



The Economic Policy Research Foundation of Turkey

Energy security in Turkey with an emphasis on natural gas

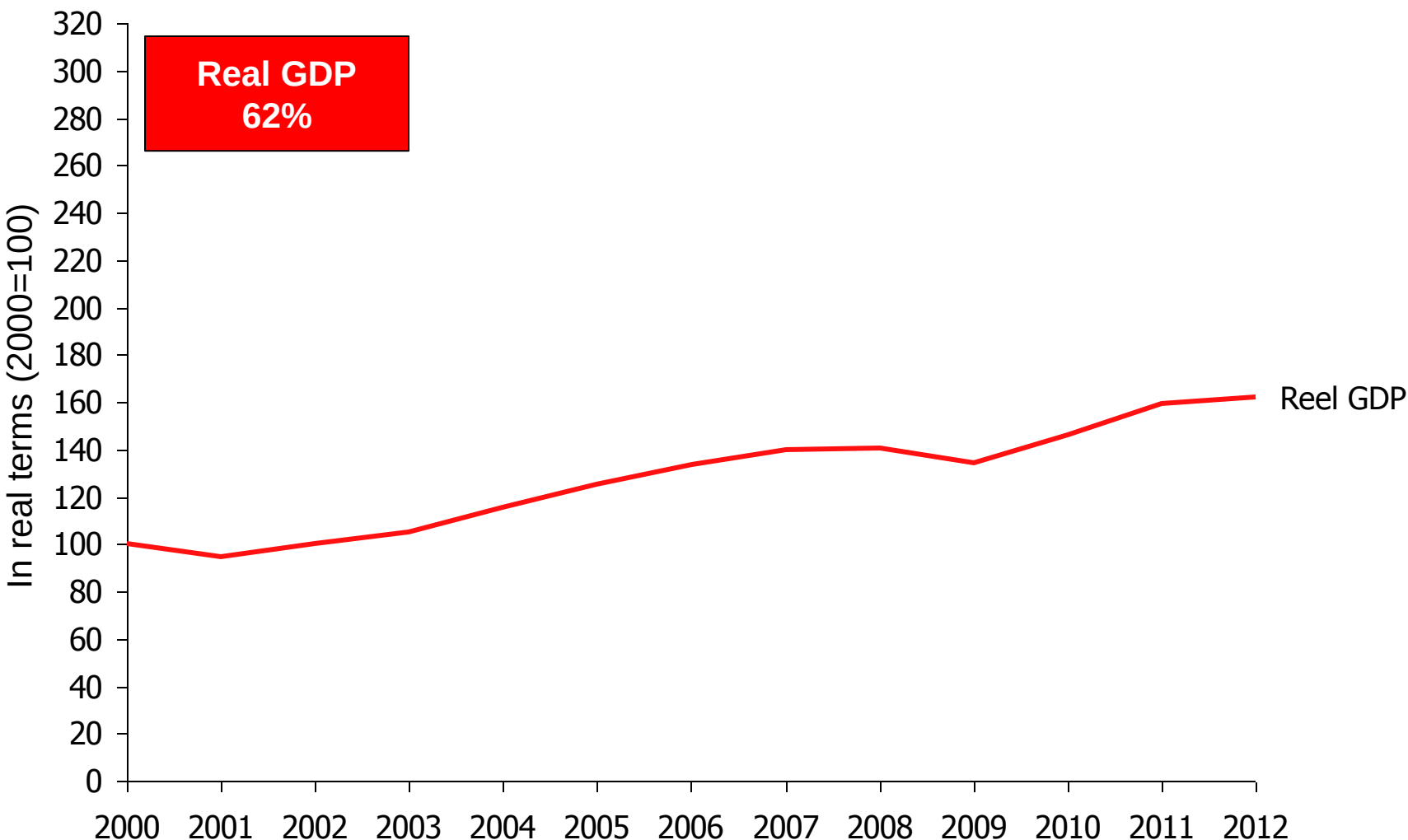
An evaluation of the current state

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Ankara, 2 May 2014

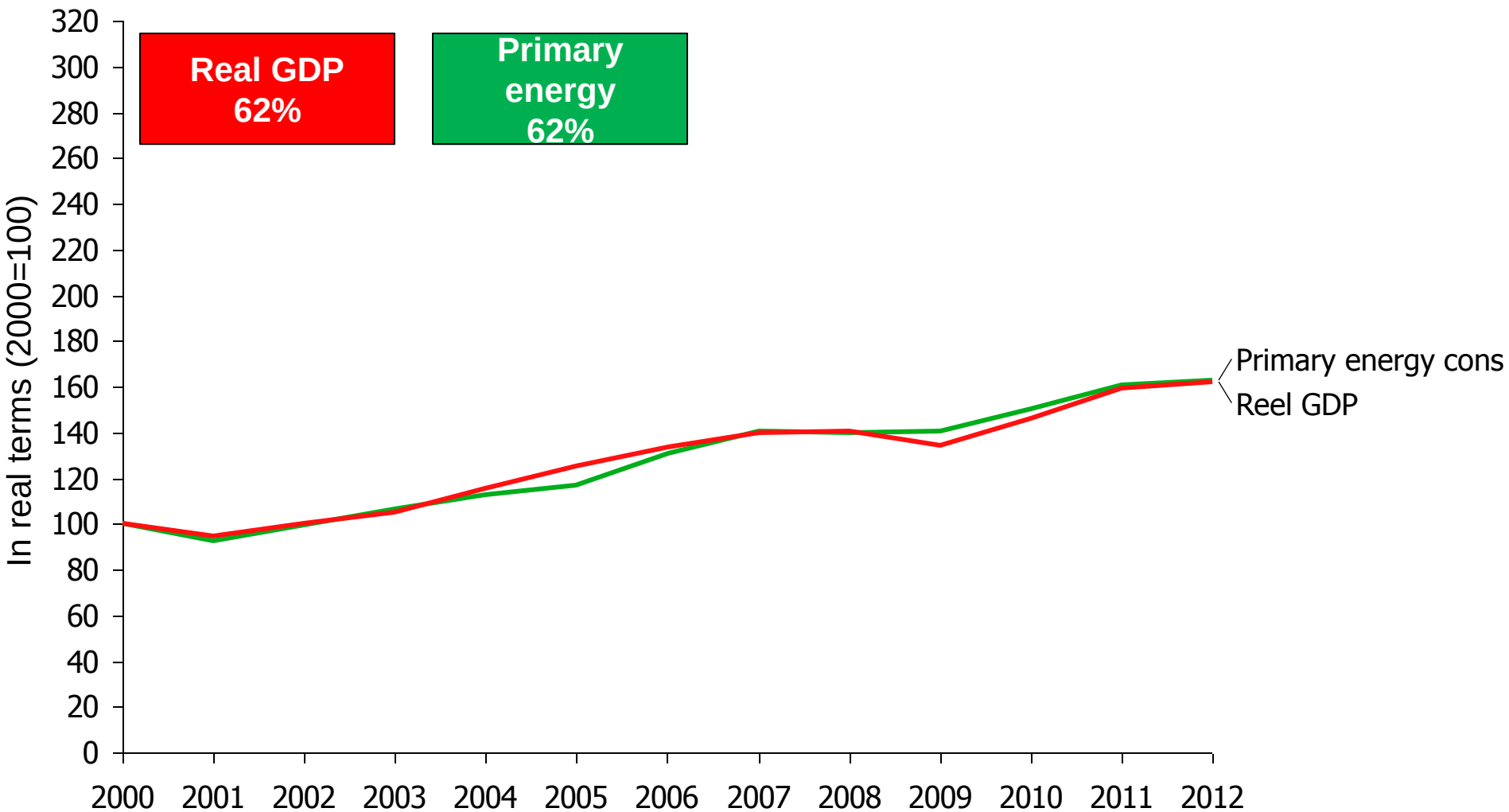
Agenda

- Turkey's growing economy and energy consumption
 - Increase in energy demand still on horizon
- Natural gas is at the core of energy security discussions in Turkey
 - Diversification, transit, and trading hub
 - Responding to the changing market structure
- Conclusion

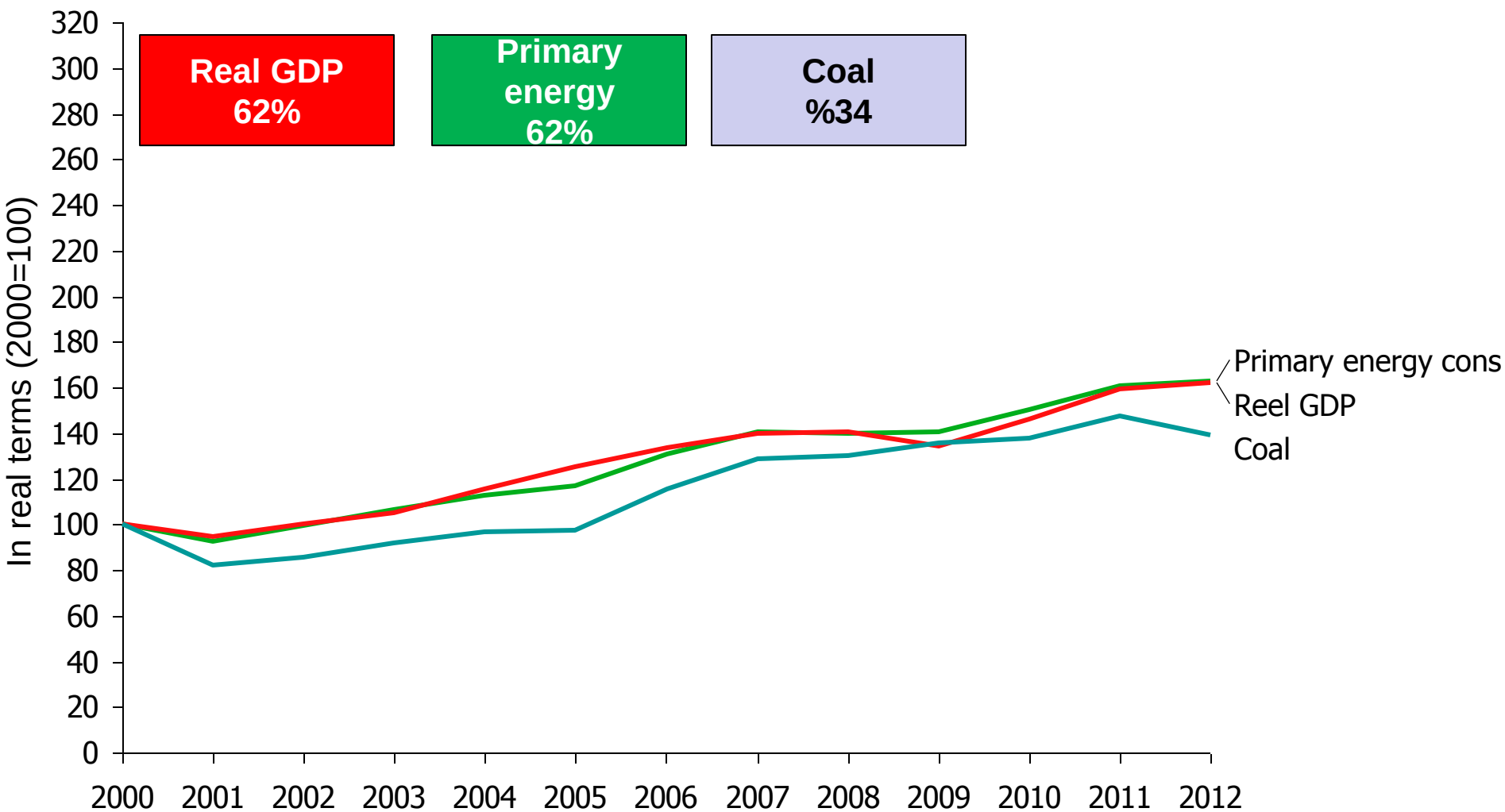
The Turkish economy has been on a relatively stable growth trajectory...



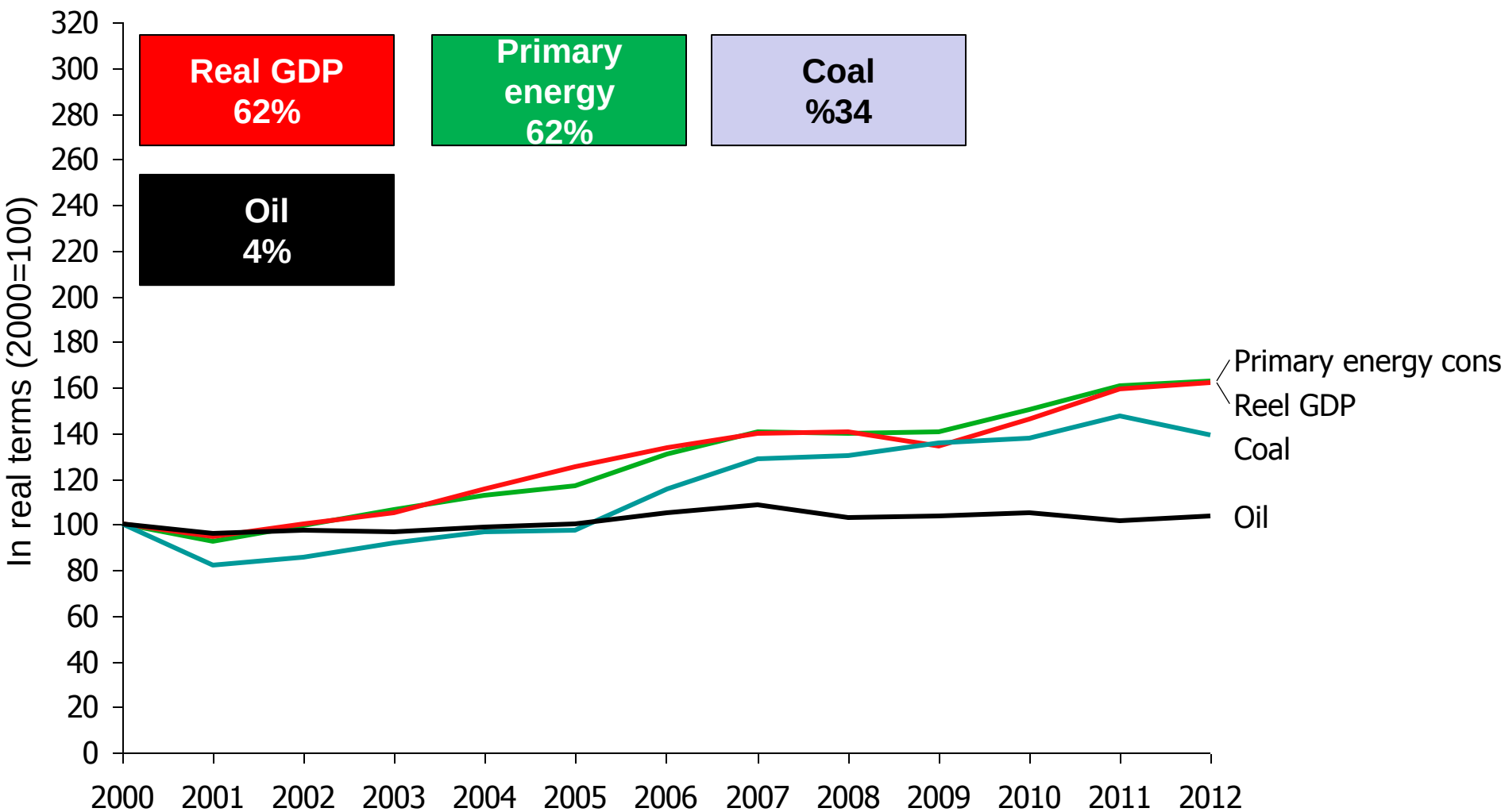
... so does the primary energy consumption (almost one-to-one)



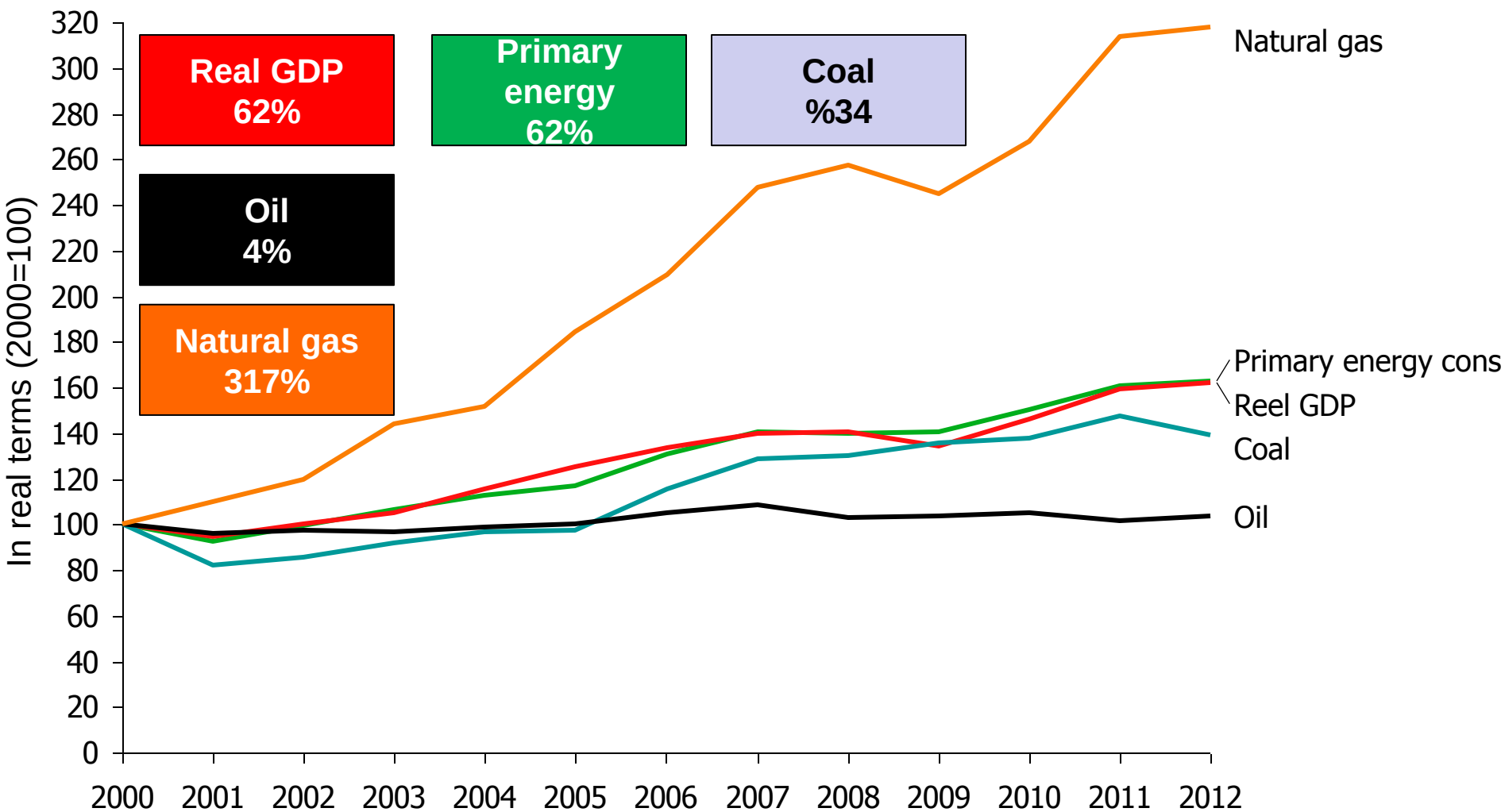
Coal consumption growth has fallen behind the rise of total energy consumption



There has been no dramatic rise in oil consumption throughout the last decade

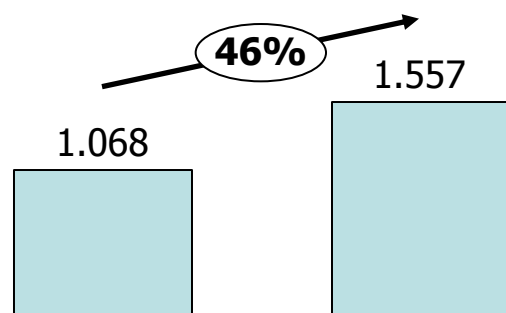


Natural gas consumption, among other fossil fuels, has had the highest growth



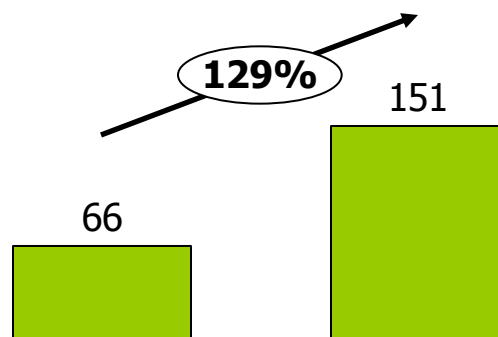
What did Turkey do with all that additional energy?

GDP per capita (TL, 1998 prices)



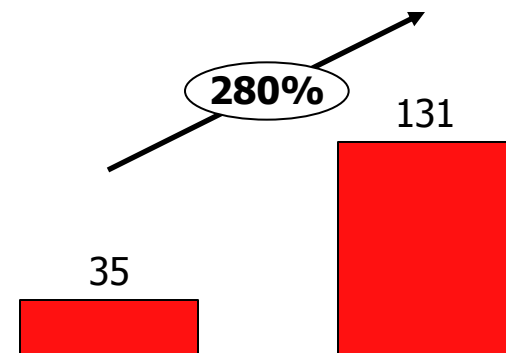
2000 2012

Passenger cars (per 1000 pop.)



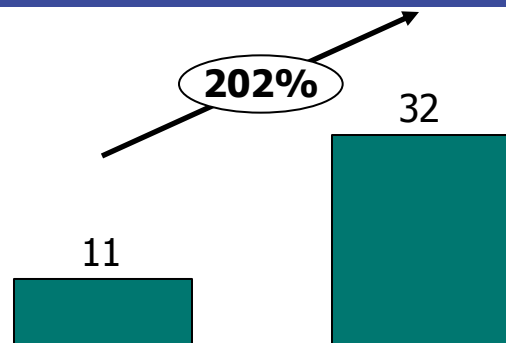
2003 2012

Air passengers (million)



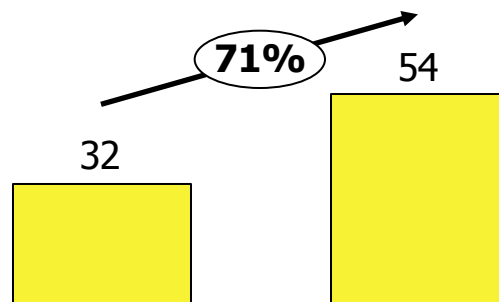
2003 2012

of foreign visitors (million)



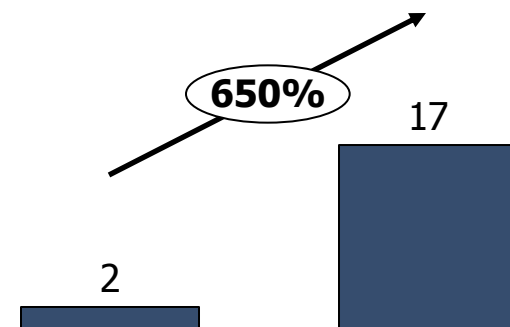
2000 2012

Cement prod. (million tonnes)



2000 2012

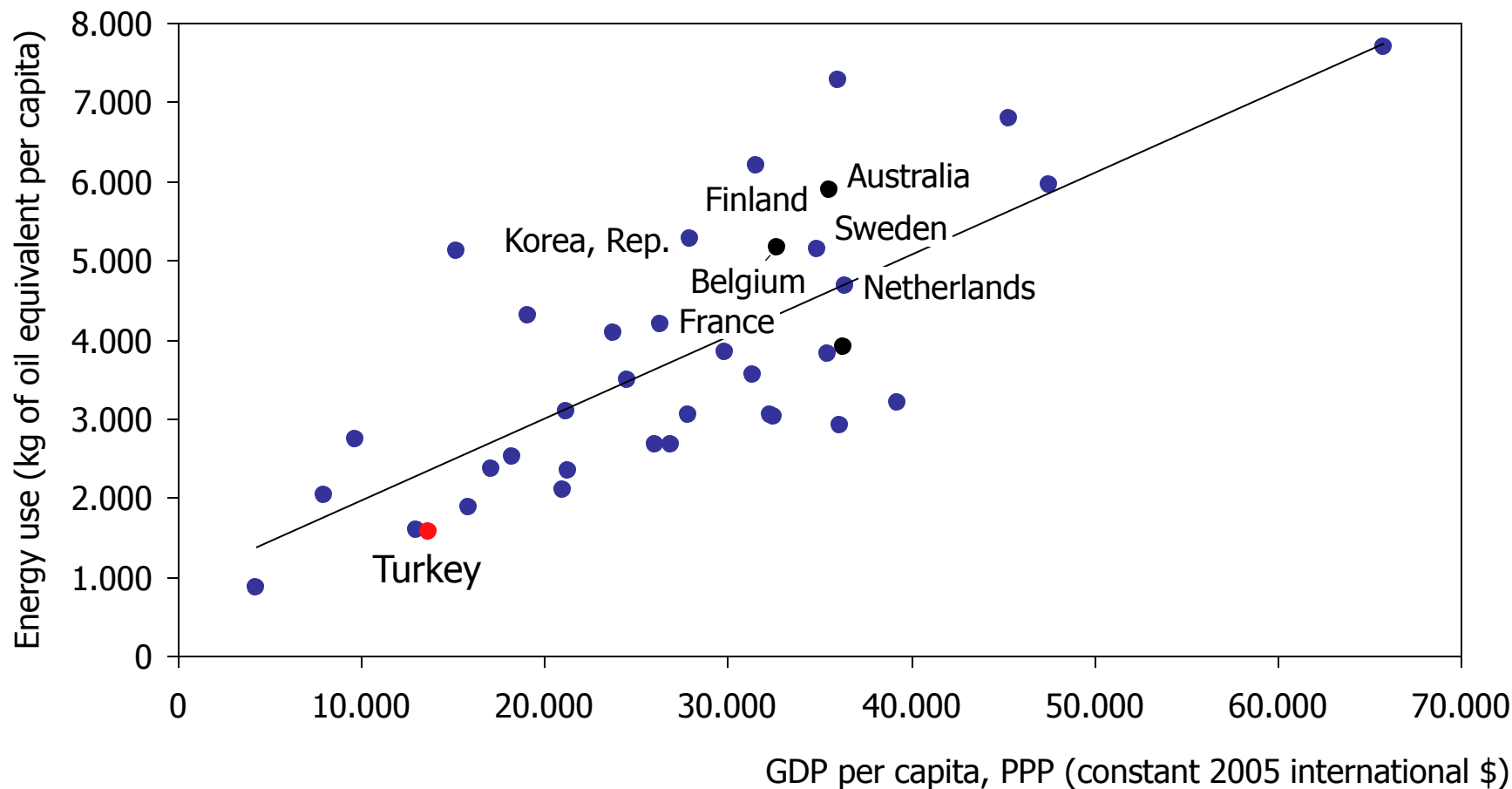
Iron and steel exports (bln \$)



2000 2012

However, it is too early to expect energy use to stabilize in the foreseeable future

GDP per capita and energy use per capita in OECD countries (2012)



Let's limit our energy security discussion to natural gas in the rest

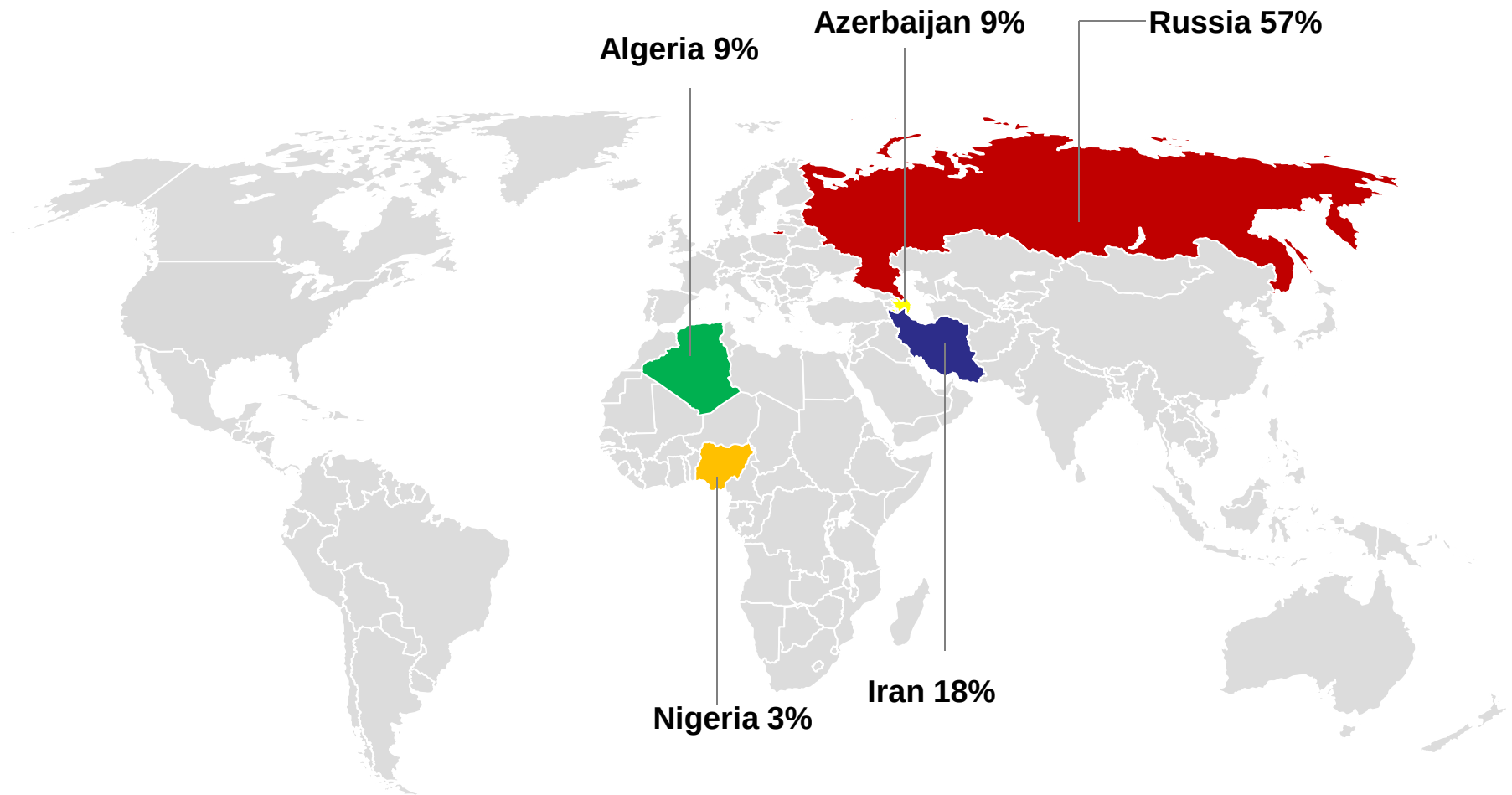
- There are five main reasons for that
 - ➔ The share of natural gas in Turkey's total electricity generation is 44 percent (2012) and more than 90% is imported
 - ➔ Number of cities with access to natural gas increased from 7 (2001) to 71 (2014)
 - ➔ BOTAS expects that the natural gas consumption will increase to 70 bcm in 2020, up from 46 bcm in 2012
 - ➔ Fragmented nature of natural gas markets makes it a more important subject of energy policy
 - ➔ Geopolitical developments surrounding Turkey jeopardize Turkey's secure access to natural gas

Three critical and interrelated natural gas issues on Turkey's energy agenda

- In the short to medium run
 - ➔ Securing access to reliable gas sources
 - ➔ Leveraging the transit role
 - ➔ Aspiration to become a natural gas hub
- In the longer run
 - ➔ Integration of possible changes in natural gas pricing mechanisms into energy policy

Turkey's excessive dependence on a handful of nations on gas imports is problematic...

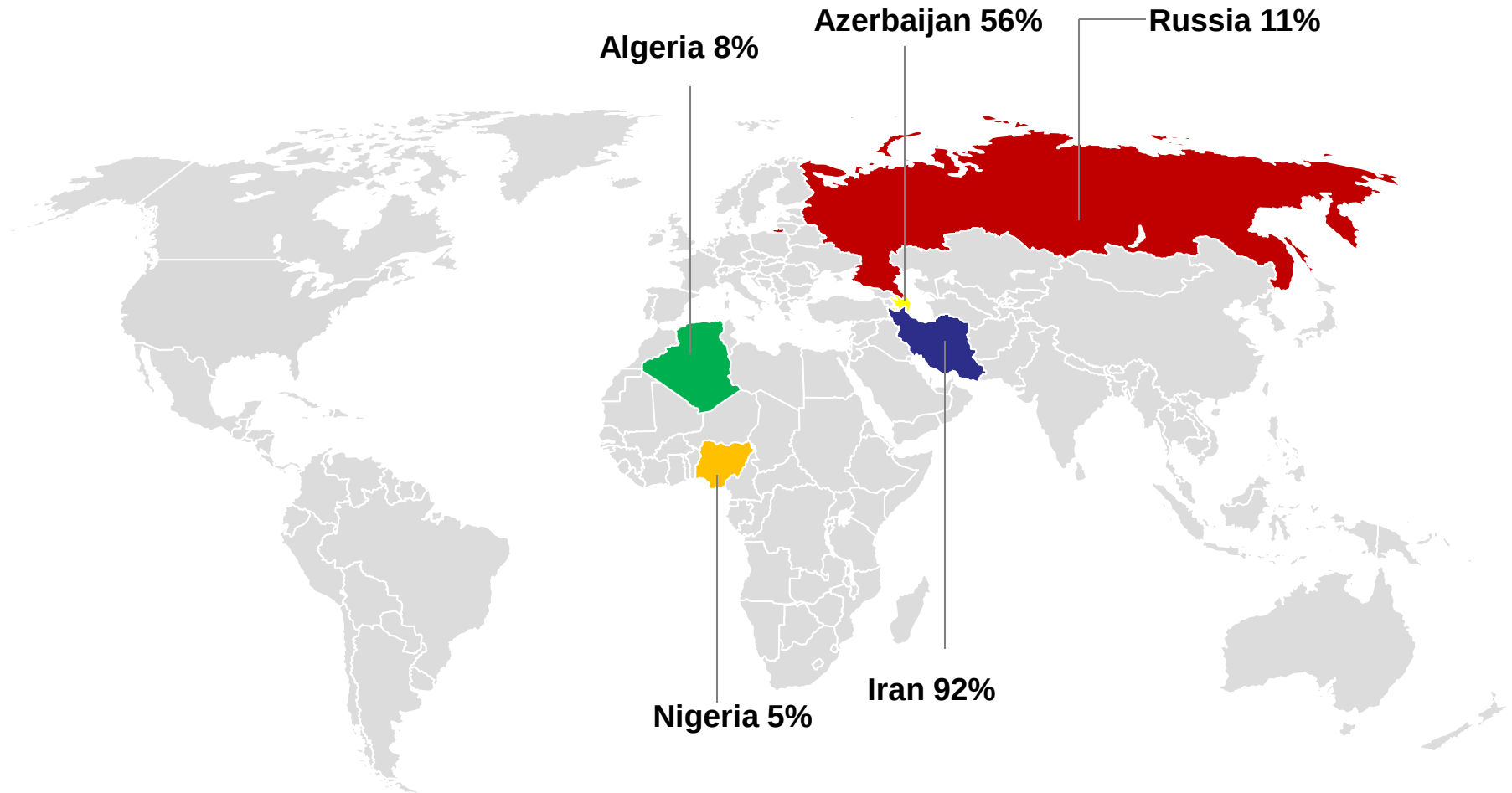
Share of major trading partners in total Turkish gas imports (2012)



Source: BP Statistical Review (2013)

... but there is also some mutual interdependence

Share of Turkey in major trading partner's total gas exports (2012)



Source: BP Statistical Review (2013)

Geopolitics is not an enabler for Turkey to diversify away from Russia

- Dependence on Russia: 47% (2010), 57% (2012)
- The country is surrounded by natural gas abundant neighbors but;
 - ➔ Iraq: Agreement signed on Nov 2013 to import 20 bcm natural gas from KRG
 - Problems between KRG and Baghdat are the main roadblocks
 - ➔ East Med: Recent Leviathan export tender to Turkey
 - Delays in ratification of compensation agreement and Cyprus issue are the main roadblocks
- Russia and Turkey reached a basic consent about expansion of power of "Blue Stream"
 - ➔ Low level of hydro power capacity b/c of lack of rain
- LNG from the US: Turkey intends to buy 6 bcm LNG from the US but Asian markets compete against Turkey

Turkey is not a significant natural gas transit country yet

- Geopolitics is the main culprit: Most of the supplier nations are politically constrained
- 1. **South Stream:** Turkey expressed its support but it's under serious question after Crimea
- 2. **Iraq and East Med:** Problems mentioned before
- 3. **Iran:** Still in isolation and uncertainty persists
- 4. **Trans-Caspian:** Legal complexities of Trans-Caspian transportation and Turkmenistan's ability to export to China
- **Southern Gas Corridor (TANAP):** The most promising one. Transportation of Shah Deniz gas to European market

Becoming a natural gas hub requires more than a favorable location

- There is a long way to go... A non-exhaustive list;
 - ➔ Natural gas market law should be changed
 - ➔ Physical infrastructure should be improved
 - ➔ Energy Market Operating Company (EPIAS) should become operational
 - ➔ The issue of subsidies should be resolved
 - ➔ Legal framework (rule of law, contract enforcement, policy certainty etc...) should be strengthened
- Having taken concrete steps on the above listed items, Turkey has a big chance to become a natural gas trading hub

A transition to an integrated natural gas trade can decrease the supply side risks of Turkey

- Interregional natural gas trade through LNG is projected to become more prevalent
 - ➔ IEA expects 50% of natural gas trade will be in the form of LNG, up from 42% in 2011
 - Australia and Qatar will become even more dominant
- Global market integration is highly probable as LNG becomes more easily accessible
- Supply disruptions b/c of geopolitics won't be a serious problem in a world full of with alternatives
- Turkey should take global market integration possibility into account in setting its energy policy priorities

Conclusion

- Location matters. Turkey has;
 - A favorable location: In between natural gas abundant countries and a very large European consumer market
 - An unfavorable location: It's potential transit role and opportunity to diversify source countries is blocked by politics
- But when it comes to the aspiration to become a trading hub, location is not everything
 - There are things to be done at home