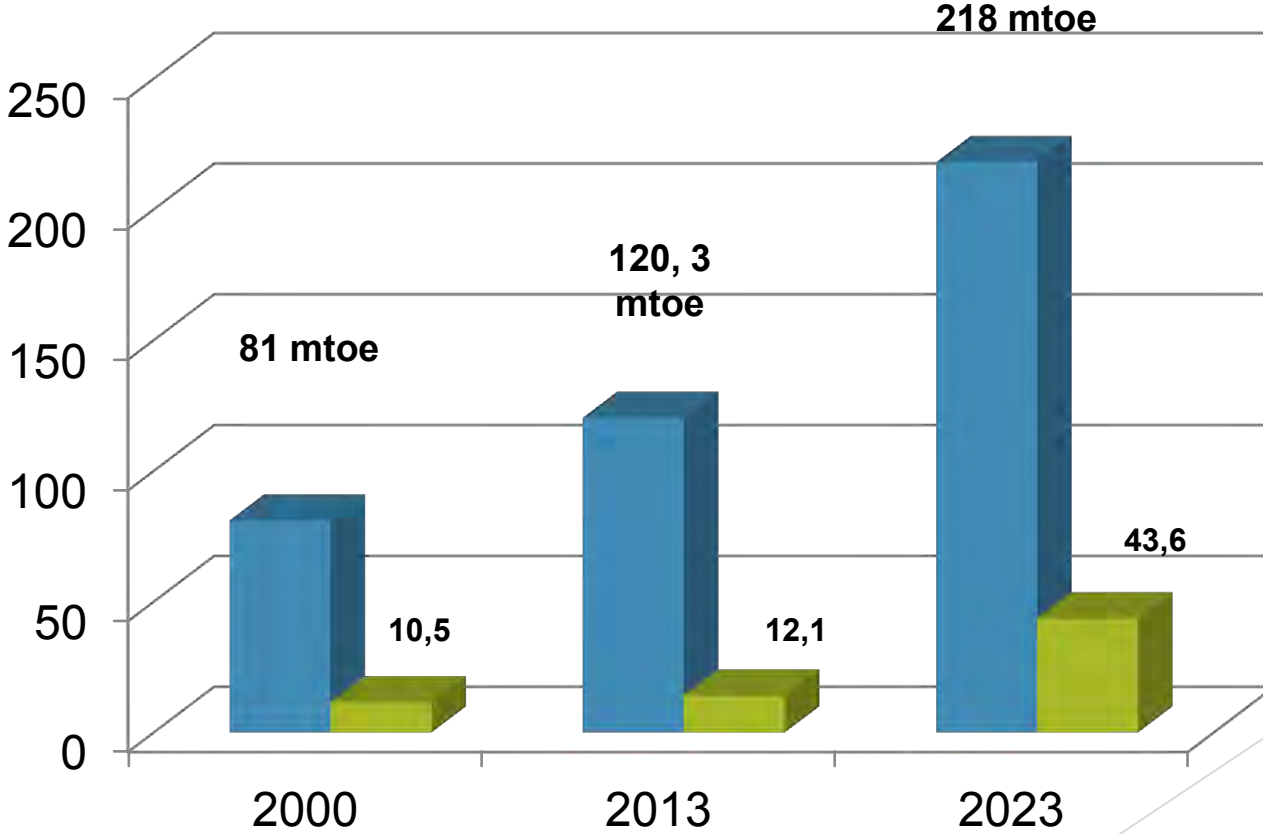
# Turkey Energy Overview (1990 – 2013)

	1990	2013	Change
Total Energy Demand ( <i>mtoe</i> )	52,9	122,29	↑ %127,39 ↑
Total Domestic production ( <i>mtoe</i> )	25,6	31,94	↑ %24,78 ↑
Total Energy Imports ( <i>mtoe</i> )	30,9	98,29	↑ %211,62 ↑
Self-sufficiency in Energy	% 48	% 26,5	↓ - %40,63 ↓

# Turkey Hydrocarbon Imports: World Ranking (2014)

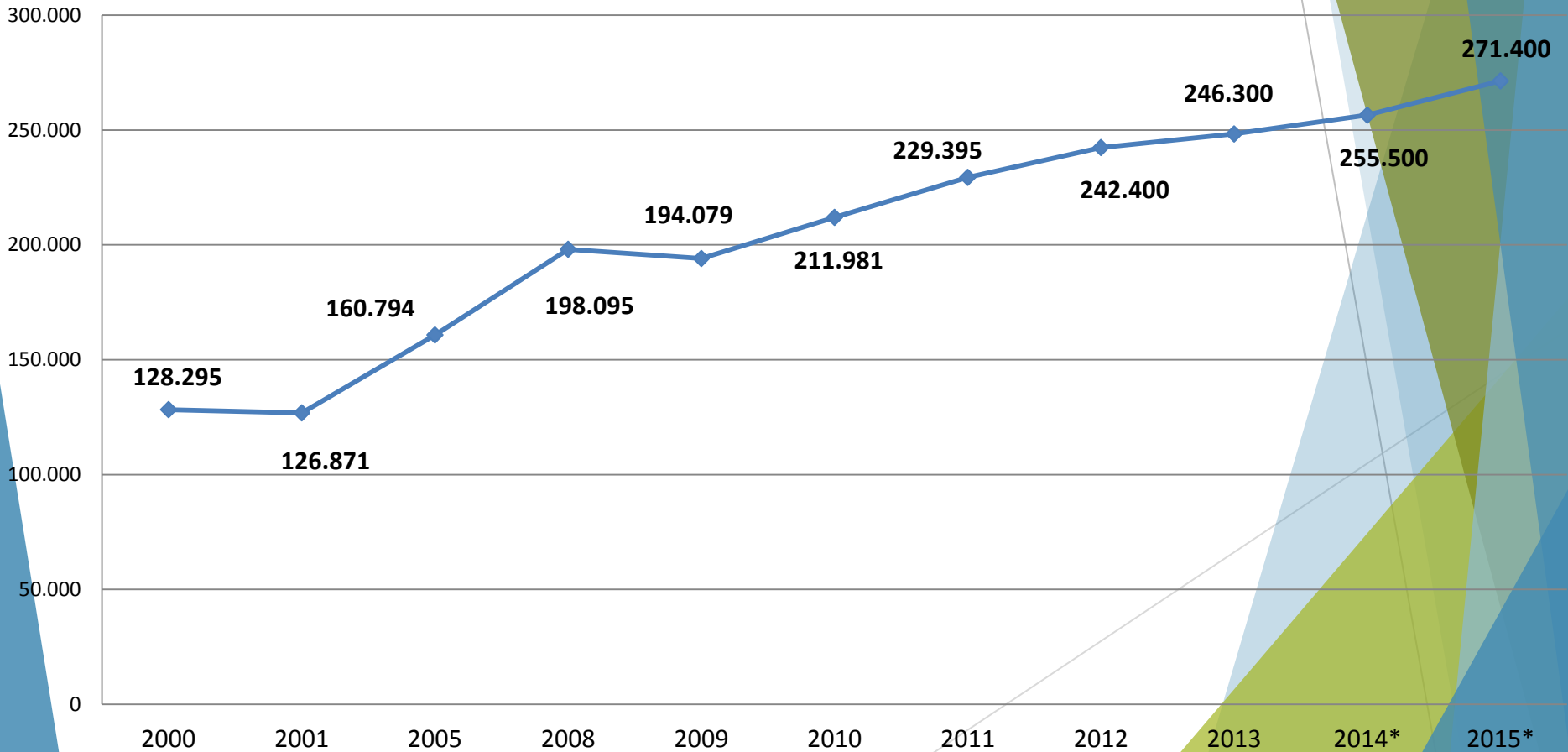
<b>SOURCE</b>	<b>IMPORT</b>	<b>WORLD RANKING</b>
<b>NATURAL GAS</b>	50 BCM	<b>5.</b>
<b>OIL</b>	35 Mto	<b>13.</b>
<b>COAL</b>	30 Mto	<b>8.</b>

## Turkey: Primary Energy Consumption and Renewables



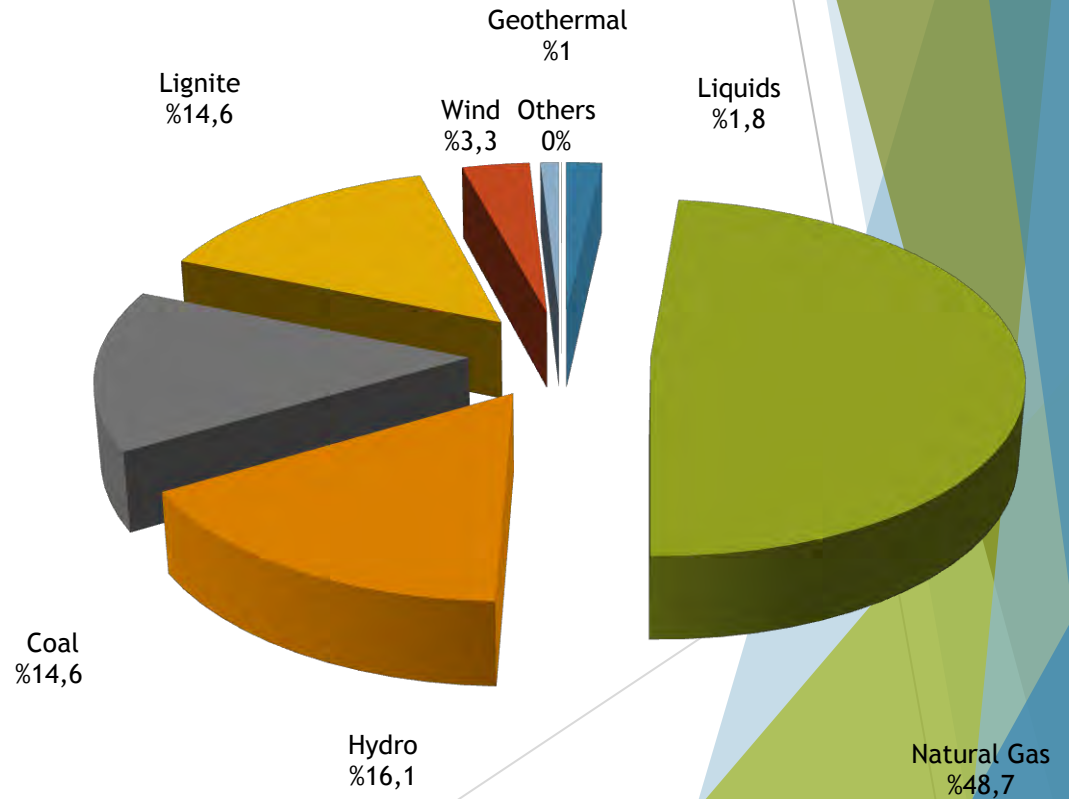
■ Birincil enerji tüketimi  
■ Yenilenebilir kaynaklar

## Electricity Consumption (GWh) 2000-2015



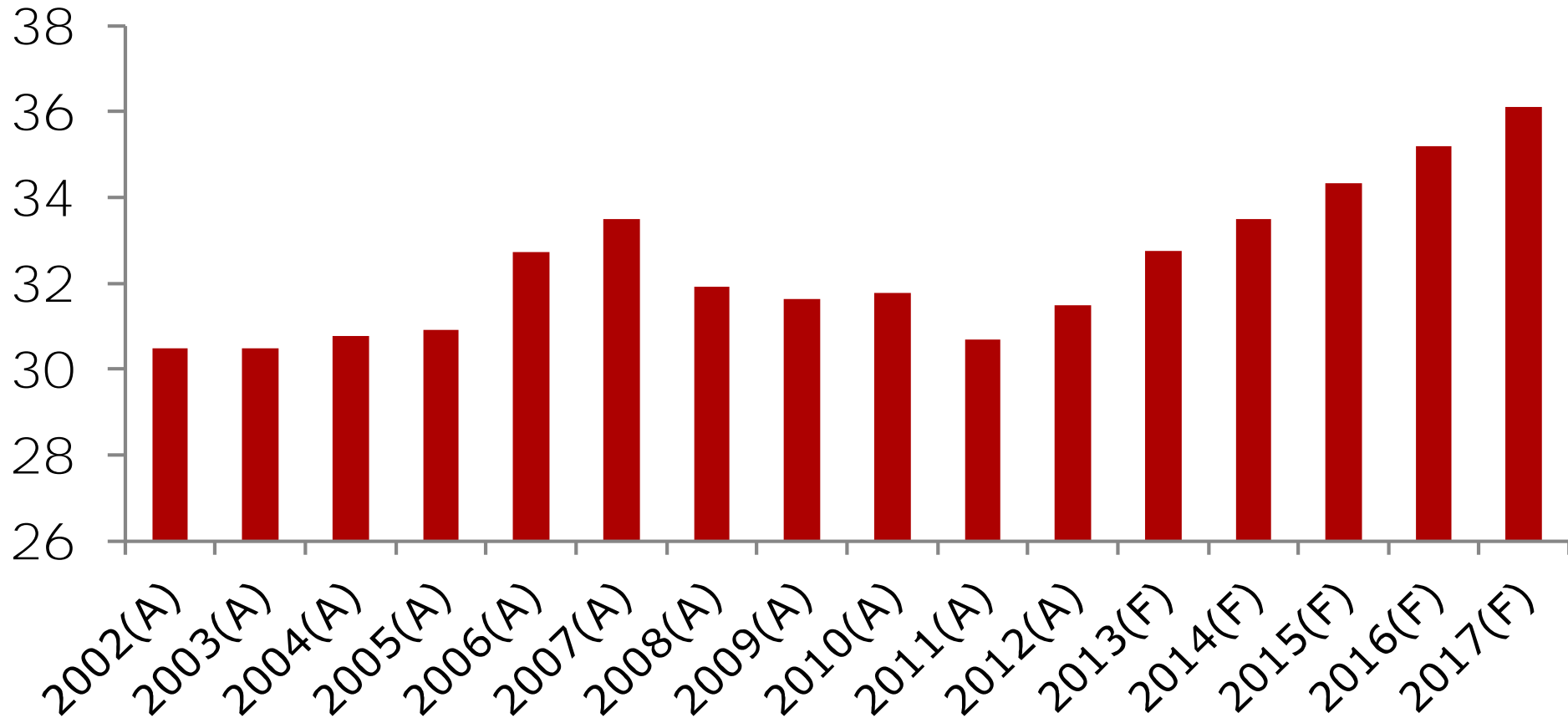
## Power Generation by Sources (2014)

Source	Generation (MWH)	(%)
Liquids	4.423,70	1,8
Natural Gas	121.843,80	48,7
Hydro	40.401,80	16,1
Coal	36.637,70	14,6
Lignite	36.413,40	14,6
Wind	8366,8	3,3
Geothermal	2251,8	1
Others	42,3	0
<b>Total</b>	<b>250381,2</b>	<b>100</b>

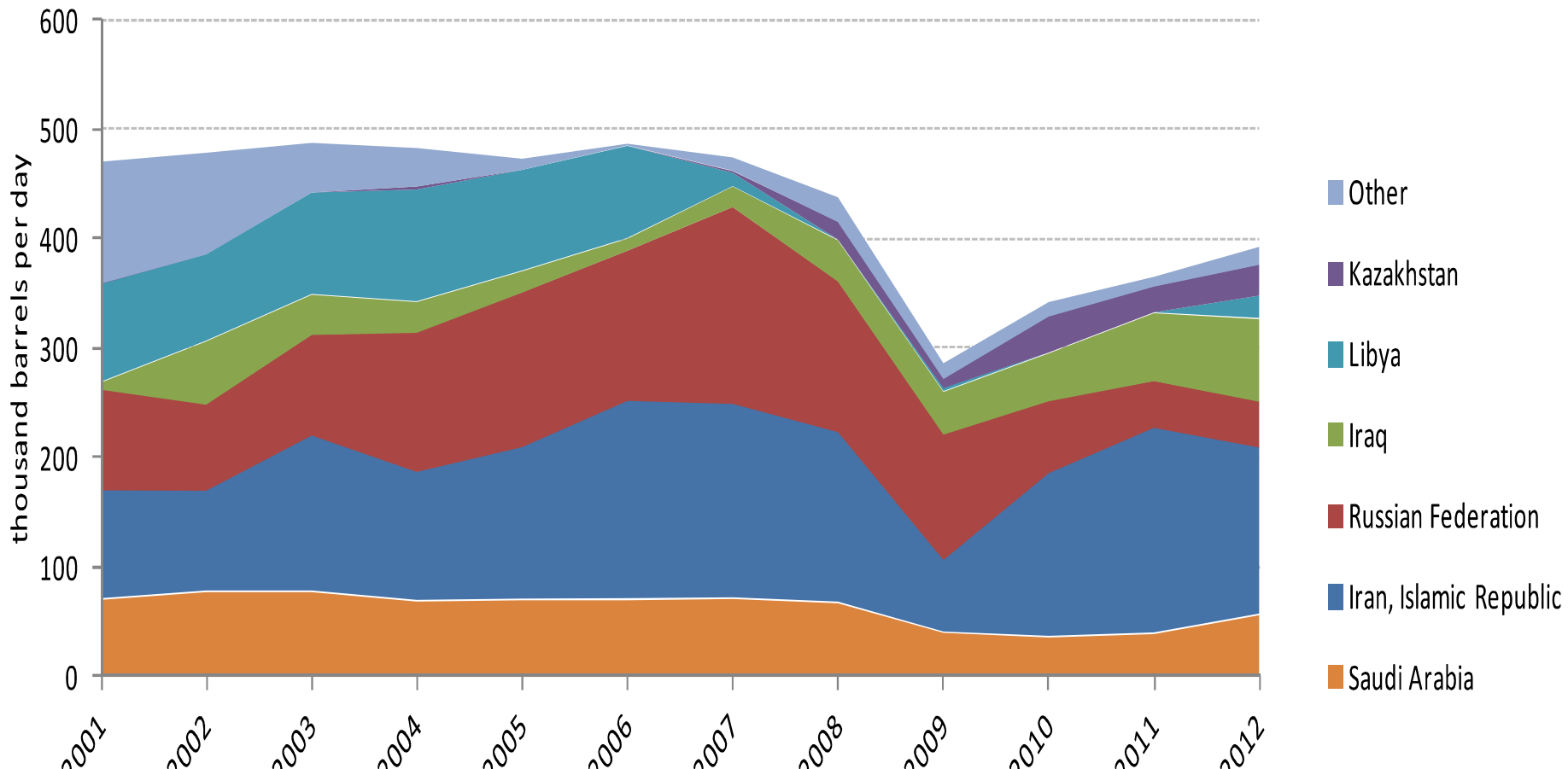




# Oil Consumption Million Tons






## Turkish Oil Imports by Source (2001-2012)



## Turkey & International Energy Projects



 **OIL**    **NATURAL GAS**    **LNG**

Turkey as a Regional Oil and Gas Hub

# Fundamentals of Turkish Energy Policy

## TURKEY GEOGRAPHICALLY BETWEEN TWO WORLDS

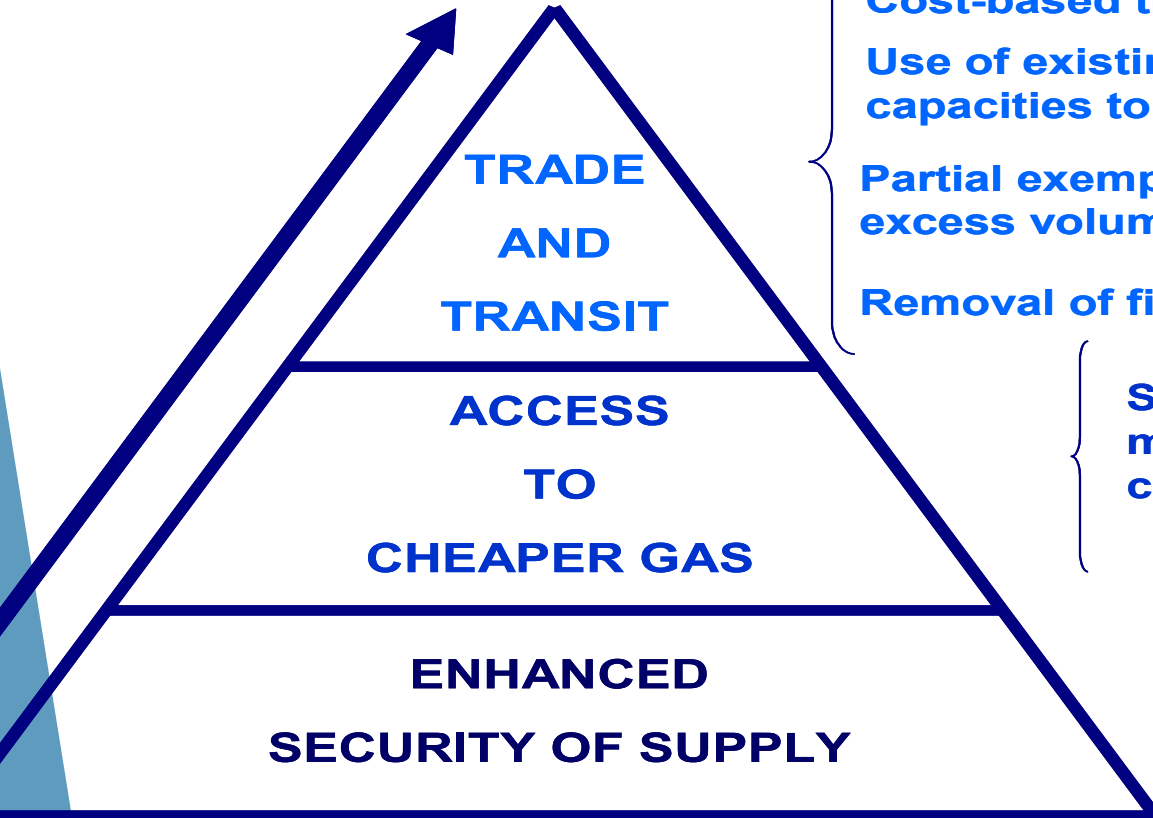
- \* In its East producers/exporters; In its West consumers/importers
- \* In its East monopolistic markets; In its West liberalized energy markets
- \* In its East mainly autocratic regimes; In its pluralistic democracies

Turkish oil, gas production is not significant and energy is the main cause of high current account deficit. Turkey will remain as a net importer of hydrocarbons and dependent on Russia, Iran for foreseeable future.

International pipeline projects are seen as a tool to balance this overdependence

Turkey needs to invest in its infrastructure while keeping the energy consumption sustainable

## Main Aims of Turkish Energy Policy



**Cost-based transmission tariffs**

**Use of existing infrastructure and idle capacities to the extent possible**

**Partial exemption from TPA for trading of excess volumes**

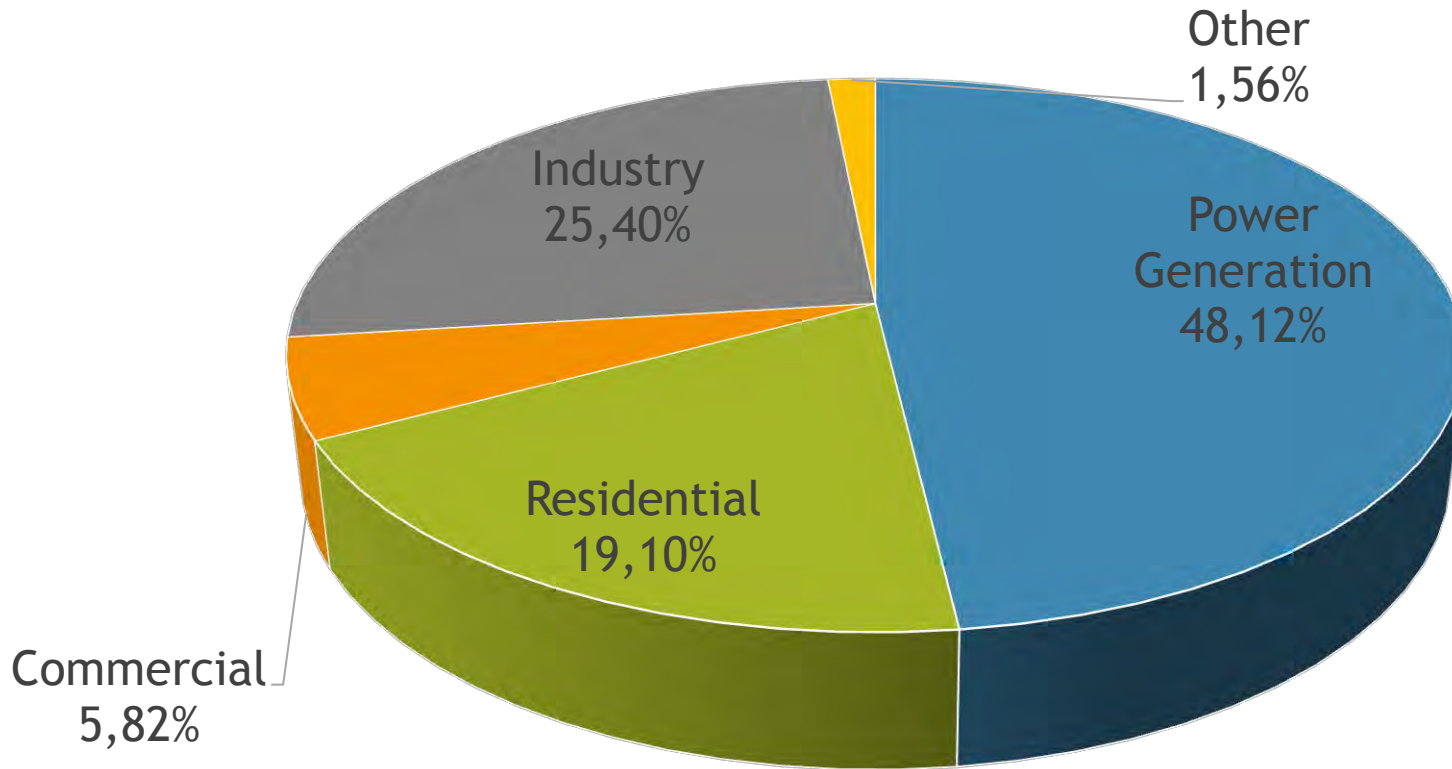
**Removal of final destination clauses**

**Some kind of netback price mechanism for domestic consumption**

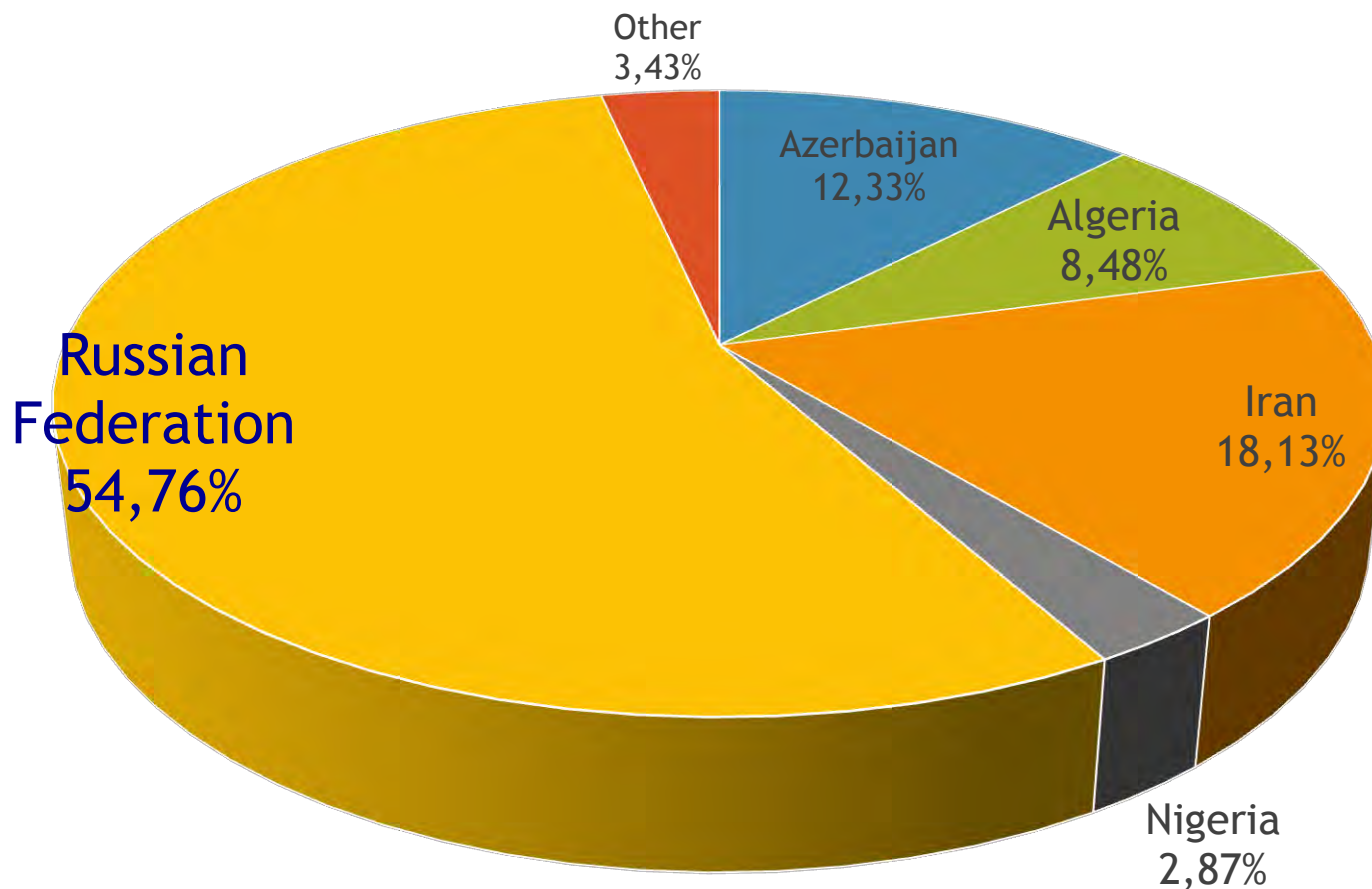
**Balanced diversification of supplies**

**Underground storage capacities serve both domestic market and end consumers in Europe**

# Turkish Gas Consumption by Sectors (48,717 bcm 2014)



## Turkish Gas Imports by Source (2014)



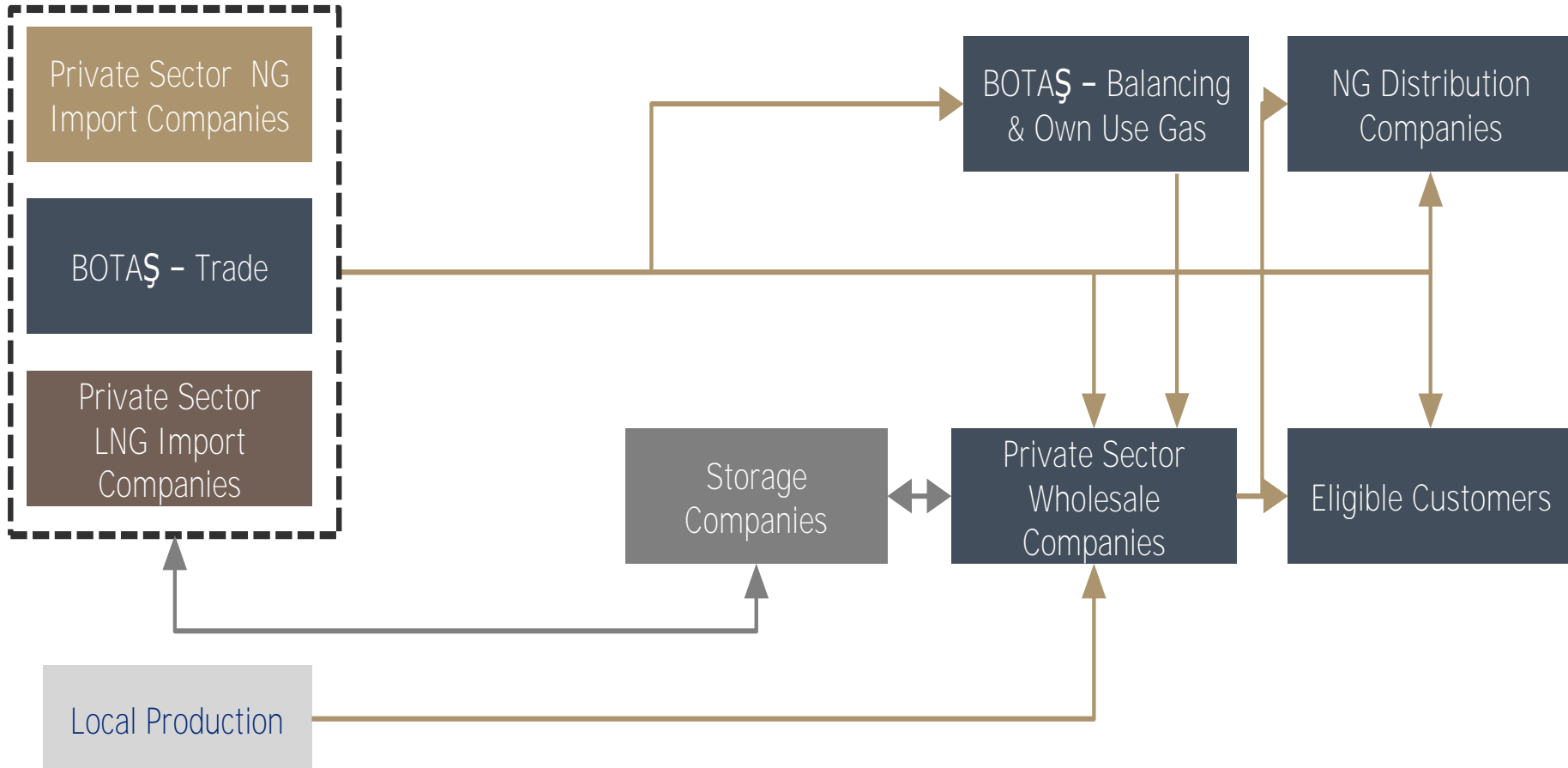
Exploration &  
Production, Import

Transmission

Storage

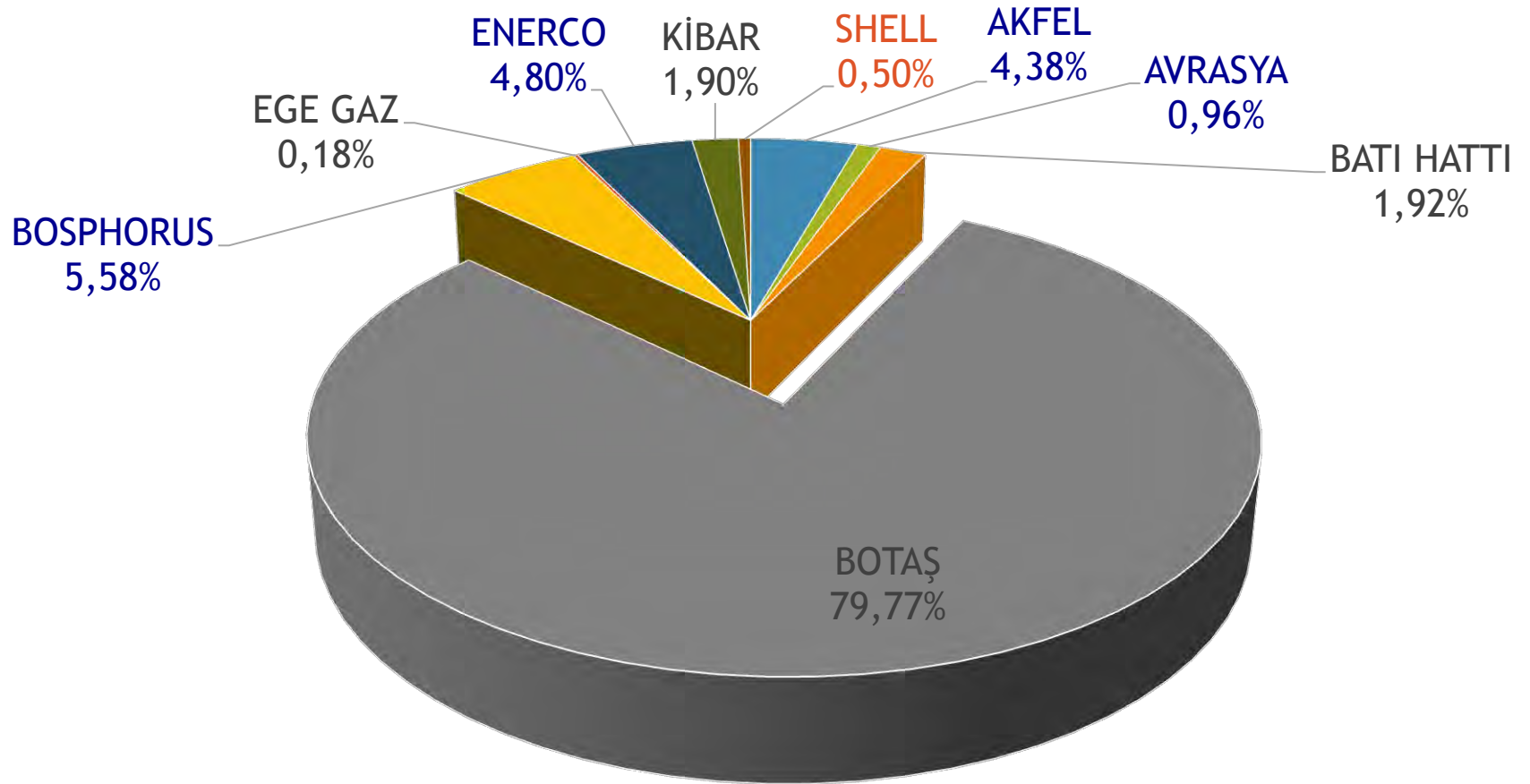
Wholesale

Distribution &  
Retail





## Turkish Gas Suppliers (2014)



# EUROPEAN GAS PRICING

## Spot Market---2008: %15 2014: %60

REGION	OIL PRICE INDEX in LTCs	GAS on GAS (Spot)
North West Europe	%20	%80
Central Europe	%50	%50
Mediterranean Europe	%85	%15
Turkey	%97	%3

Sources: OIES and Turkish EMRA

# TURKISH IMPORTS and GAS PRICING Spot Market---2008: %3 2014: %3!

\*Share of Spot Imports was remarkable only in 2010 (9 %)

\*Before 2008 and now it is about 2-3 %. 2010 was the exception year because of sharply falling LNG prices and relatively strong Turkish Lira. However, why European trend of decoupling of gas prices from oil prices has not been observed in Turkey further?

\*European' trends in Turkey slowed down after 2010 when European economies fell into recession and EU accession started to be non-attractive for Turkey. Rather LTCs have been seen as the main pillar of energy security. Russian companies are expanding its activities in Turkish downstream.

\*In terms of pattern of trade, legislation and operation; **TURKISH GAS MARKET HAS BEEN DECOUPLING FROM EUROPEAN ONE IN A TIME WHEN THE GAS PRICES ARE DECOUPLING FROM OIL IN THE LATTER**

# Why are the LTCs still dominating the Turkish Gas Market?

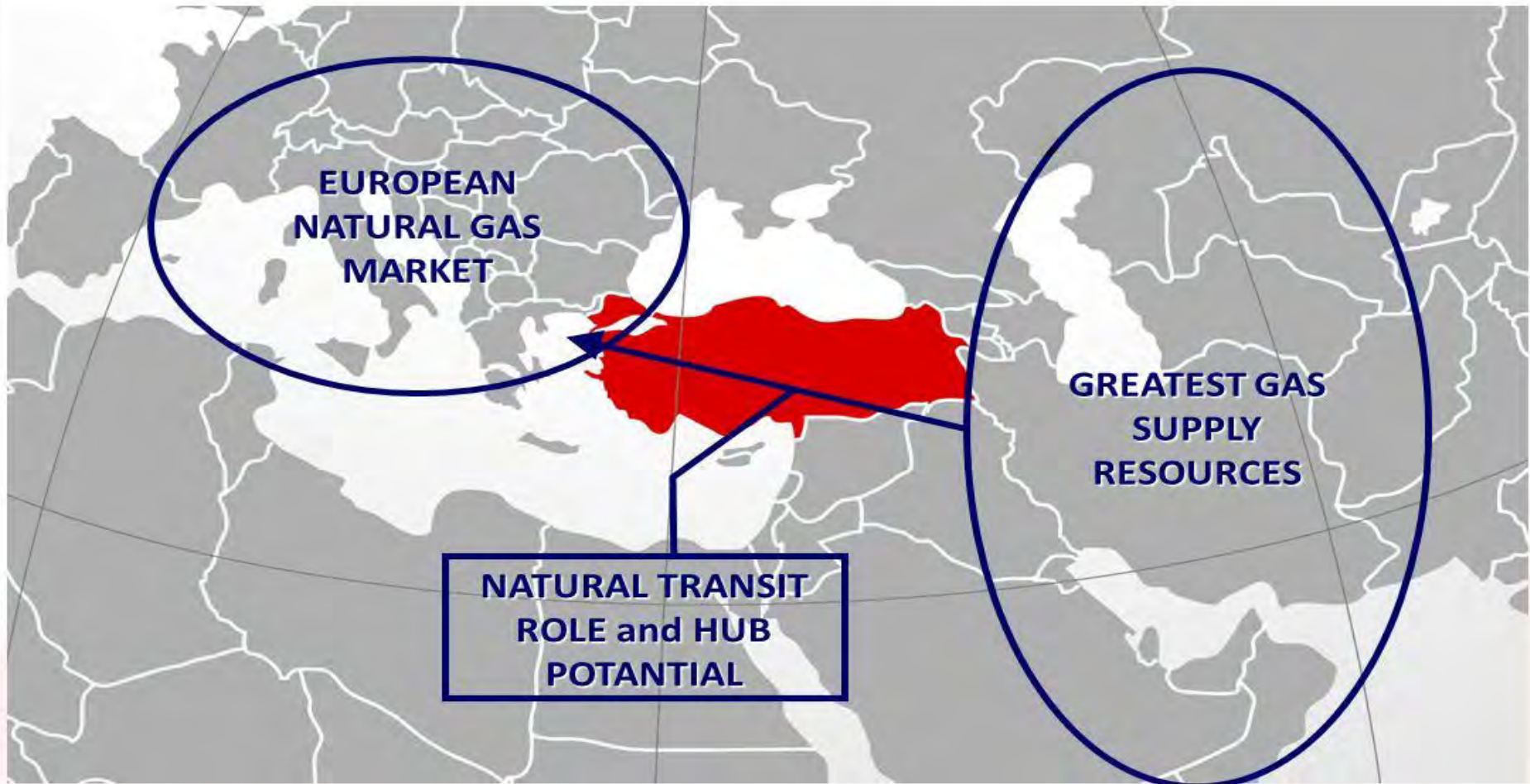
- ▶ For 5 years between 2011-2015 Government adopted policy of cross-subsidy for domestic gas sales (Regulated prices). Average import price \$300/mcm has been nearly 10% more than domestic sale prices of BOTAŞ in 2015.
- ▶ There is not any gas hub in Turkey and the Stock Exchange for Energy Commodities (EPIAŞ) was only formed in 2015. Future trade of gas?
- ▶ Market development -Turkish Gas Market has only become mature in 2015 with 50 bcm/a consumption, means no anxiety for Take or Pay obligations.
- ▶ Full liberalization in import and domestic market is needed as well as investment in infrastructure (especially storage)
- ▶ Gas Exporters to Turkey (Gazprom-NIGC-SOCAR-Sonatrach) are not interested in hub pricing neither

# A repeat of European Hybrid Model in 2020s?

## Gas Imports of Turkey (bcm) and LTCs



## Natural Bridge



The provision of reliable, clean, diverse and ample supplies of energy at affordable prices and adequate infrastructure to deliver these supplies to the market.

**THREE PILLARS of the Concept**

1. Security of Supply (for importers)
2. Security of Demand (for exporters)

### 3. Transit Security (for all actors!)

**Geopolitics of Pipelines:** Selection of route of transportation confers political muscle on those who have them. Thus, decision-makers observe strategic interests even when commercial criteria would dictate otherwise. Geopolitics of pipeline is the most important part of the concept. Because;

**Whoever controls the lifeline of transportation in fact controls the *energy* resources!**



# EU-RUSSIA-TURKEY Energy Triangle

- ▶ **EU:** Diversification of Supply --- Diminishing Overdependence on Russia: “Southern Gas Corridor”
- ▶ **Russia:** Diversification of Route ---- Avoiding transit risks and Consolidation of Gazprom’s position in Europe: “South Gas Ring” IGAs
- ▶ **Turkey:** Diversification of Supply--- Geographical Position Seeking Influence with new Allies: Participation into East-West Energy Corridor and North-South energy projects

# EU-RUSSIA-TURKEY Energy Triangle

- ▶ There is already a Turco-Russian energy cooperation: Blue Stream! But Turkey has always had an ambivalent position both against the European Union and Russia.
- ▶ **Turkey**, did not fully support Nabucco although it was partner. Both Turkey and European countries have common problems like Russian energy dependence and anxiety for import diversification. Turkey does not want to position itself a solely energy transit country for EU.
- ▶ On the other hand, in its energy relations with Turkey, **the EU is not eager to have another Gazprom in its immediate neighborhood and Russia'd not want to see a second Ukraine in its gas transit to European markets.**

## SOUTHERN GAS CORRIDOR

- ▶ **Shah Deniz 2 + SCP:** BP-TPAO-SOCAR \$28 billion upstream investment
- ▶ **TANAP:** SOCAR 58 %, BOTAŞ 30 %, BP 12 %
- ▶ \$ 12 billion investment for 1800 km pipeline (16+15 bcm).  
International but not cross border
- ▶ Construction started in 2015 and to be financed by shareholder equity
- ▶ **TAP:** STATOIL 20% SOCAR 20% BP 20% FLUXYS 19% ENEGAS 16% AXPO 5%
- ▶ International funding of \$5 billion for 870 km pipeline (10+10 bcm).  
International and cross border
- ▶ Exemption from EU 3<sup>rd</sup> Party Access, Construction in 2015/6

# RUSSIAN GAS STRATEGY 2020 and the TURKISH STREAM

- ▶ **Gazprom: Export to Europe: 2013=159 bcm 2014=147 bcm**
  - ▶ **2020 Forecast =130-145 bcm (Increasing Competition)**
- ▶ Nord Stream: 55 bcm (OPAL) + Nord Stream 2
- ▶ Yamal: 33 bcm
- ▶ Northern Light:
- ▶ Blue Stream: 16 bcm
- ▶ Total: 126 bcm
- ▶ **“Turkish Stream?”: 31.5 bcm (Sufficient capacity!)**

## RUSSIAN GAS PIPELINES TO EUROPE



**RUSSIAN GAS SUPPLIES TO EUROPE**  
bln cu m

**GAS PIPELINES CAPACITIES**

"Nord Stream"

"Yamal-Europe" through Belarus

"Blue Stream"

"Turkish Stream"

"Yamal-Europe-2"

## “TURKISH STREAM”: IMPLICATIONS FOR TURKEY

- ▶ Benefit: Just transforming from ‘end user’ to ‘intermediate user’?
- ▶ Physical Hub in Greek Border! What if Turkey becomes transit and Greece becomes hub?
- ▶ Rather a virtual hub (Eurasian gas hub) in Turkey with Russian partnership?
- ▶ Turkey-Greece/TAP/Reverse flow to Bulgaria?
- ▶ For Russia is it easy to finance those projects in a time of sanctions?
- ▶ Competition: Between Turkish Stream and TANAP or between Turkish Stream and Akkuyu Nuclear Power Plant?

► **THANK YOU FOR YOUR  
ATTENTION!**

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