





# **GAS SUPPLY DIVERSIFICATION AS PART OF INNOVATIVE PRACTICES WITHIN THE EUROPEAN UNION'S STRATEGY FOR THE GAS MARKET SECURITY ENHANCEMENT**

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- The European Union's strategy for the gas market security enhancement presumes gas supply diversification for those countries that do not meet security-of-supply criteria
- 13 of 26 EU members, excluding Malta and Cyprus, fail to meet security-of-supply criteria



- Target Model stipulates that member states should have RESIDUAL SUPPLY INDEX (RSI) equaling or exceeding 110%
- ACER defines RSI as share of consumption that can be met without largest supplier based on supply capability
- Bulgaria, Denmark, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Poland, Portugal, Slovenia, Sweden fail to satisfy RSI criterion



## The Updated Gas Target Model Requirements

- According to the AGENCY FOR THE COOPERATION OF ENERGY REGULATORS (ACER) the updated Gas Target Model requires a number of supply sources to be 3 or more
- **Bulgaria, Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Portugal, Slovakia, Sweden fail to meet criterion of 3 supply sources**

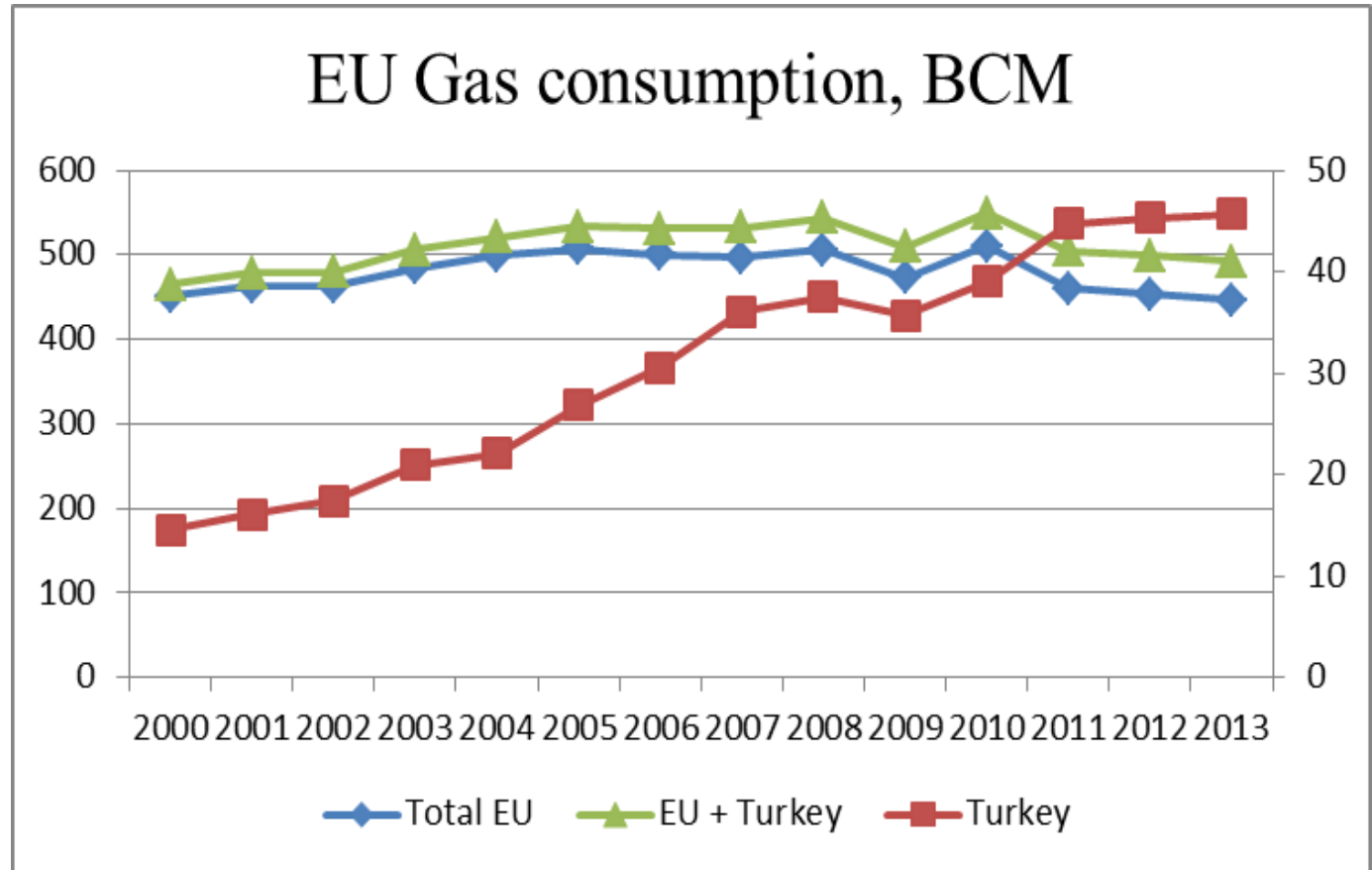


- Natural gas supply diversification as part of innovative approaches to secure gas consumption involve sophisticated gas pricing model to be introduced under various alternatives
- Gas pricing model choice:
- Pipeline Long-term vs. short term gas contracting
- LNG Spot vs. LNG Long-term

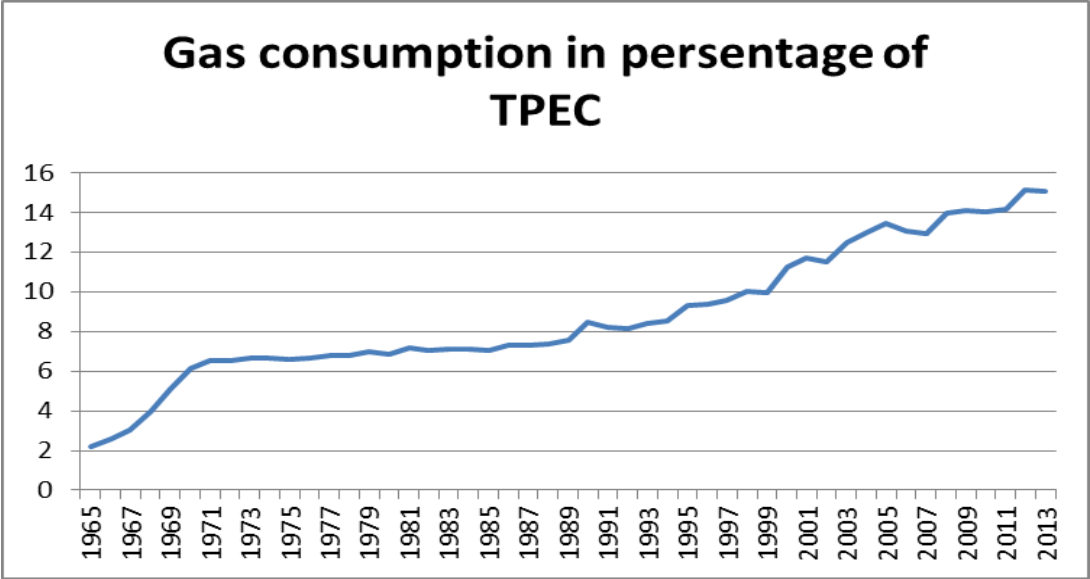
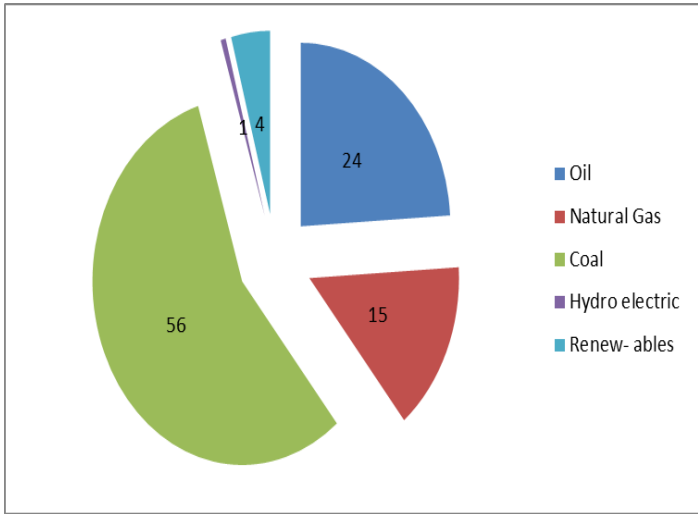


# European gas consumption trend under change, 2000 - 2013

Slow pace of gas consumption in Europe after the 2008-2009 global economic crisis on the back of the established tremendous outside gas flows overturned S/D fundamentals tending to decrease European gas market price indicators



# Gas in the energy profile of Poland

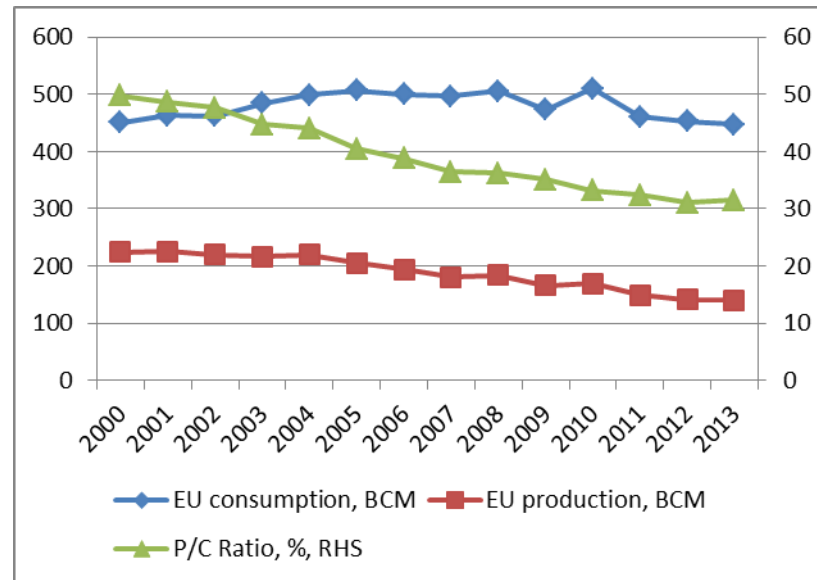






## The EU gas consumption vs. gas production

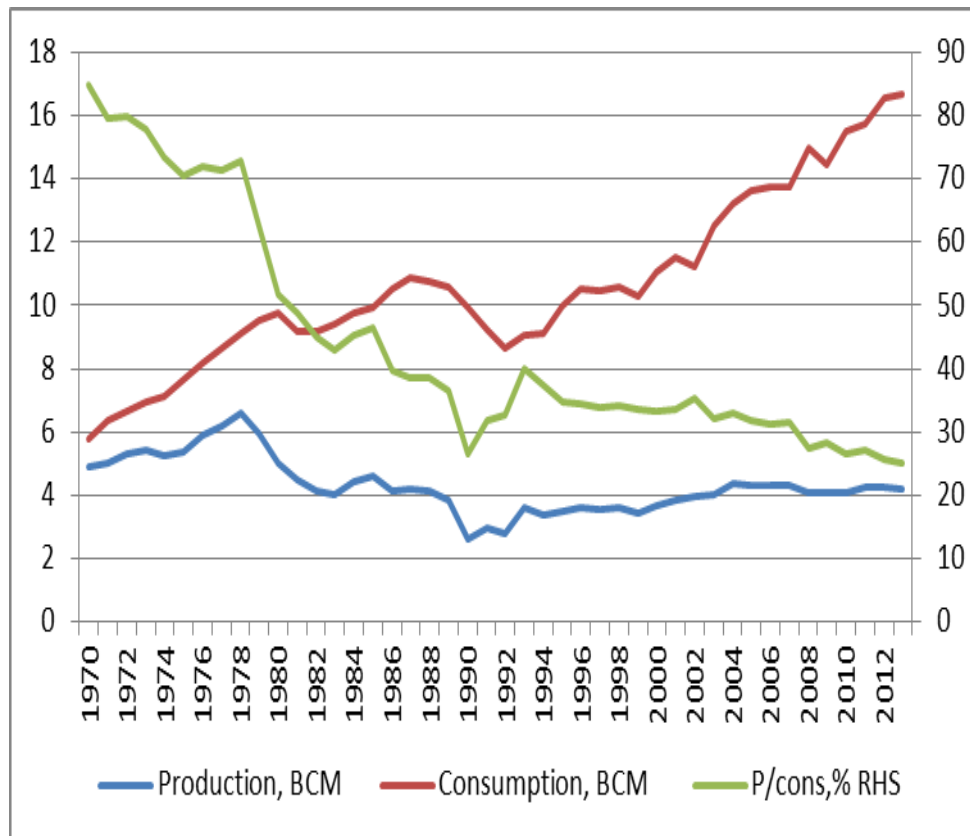
Over 2000 – 2014 the EU gas consumption tended to depend for the more on external gas sources with declining P/C from 50% in 2000 to some 30% in 2014





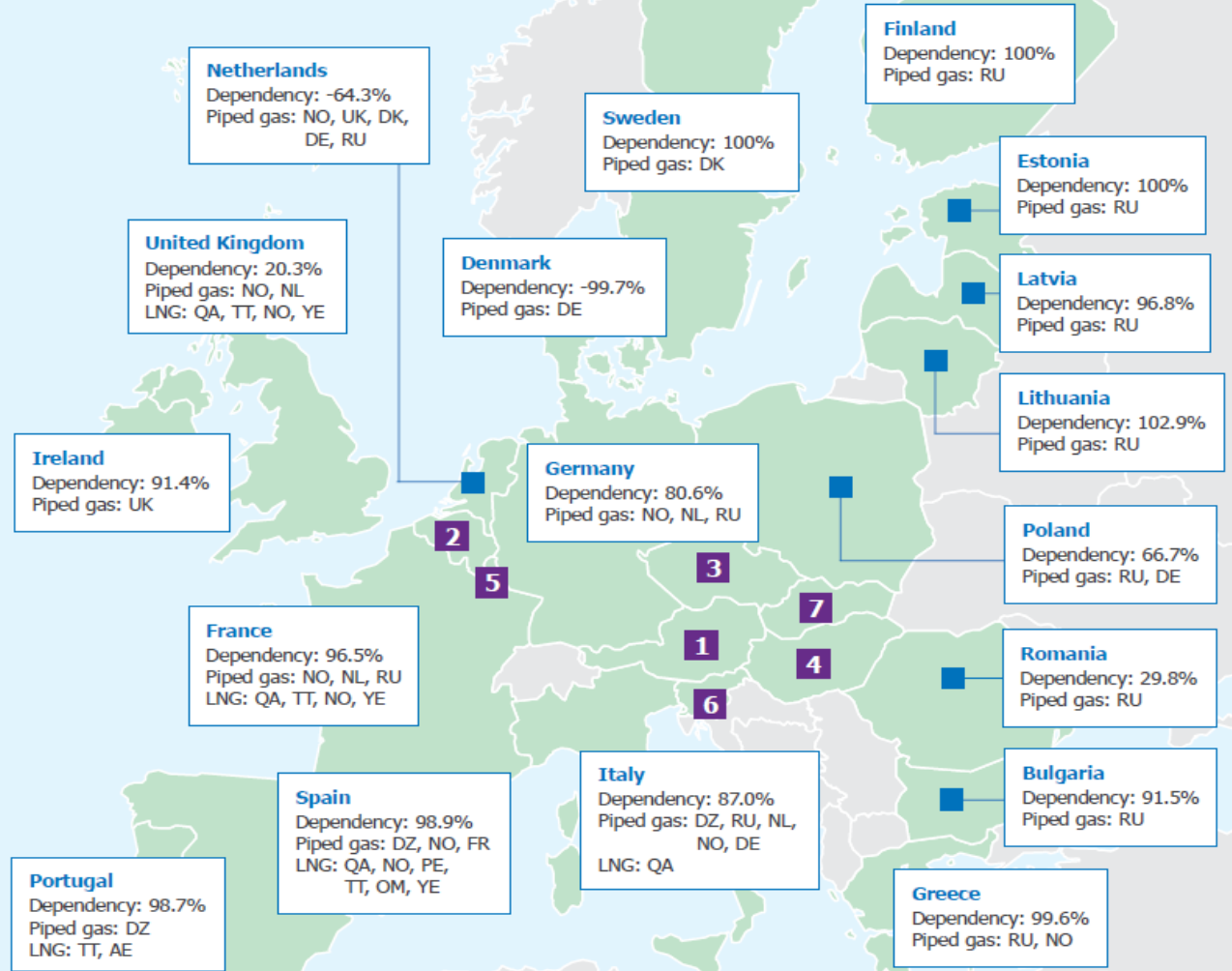
## Poland's gas production and gas consumption trend

Over 1970 to 2014 on the background of gas production stability in the country, gas consumption increase predetermined rising dependability of Poland on foreign gas supply, Russian gas for the most.



# EU countries' various dependency on imported gas

Import dependency of gas in the EU 27





## Innovative trends: cross-border gas flow in Poland

Mallnow technical cross-border direct gas flow capacity (Poland - Germany) is some 32 BCM/y

Reverse flow capacity via Mallnow was increased to 5.5 BCM/y since 1 January 2015

Lasow reverse flow (Germany – Poland) capacity stands at some 1.6 BCM/y

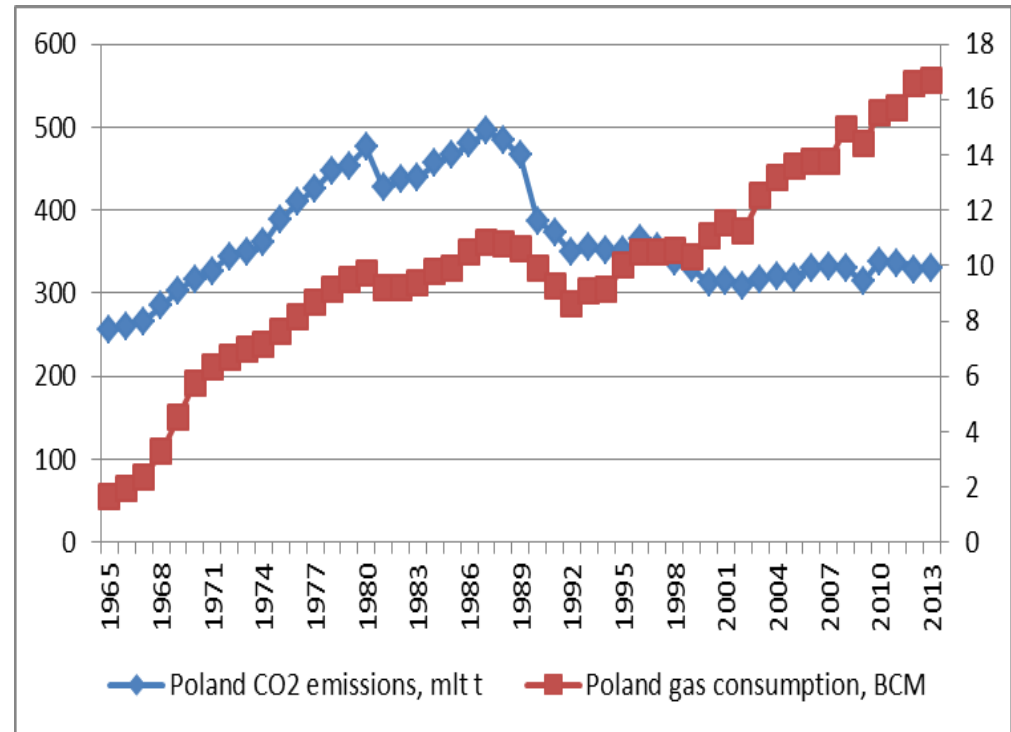
In 2013, Poland imported 1.8 BCM of gas from Germany





## Poland's Environmental Gains

Increase in gas consumption made a substantial contribution into the Poland's environmental gains beginning late 1980-s with bulk gas imports from RF





## Northwest European countries LNG quest

Poland is among a group of European countries (Finland, Estonia, Latvia, Lithuania) looking for LNG alternatives. Lithuania is to be the first to understand costs of gas supply diversity.



## North West European countries drive for less dependence on Russia's gas

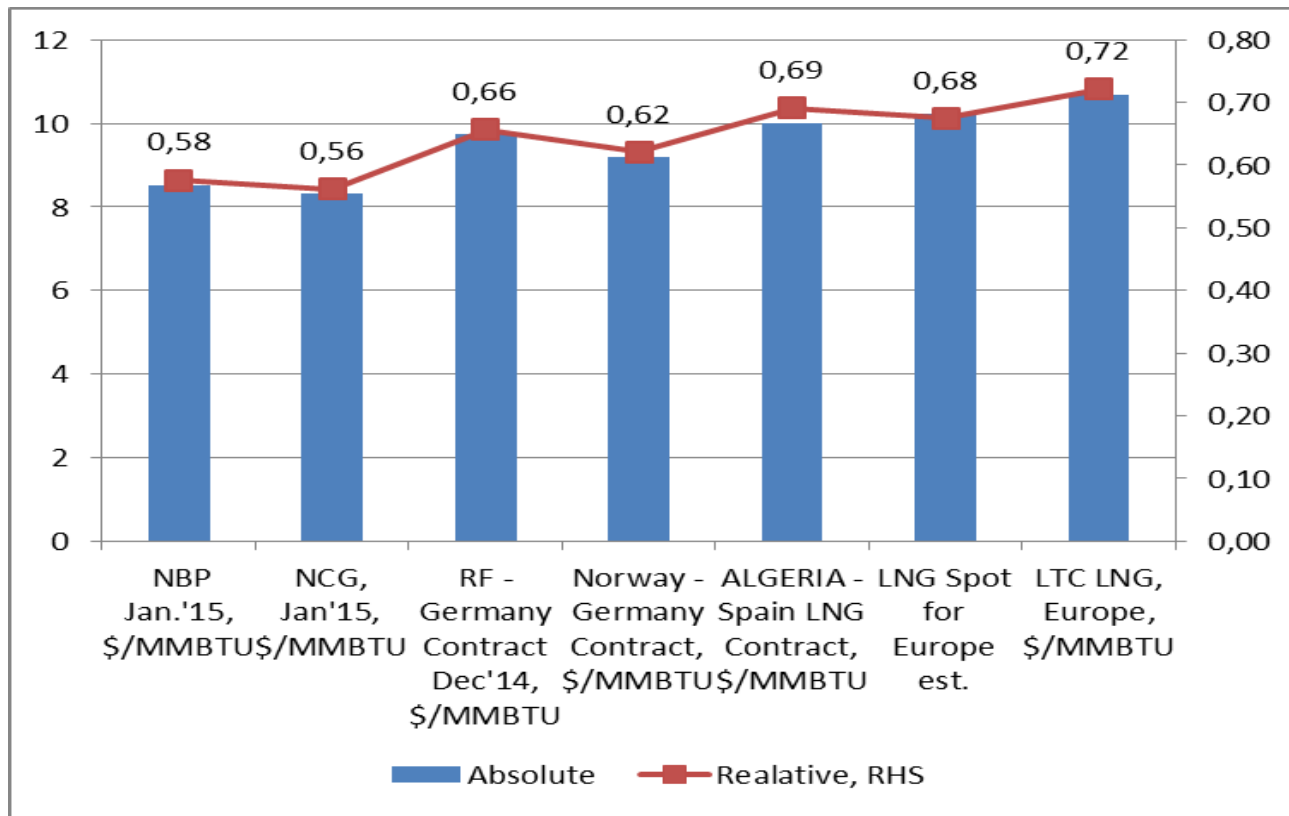
Lithuania's Regulator has increased gas price for 2015 taking into account LNG terminal construction and other supplemental costs. A 20% gas price increase may be judged as a sort of payment for gas flow diversification. Such contingency will have to last presumably for 10 years.



## European gas price alternatives in absolute and relative terms, January 2015

The UK's liberalized gas market represents the lowest gas price level due to oversupply with as low gas price vs. oil price ratio as 0.58 (NCV).

Under S/D equilibrium conventional piped gas/oil ratio stays within 0.62-0.66 range. G/O ratio in LNG December'14 varies within 0.68-0.72







## LNG as part of Poland's strategy for gas supply diversification

- In January 2015 the first Poland's LNG import terminal at a value of some \$930m is nearing construction
- This facility in operation will expand a variety of gas choice for the country up to 3 meeting GTM requirements
- This choice implies gas procurement on a Long-to-mid-to short- term basis
- Gas supply portfolio should be structured involving a set of goals – security, reliability, price alternative with attention to gas pricing principals existing worldwide



## Conclusion

- Natural gas market restructuring in Poland is undergoing change in conformity with the European Union's general principles with unifying conditions for national gas markets operation
- This challenge implies setting up a new institutional structure as well as new industrial infrastructure facilitating introduction of multiplicity of gas sources
- New alternatives in gas supply scheming with LNG to be entered on the market imply a variety of choice limited by the existing global gas market operation principals
- These principles include different gas pricing models effective on various segments of the Global gas market



# Conclusion

- Piped gas is traditionally traded on conventional LTCs contractual system with price model based on an oil-indexed gas price formulae
- Global LNG market is characterized by worldwide competition (on a country-by-country) involving two segments of gas contracting with specific pricing models
  - - LTCs with gas price closely pegged to oil price (relatively high Gas to Oil price correlation)
  - - Spot LNG contracting based on short-term (from 2 to 4 months) transactions with price to be set up involving immediate S/D fundamentals (in tendering procedure)



**Thank you for your time!**