



Trends & Dynamics of Turkish Natural Gas Market

Gas to Power Turkey 2013
March 13, 2013 – Istanbul

Orhan Duran
Chairman of the Board

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:

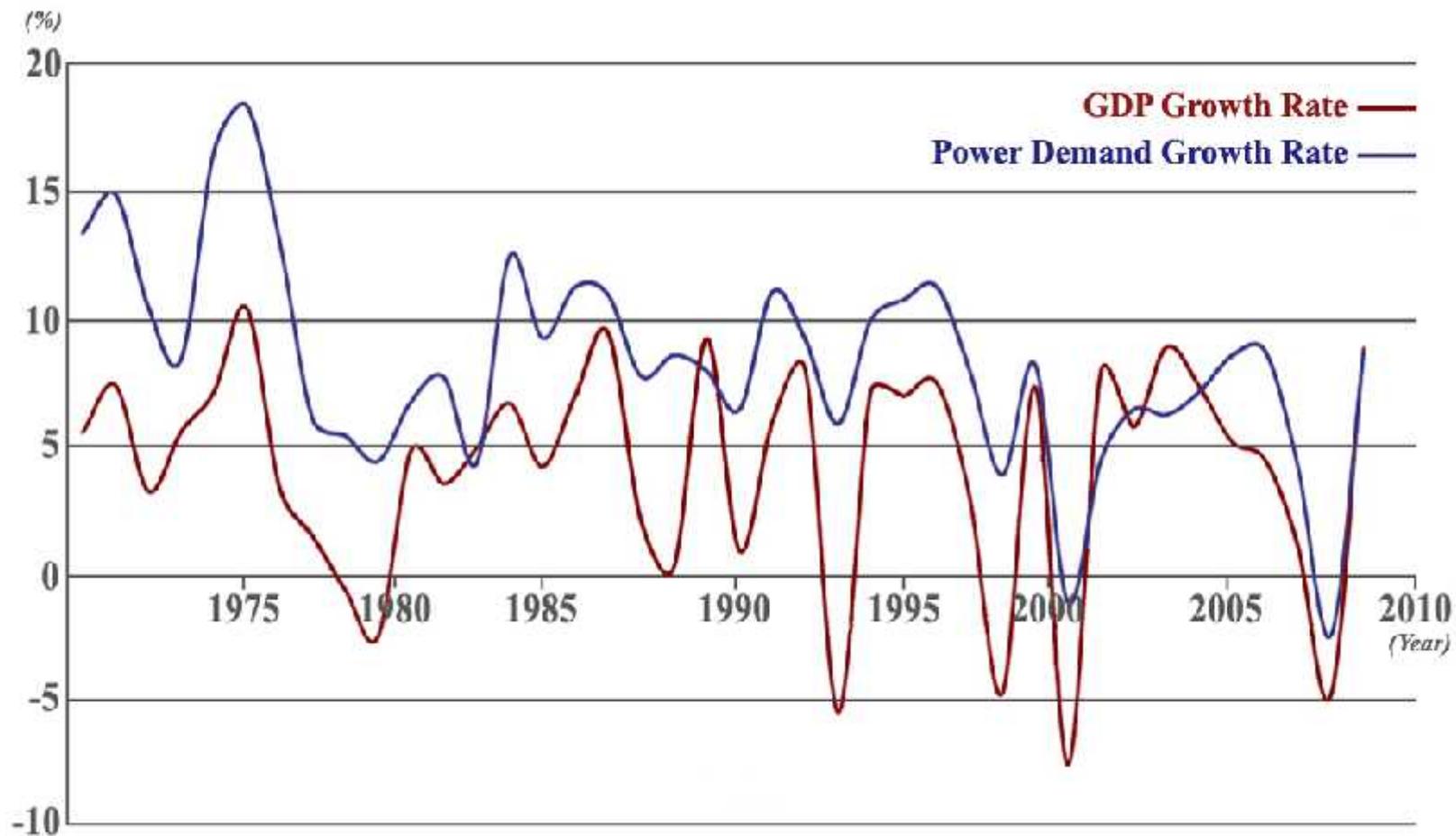
- Exploration & Production Sector
- Natural Gas Market

Member Companies



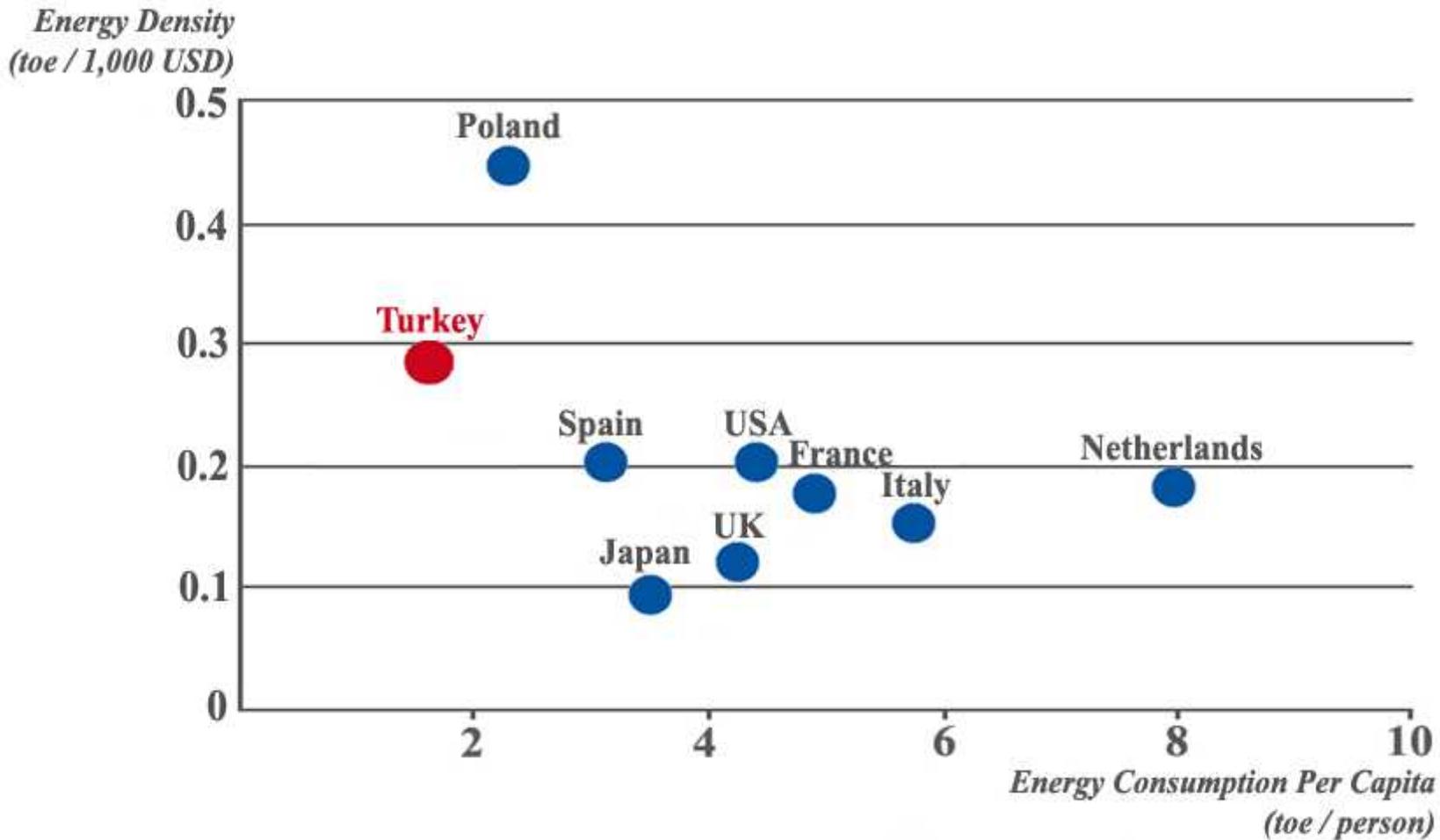
- AKENERJ
- AKFEL
- AKSA
- ALADDIN MIDDLE EAST
- ANATOLIA ENERGY
- ANGORAGAZ
- ATT LA DO AN N AAT
- AVRASYA GAZ
- AYGAZ
- BATI HATTI GAZ
- BM HOLD NG
- BOSPHORUSGAZ
- BP
- ÇALIK ENERJ
- DEM RÖREN EGL
- DO AL ENERJ
- DO AN ENERJ
- EDISON
- EGEGAZ
- ENEL
- ENERCO ENERJ
- ENERJ SA
- ENI
- ERDGAZ
- EWE ENERJ
- EXXONMOBIL
- GDF SUEZ
- GENEL ENERGY
- GÜNEY YILDIZI PETROL
- HATTU A ENERJ
- IBS RESEARCH
- K BAR ENERJ
- MARSА ENERGY
- MEDGAZ
- NATURGAZ
- OMV
- PALMET ENERJ
- PERENCO
- POLMAK
- POZ T F DO ALGAZ
- SHELL ENERJ
- SOCAR
- STATOIL
- TEKFEN N AAT
- THRACE BASIN
- TIWAY
- TOTAL
- TRANSATLANTIC PETROLEUM
- TURCAS
- VALEURA ENERGY
- VALVITALIA
- ZMB GAZ DEPO
- ZORLU ENERJ

GDP vs Power Demand Growth (1970 – 2010)



Source: Energy Market Regulatory Authority

Energy Density vs Energy Consumption Per Capita



Source: Turkey Energy Efficiency Report (2010)

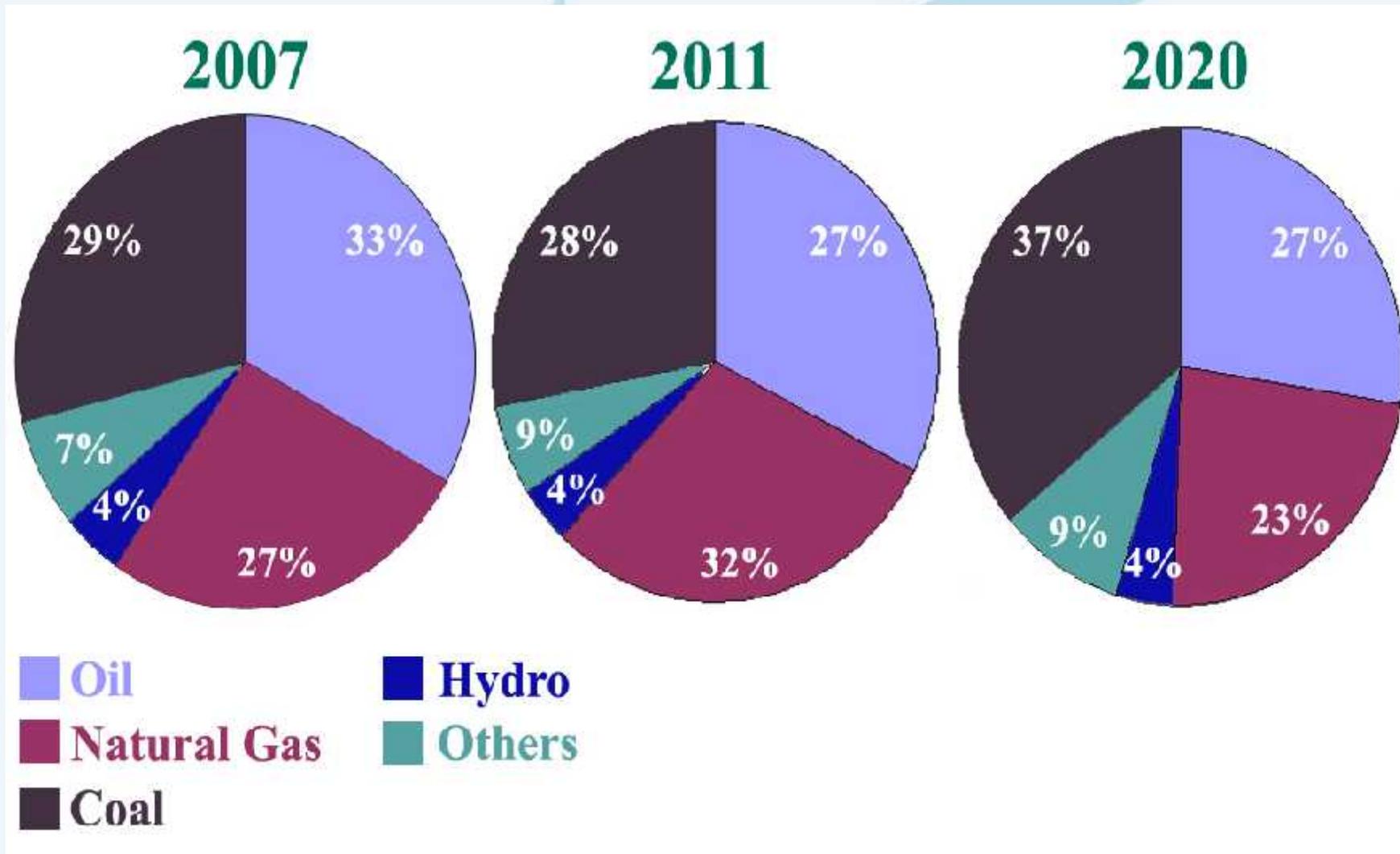
Change in Energy Balance (1990 – 2011)



| | 1990 | 2011 | Change |
|---------------------------------------------------------|------|-------|--------|
| Total Energy Demand (million toe) | 52.9 | 114.4 | 116% |
| Total Domestic Production (million toe) | 25.6 | 32.2 | 26% |
| Total Energy Imports (million toe) | 30.9 | 90.2 | 196% |
| Coverage of Domestic Production to Total Consumption | 48% | 28% | - 41% |

Source: Ministry of Energy and Natural Resources

Energy Consumption by Source (2007 – 2011 – 2020)



Source: Ministry of Energy and Natural Resources

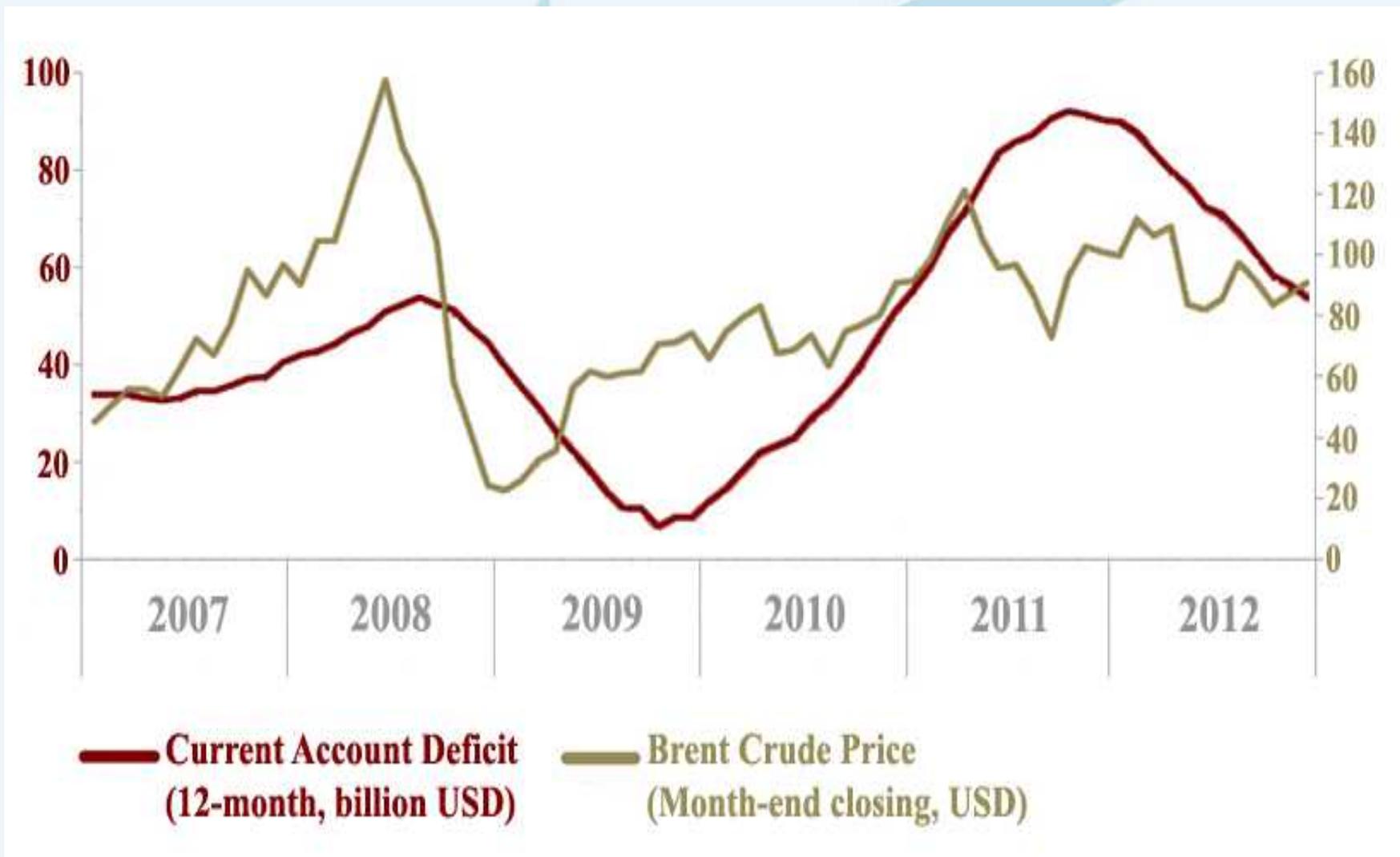
Share of Energy in Turkey's Total Imports (2009 – 2012)



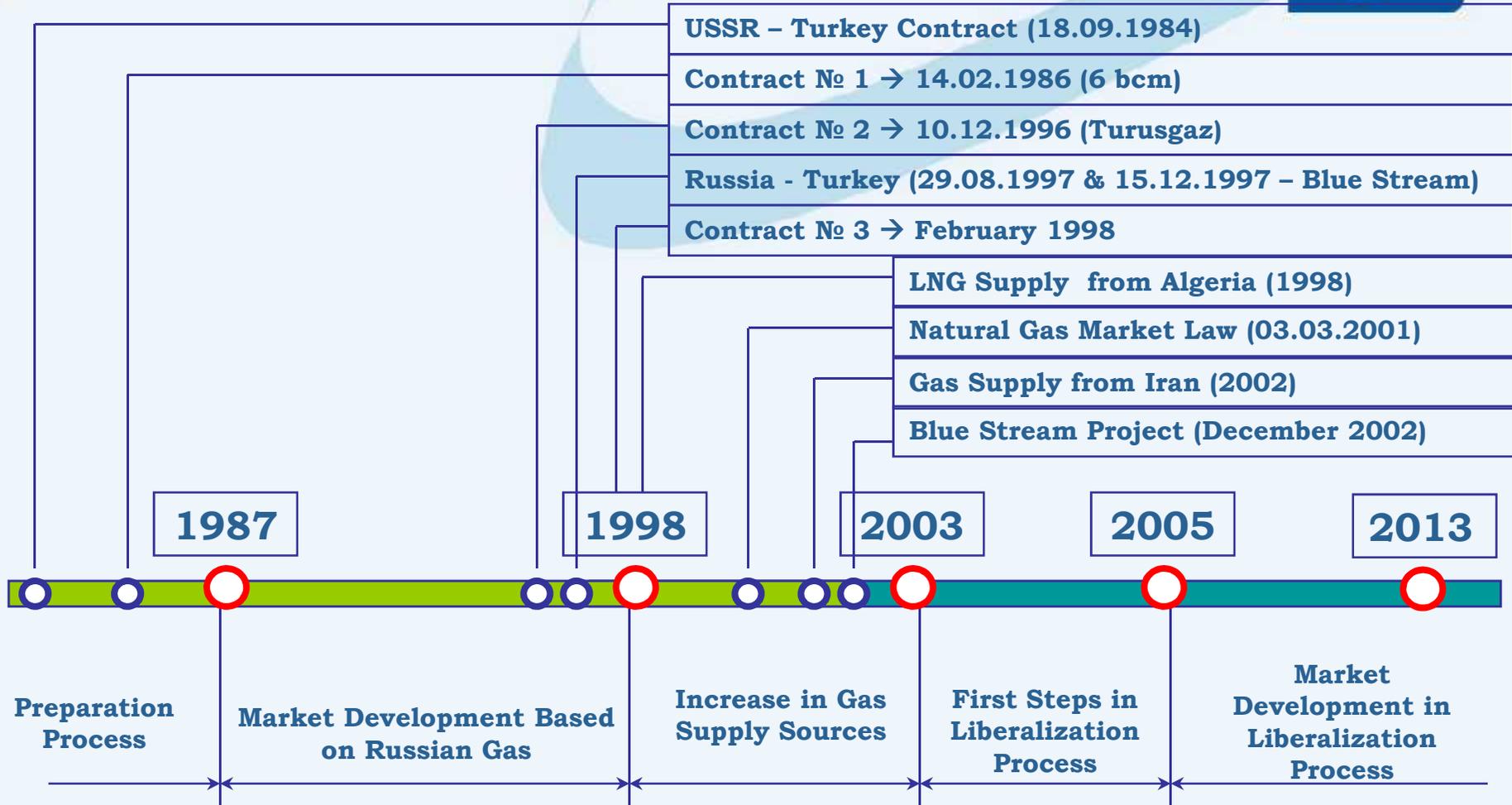
| (billion USD) | 2009 | 2010 | 2011 | 2012 |
|----------------------------------------------|-------|-------|-------|-------|
| Crude Oil & Petroleum Products | 14.9 | 20.6 | 29.2 | 31.5 |
| Natural Gas | 11.6 | 14.1 | 20.2 | 23.2 |
| Coal | 3.1 | 3.3 | 4.1 | 4.6 |
| Total Energy Imports | 29.9 | 38.5 | 54.1 | 60.1 |
| Turkey's Total Imports | 140.9 | 185.5 | 240.8 | 236.5 |
| Share of Oil & Gas in Turkey's Total Imports | 18.8% | 18.7% | 20.5% | 23.1% |

Source: Ministry of Economy

Current Account Deficit vs Oil Price (2007 – 2012)



Development Process of Turkish Natural Gas Market



Gas Purchase Agreements



| Contract | Date of Signature | Date of Operation | Duration (Years) | Volume (Plateau bcma) | Date of Expiration |
|-------------------|-------------------|-------------------|------------------|-----------------------|--------------------|
| Russia (West) | Feb 1986 | Jun 1987 | 25 | 6 | 2012 |
| Algeria (LNG) | Apr 1988 | Aug 1994 | 20 | 4 | 2014 |
| 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 | 8 | 2021 |
| Azerbaijan | Mar 2001 | Jul 2007 | 15 | 6.6 | 2022 |

Source: Energy Market Regulatory Authority

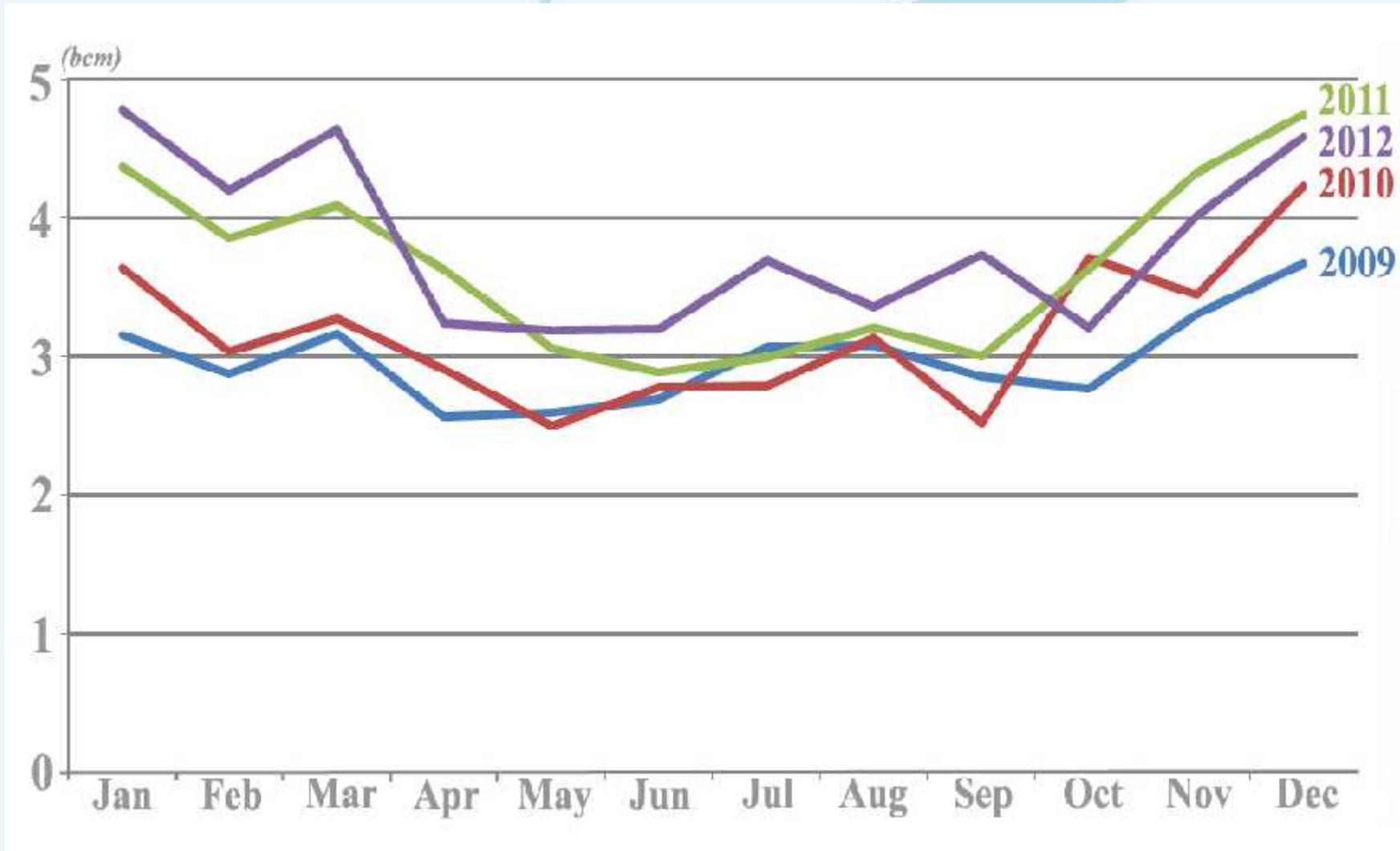
Gas Imports by Source Country (2009 – 2010 – 2011)



| (bcm) | 2009 | 2010 | 2011 | Share in Total (2011) |
|---------------|---------------|---------------|---------------|-----------------------|
| Russia | 19.473 | 17.576 | 25.406 | 57.9% |
| Iran | 5.252 | 7.765 | 8.190 | 18.7% |
| Azerbaijan | 4.960 | 4.521 | 3.806 | 8.6% |
| Algeria (LNG) | 4.487 | 3.906 | 4.156 | 9.5% |
| Nigeria (LNG) | 0.903 | 1.189 | 1.248 | 2.8% |
| Spot LNG | 0.781 | 3.079 | 1.069 | 2.5% |
| Total | 35.856 | 38.036 | 43.874 | |

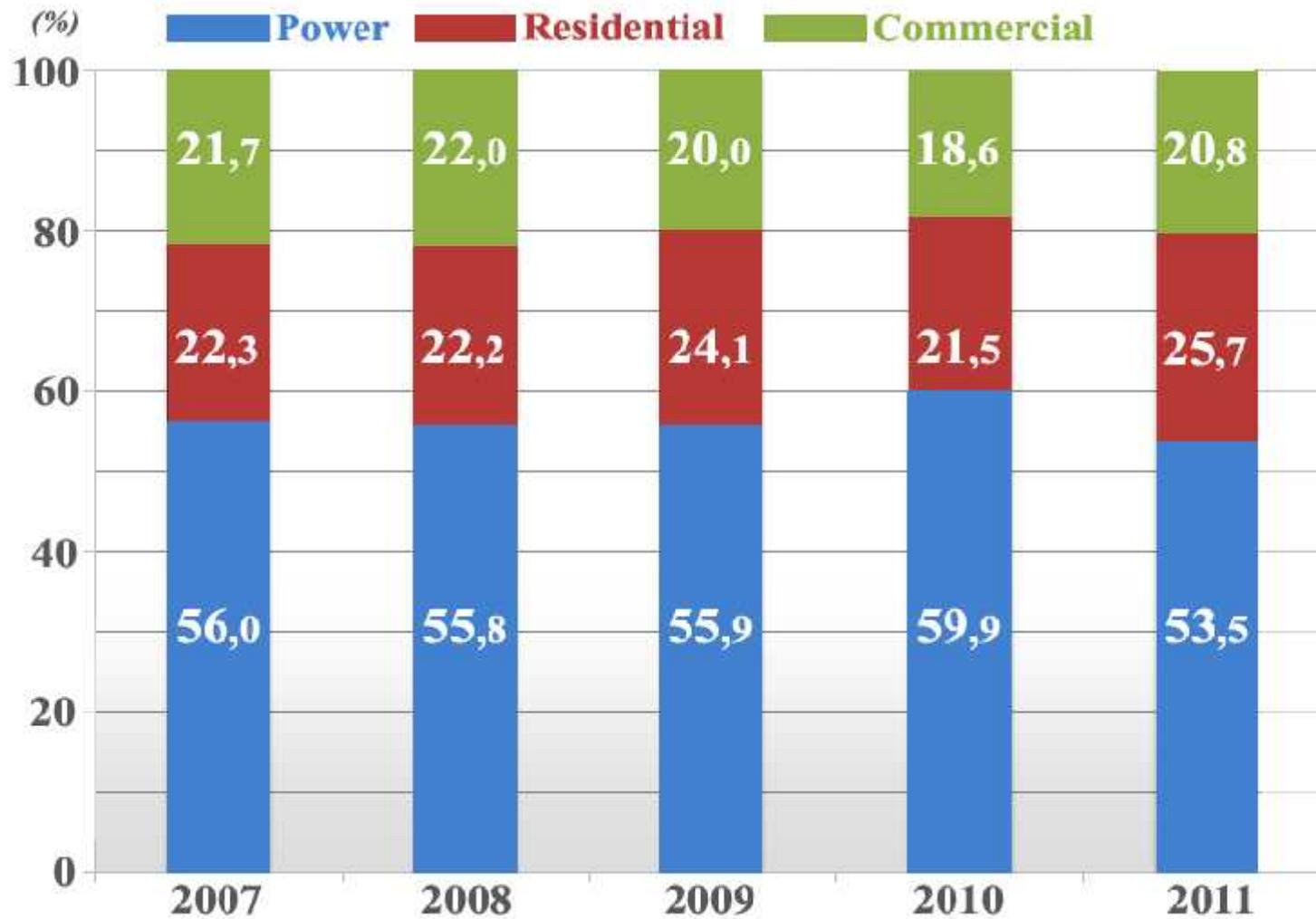
Source: Energy Market Regulatory Authority

Gas Consumption by Month (2009 – 2012)



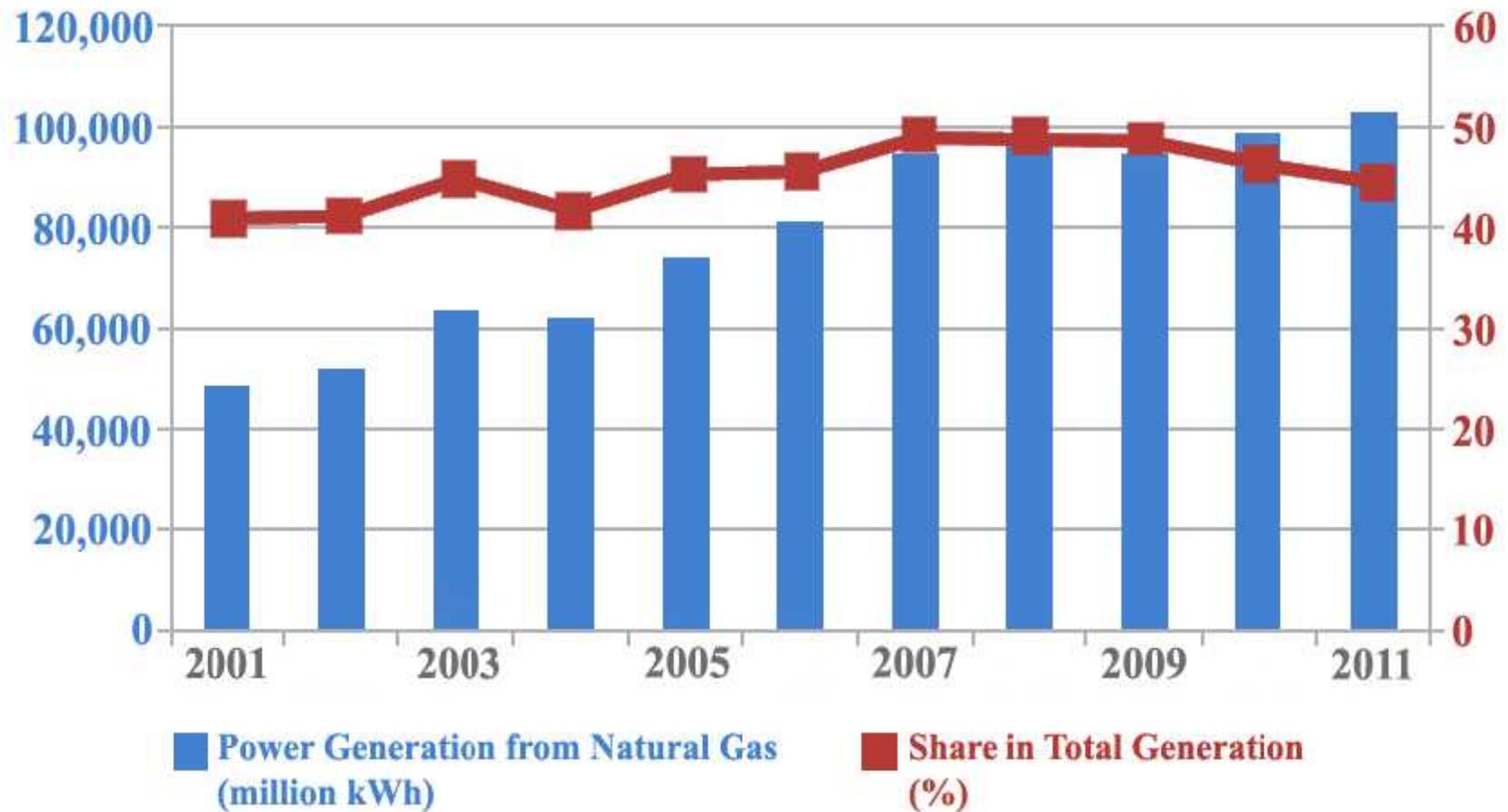
Source: Energy Market Regulatory Authority

Sectoral Breakdown of Gas Consumption (2007 – 2011)



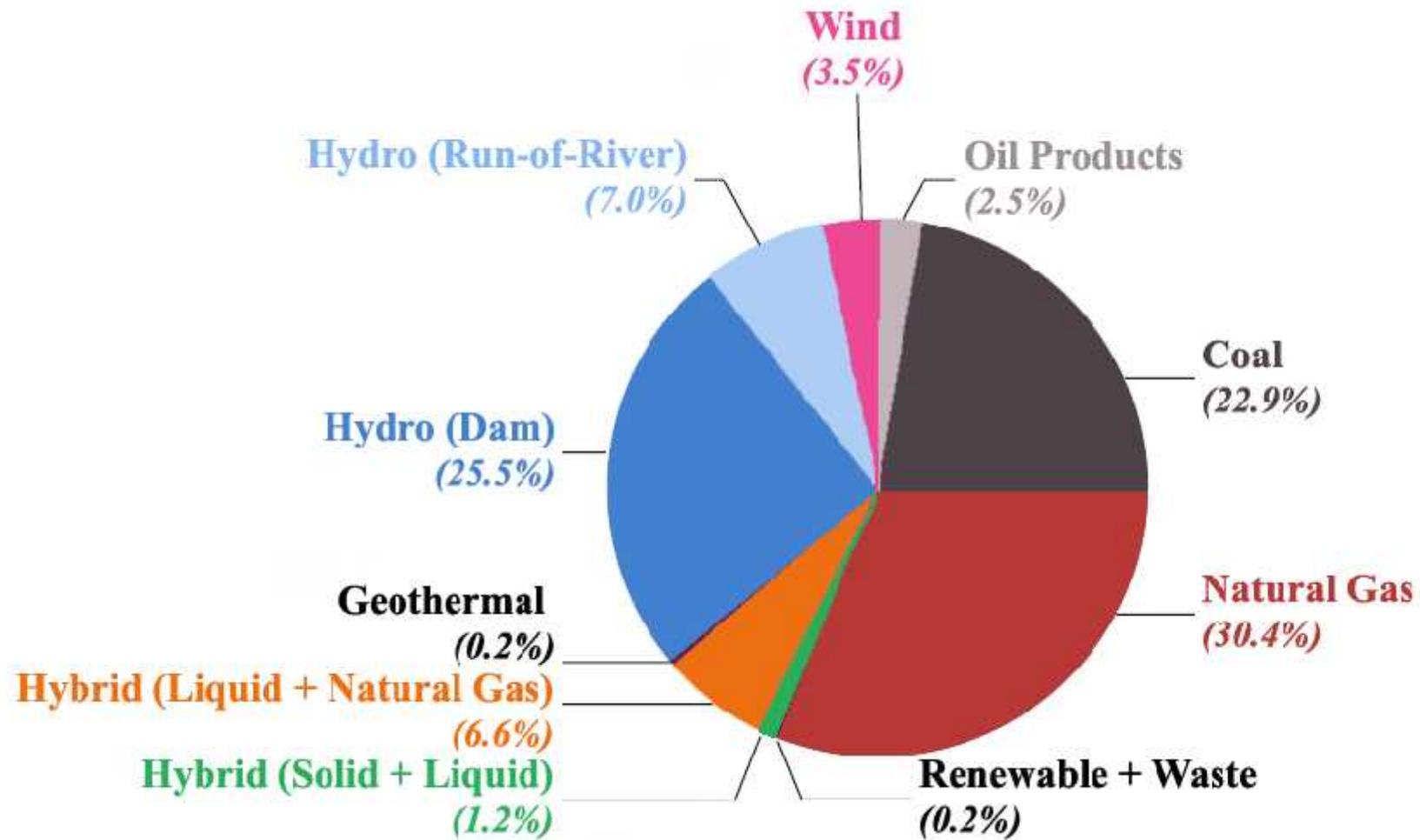
Source: Ministry of Energy and Natural Resources

Natural Gas in Power Generation (2001 – 2011)



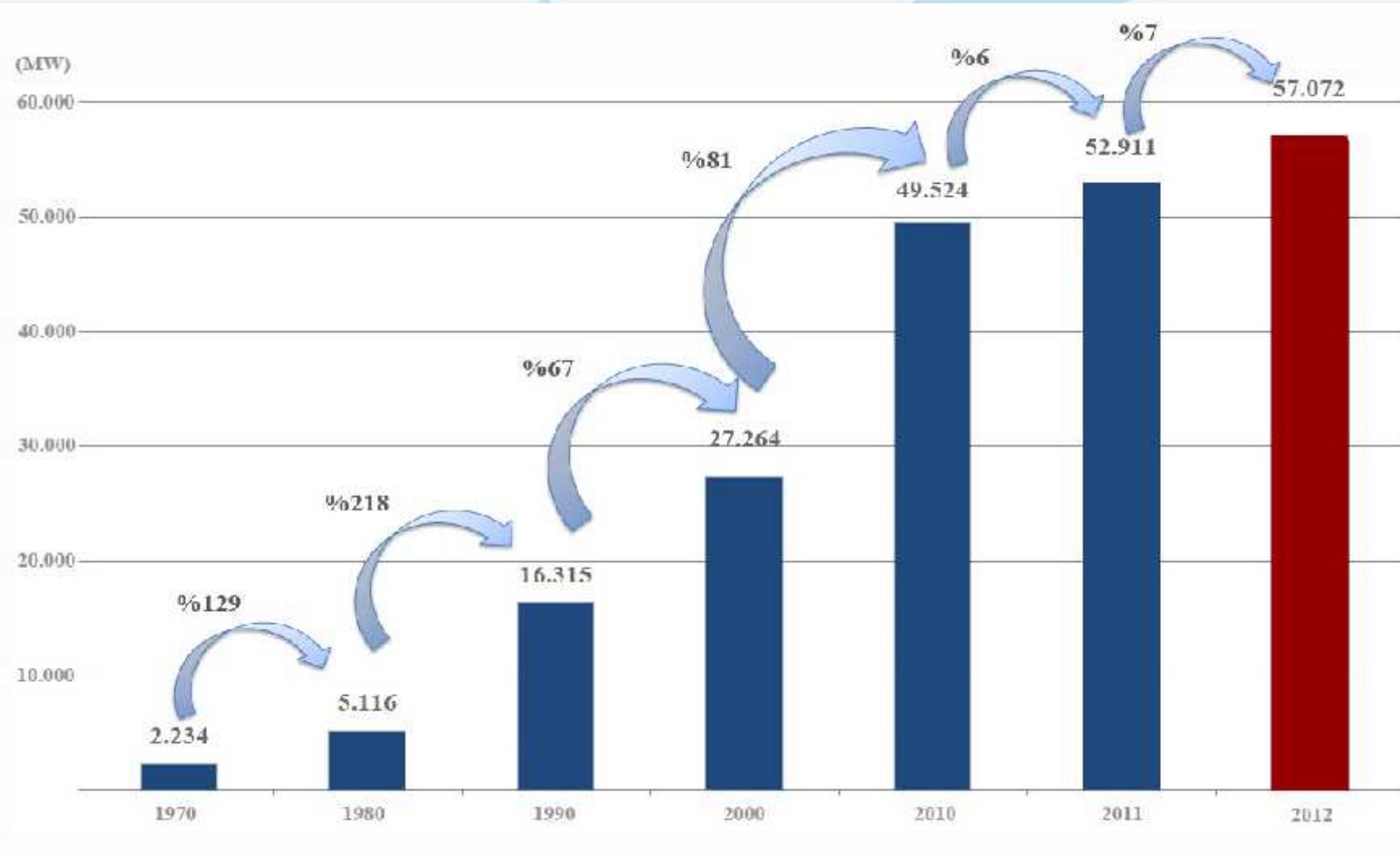
Source: Energy Market Regulatory Authority

Installed Capacity by Source (Apr 2012)



Source: Energy Market Regulatory Authority

Installed Capacity (1970 – 2012)

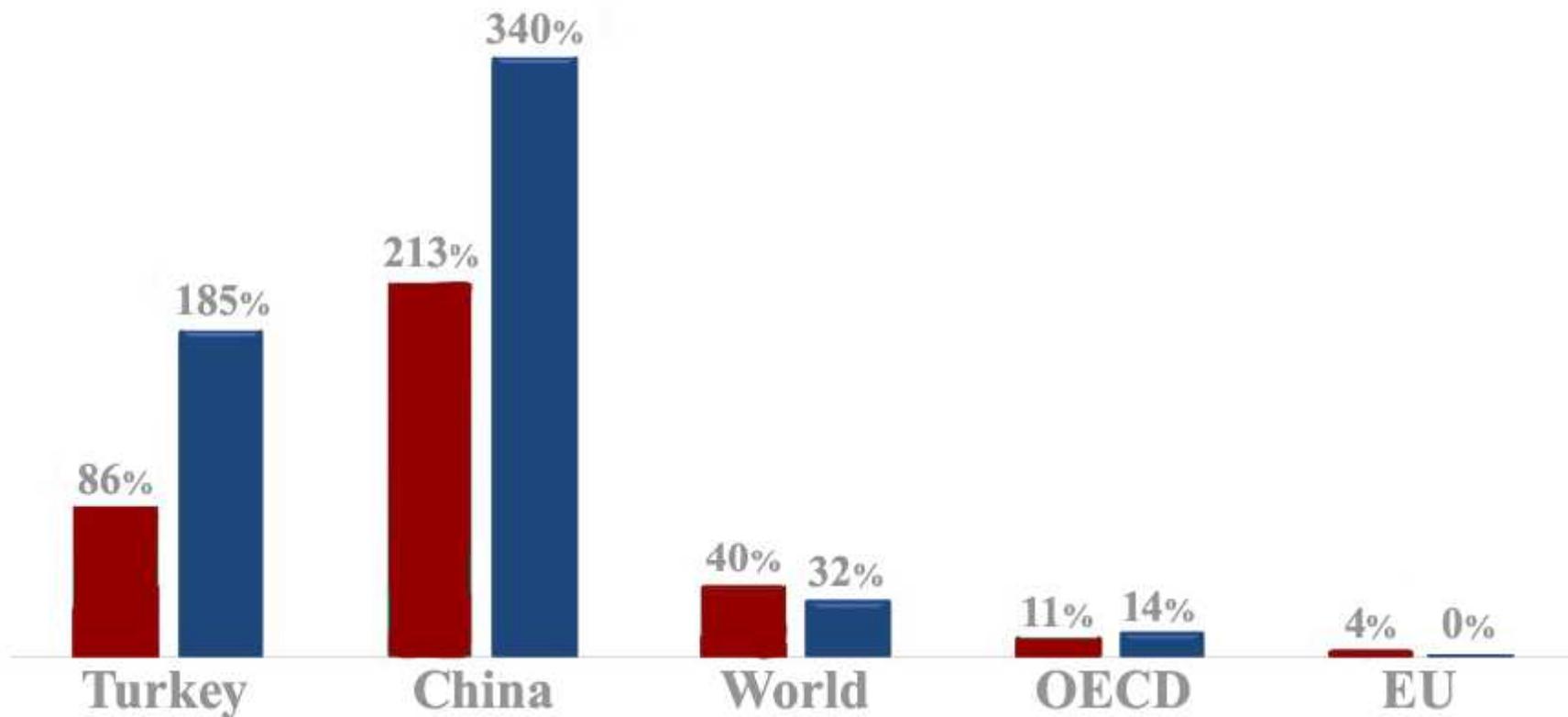


Source: TEİAŞ

Gas & Power Demand Growth (2001 – 2011)

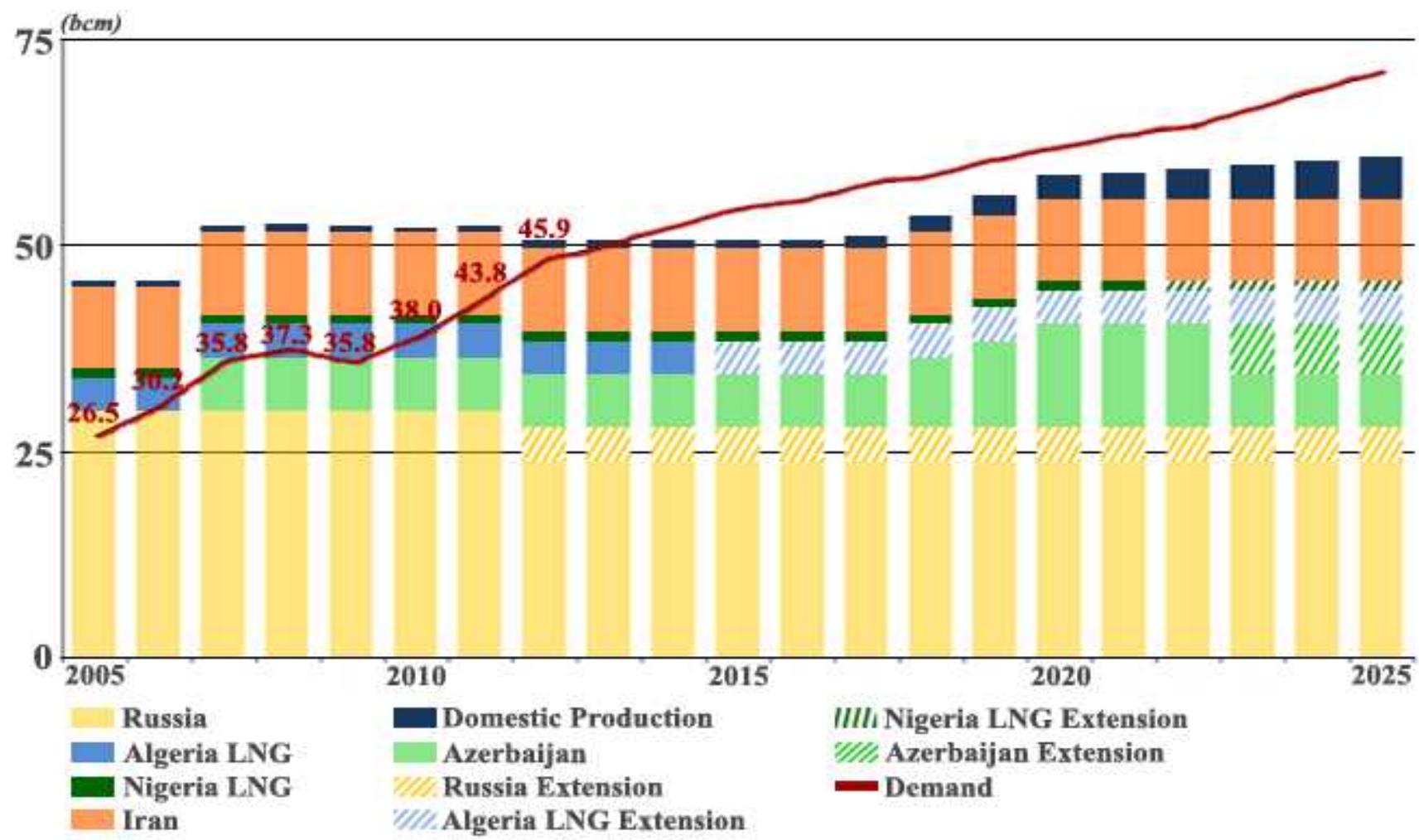


■ Gas Demand Growth
■ Power Demand Growth



Source: Energy Market Regulatory Authority

Natural Gas Demand vs Supply (2005 – 2025)



Source: BP

Potential and Possible New Suppliers



- Shah Deniz II & New Fields in Azerbaijan
- Northern Iraq / Iraq
- Shale Gas in Turkey
- Black Sea Offshore
- Eastern Mediterranean Offshore
- US LNG
- Africa

Azeri Gas in Turkey & Europe TANAP + ...?



Nabucco West?



...or TAP?



Oil Price, Exchange Rate & BOTAS Gas Price (2006 – 2012)



Source: Central Bank, BOTAS, Platts

Conclusion

What to do now?



For a Competitive & Liberal Internal Market

1. Removal of subsidies and cross-subsidies
2. Removal of restrictions for private sector's imports
3. Legal unbundling of BOTAs
4. Completion of IT (EBB & Scada) and infrastructure investments
5. Legal and commercial ground for Gas Hub

For the Realization of Transit Projects

1. Long term gas cooperation
2. Non discrimination
3. Transparent tariffs and regulations
4. Cost reflective and objective tariff mechanism
5. Bankable financial projection



THANK YOU...