Geopolitics of Gas in Poland

Piotr KUŚ
Director of Brussels Office
GAZ-SYSTEM S.A.

CGEMP Conference, Paris, 10th June 2011

the system, that connects

AGENDA

- Natural Gas in CEE
- Natural Gas in Poland
- Natural Gas Infrastructure Development & its Role in Shifting the Geopolitics
- Conclusions

Natural Gas in CEE

- Transit oriented infrastructure
- East-West running pipelines
- Almost **100%** of the current gas import in the Region is sourced (at least physically) from Russia

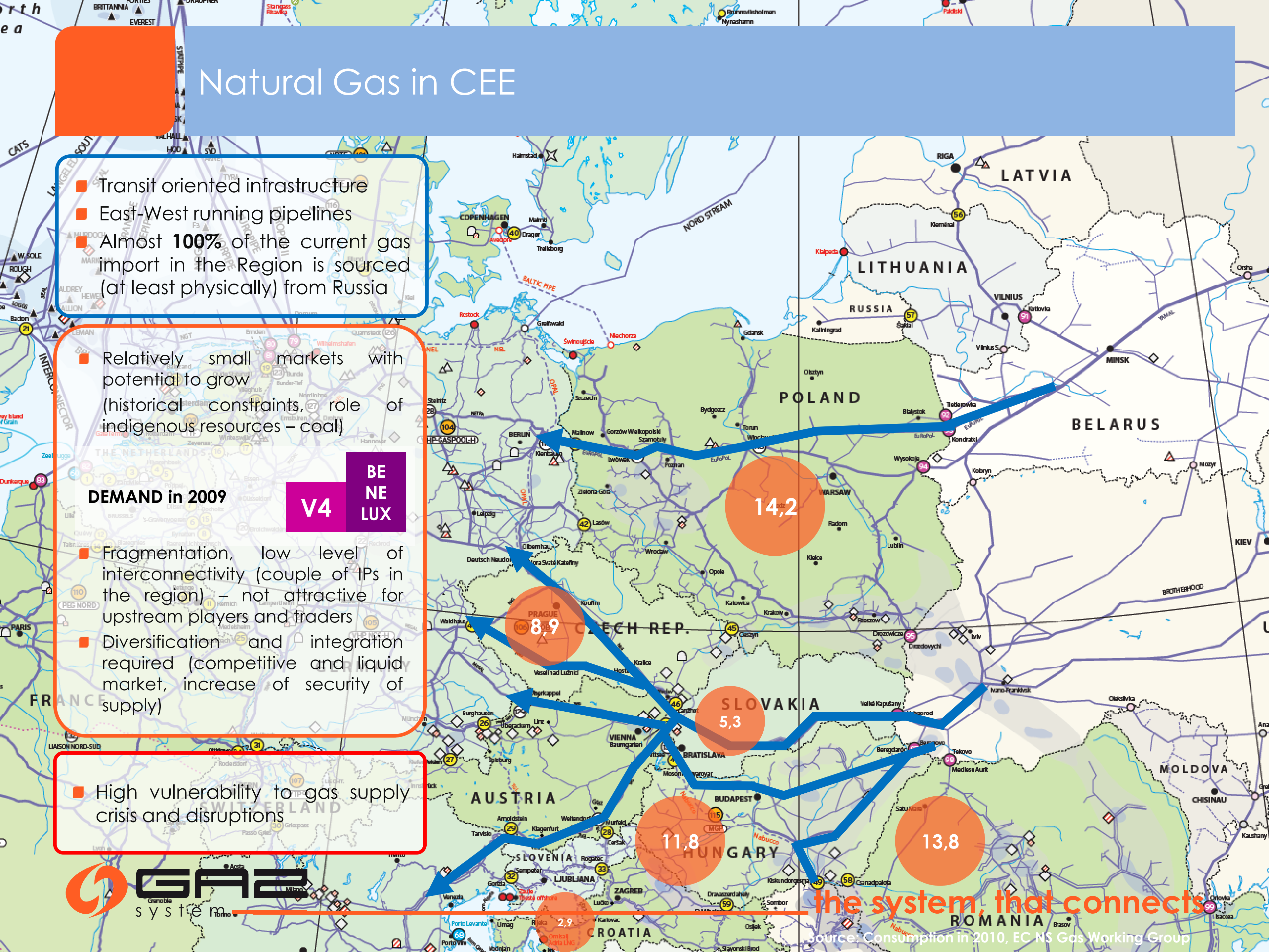
- Relatively small markets with potential to grow (historical constraints, role of indigenous resources – coal)

DEMAND in 2009

V4	BE NE LUX

- Fragmentation, low level of interconnectivity (couple of IPs in the region) – not attractive for upstream players and traders
- Diversification and integration required (competitive and liquid market, increase of security of supply)

- High vulnerability to gas supply crisis and disruptions



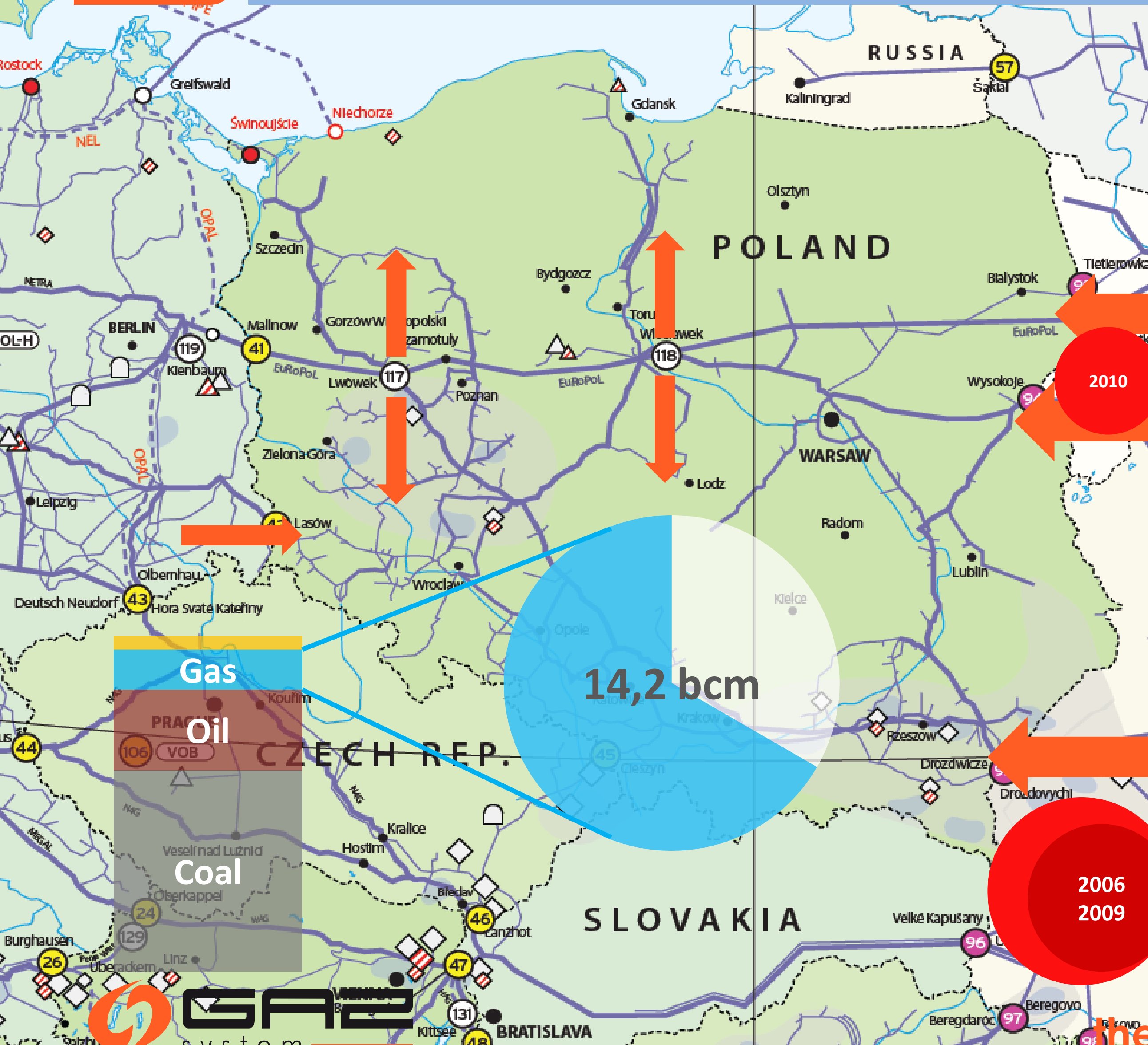
GAZ system

the system, that connects

Source: Consumption in 2010, EC NS Gas Working Group

Natural Gas in Poland

- Poland is the biggest natural gas market in Central Europe **(14 bcm)**
- Low share of Natural Gas in Polish Primary Energy Consumption **(approx. 13%)**
- Polish Gas transmission Network:
  - 9 768 km of Pipelines
  - 680 km of Transit Pipeline (Yamal)
  - 14 compressor stations
  - 60 gas supply nodes
  - 969 exit points
- Heavy dependence on imports (70%), while national production covers remaining 30%
- Gas imports practically only from Eastern direction
- Marginal supply diversification
- Practically no interconnection with other EU countries
- Experienced by supply crisis and disruptions **(2006, 2009, 2010)**



the system, that connects

Major drivers for Natural Gas Market and Infrastructure Development in Poland

EU CLIMATE POLICY IMPACT

- Emissions reduction targets imply higher gas usage (coal to gas switch)
- Electricity and Heating demand is a major driver of gas demand
- Higher RES share in power generation balanced by gas fired (CCGT) power plants

NEW POTENTIAL FOR DEMAND

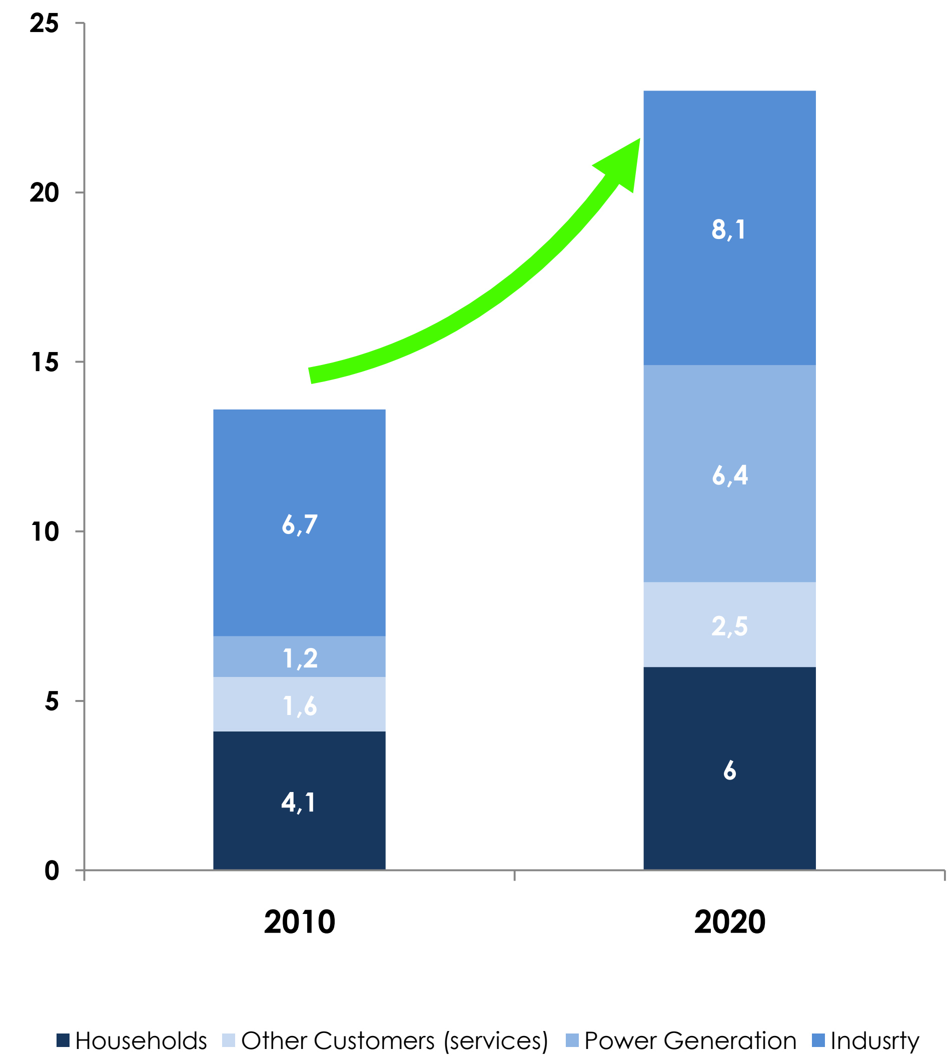
- Lower than EU-average Gas share in the energy market
- Demand recovery after the period of crisis (about 15% demand decrease on average)
- Need of higher import gas flows as national production remains stable

SECURITY OF SUPPLY

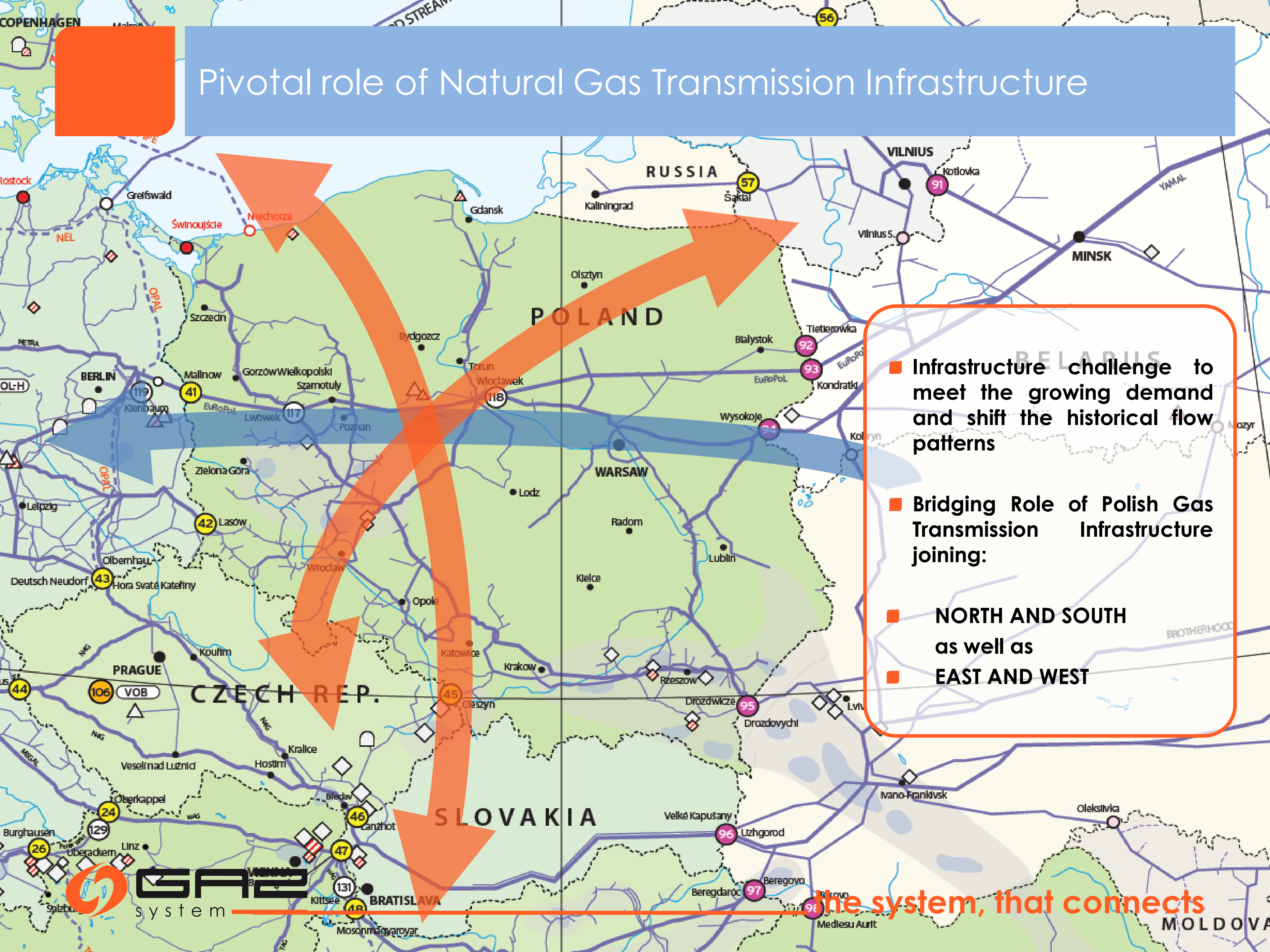
- Diversification of supply routes and sources to minimize the risk of disruption
- New infrastructure standards and enhancing the network flexibility
- New interconnections enabling regional security mechanisms as well as reverse flows

EU INFRASTRUCTURE POLICY IMPACT

- **BEMIP** – integration of gas markets in the Baltic Sea area, finishing with Baltic States Isolation
- **N-S Gas Interconnections in CE** – integration of national gas markets in the region, bringing new sources of supply



Pivotal role of Natural Gas Transmission Infrastructure



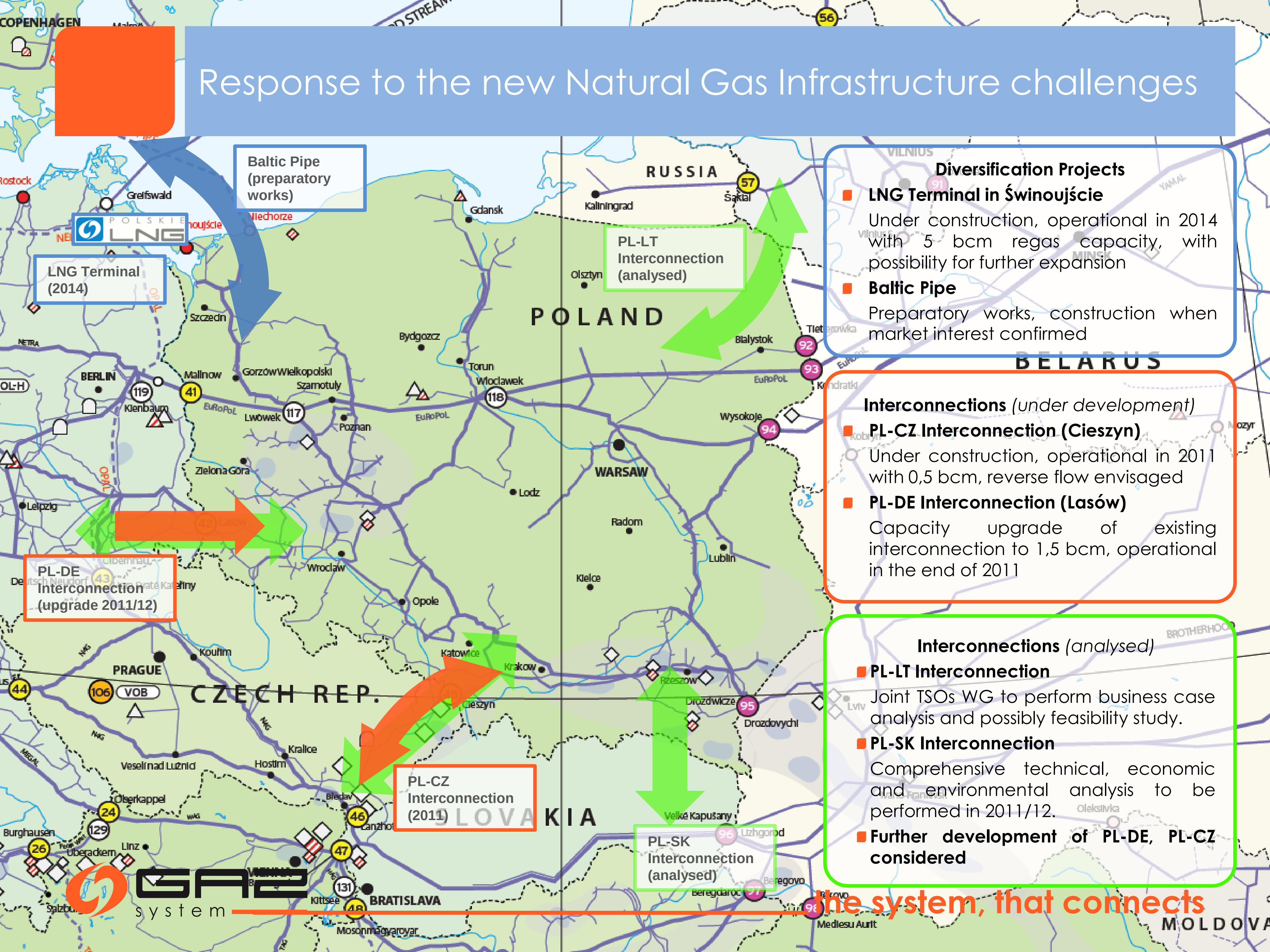
- Infrastructure challenge to meet the growing demand and shift the historical flow patterns

- Bridging Role of Polish Gas Transmission Infrastructure joining:
  - NORTH AND SOUTH as well as
  - EAST AND WEST

GAZ system

the system, that connects

Response to the new Natural Gas Infrastructure challenges



Diversification Projects

- **LNG Terminal in Świnoujście**
  Under construction, operational in 2014 with 5 bcm regas capacity, with possibility for further expansion
- **Baltic Pipe**
  Preparatory works, construction when market interest confirmed

Interconnections *(under development)*

- **PL-CZ Interconnection (Cieszyn)**
  Under construction, operational in 2011 with 0,5 bcm, reverse flow envisaged
- **PL-DE Interconnection (Lasów)**
  Capacity upgrade of existing interconnection to 1,5 bcm, operational in the end of 2011

Interconnections *(analysed)*

- **PL-LT Interconnection**
  Joint TSOs WG to perform business case analysis and possibly feasibility study.
- **PL-SK Interconnection**
  Comprehensive technical, economic and environmental analysis to be performed in 2011/12.
- **Further development of PL-DE, PL-CZ considered**

GAZ system

the system, that connects

LNG Terminal in Świnoujście

Regasification Capacity

- **5,0** bcm/a (570 000 cm/h) – since **2014**
- **7,5** bcm/a (856 000 cm/h) or more – possible enhancement

LNG Offloading

- Facility designated to receive Carriers from 120 000 to 216 000cm (Q-flex vessels)
- Carriers characteristics - draught: 12,5m, length: 315m

Storage

- Two storage tanks with capacity of 160000 cm each.
- Possibility for construction of third additional storage tank (space reserved)

Pipeline

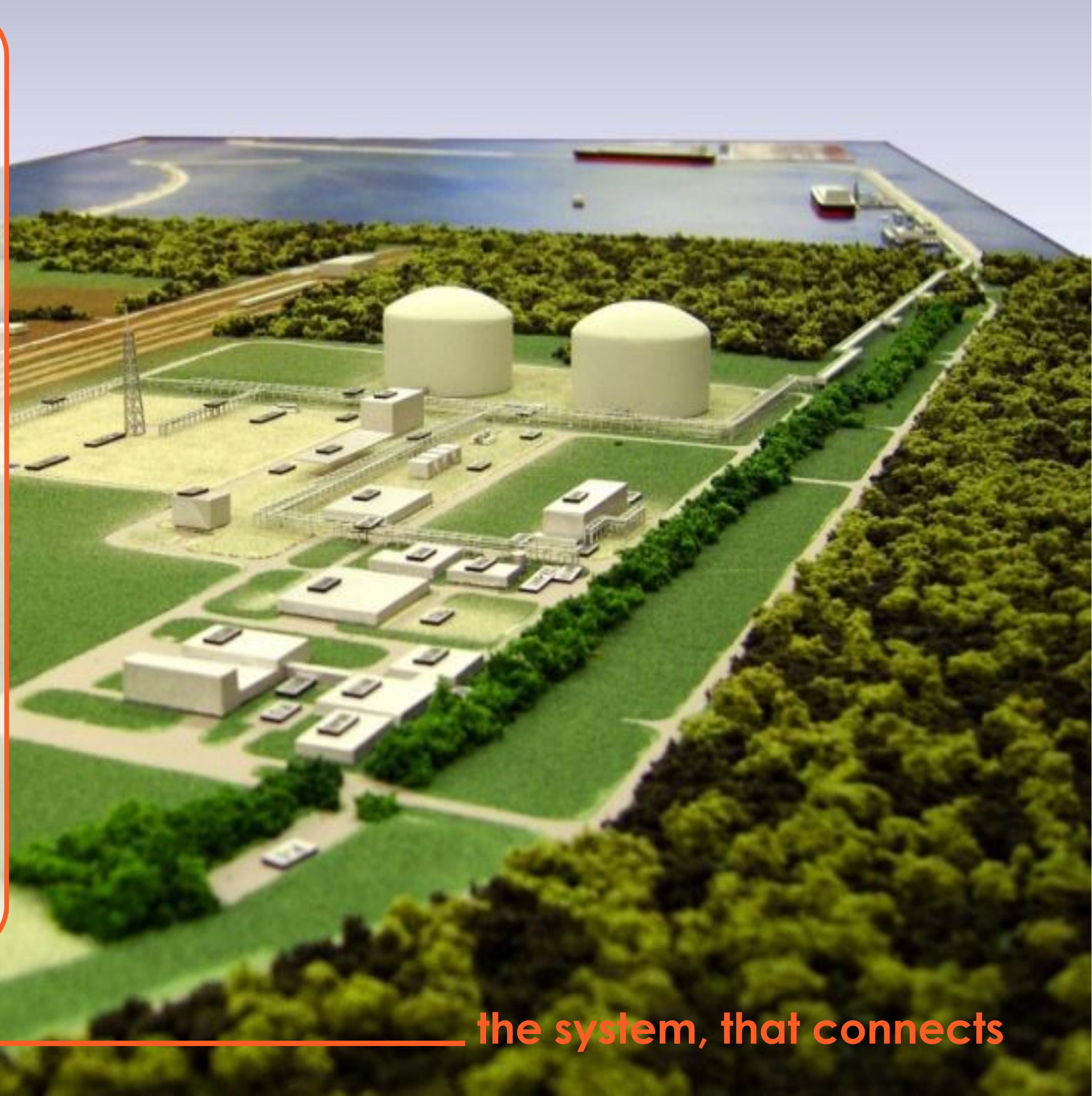
- Inlet pressure of 6,3 to 8,4 Mpa; Temperature: 1°C.

Truck Loading

- Two loading bays with capacity of 95 000 t/a

Costs

- LNG Terminal construction cost estimated at approx. 700 M EUR (including EPC contract valued at 550 M EUR)



LNG Terminal in Świnoujście
Creating opportunities for the region

First LNG Terminal in North-East Europe

- Diversification, 1st new physical source of supply in the region in 2014
- Regas' Capacity offered to the shippers (Open Season Procedures)
- Access to global and liquid LNG market

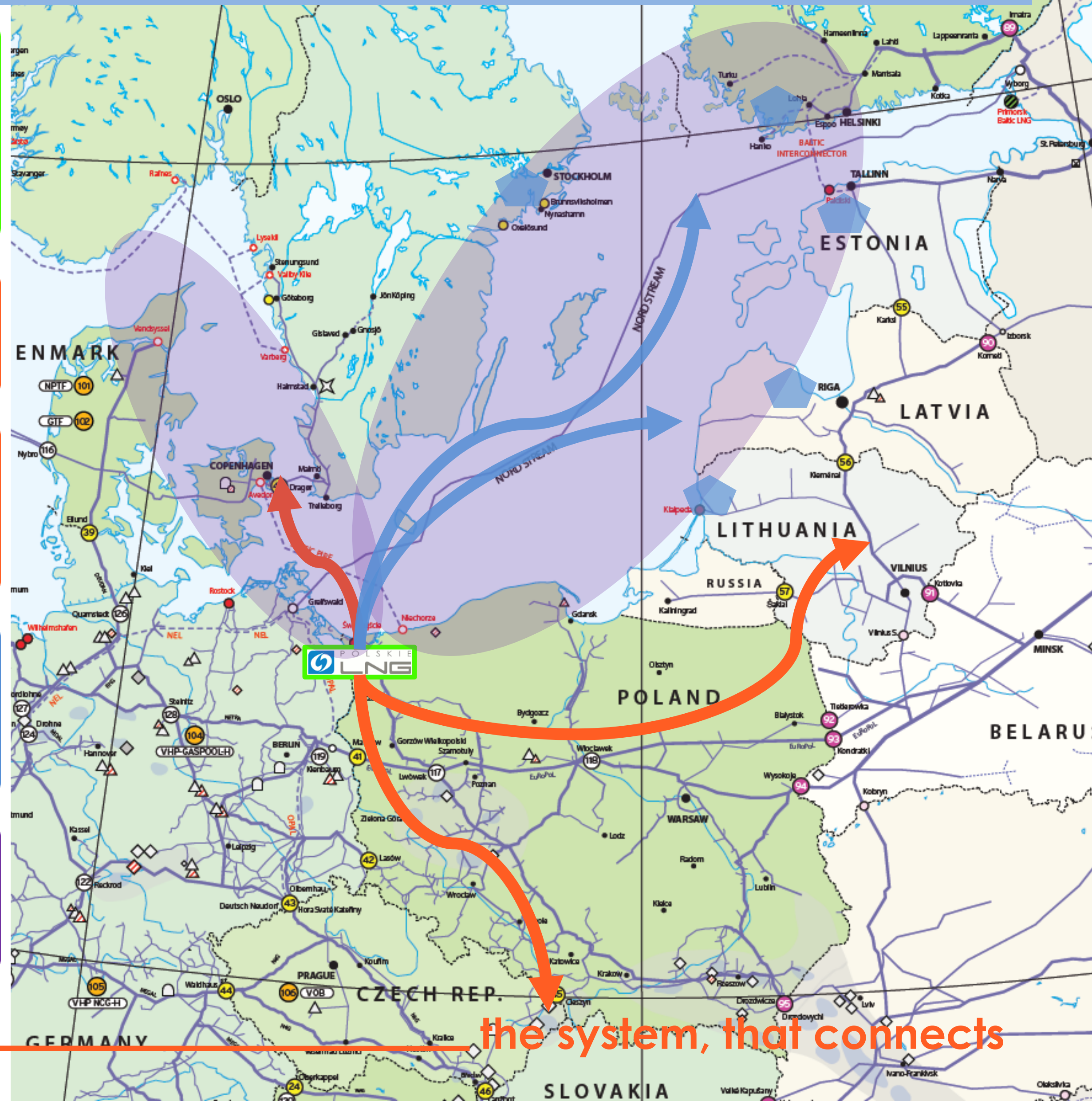
New source of supply for Lithuania and other Baltic States to be analysed within the scope of PL-LT Interconnection.

Important new source of supply for Central European Countries within N-S gas interconnections program.

Potential Enhancement of SoS to Scandinavian Countries via Baltic Pipe.

LNG Terminal in Świnoujście may constitute a regional solution supplying the local smaller LNG Terminals in the Baltic Sea area (smaller vessels), either using the vessels carrying the CNG.

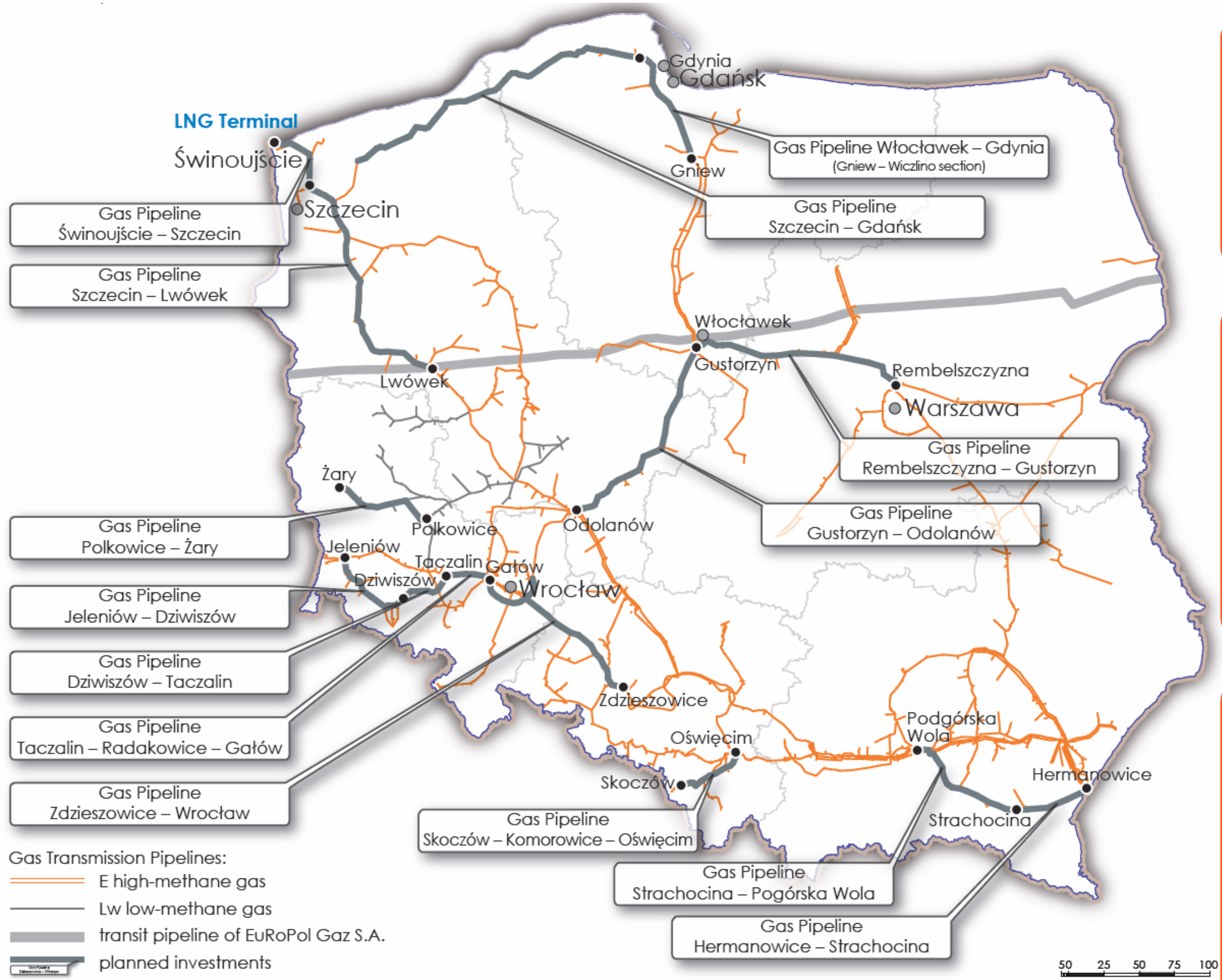
LNG Terminal in Świnoujście as the first such an advanced project in the area may serve a basis for developing the LNG as a fuel for maritime transport in the Baltic Sea.



the system, that connects

GAZ system

Gas Transmission Network Development



GAZ-SYSTEM strategy for the development of the gas market, regional diversification and security of gas supply based on:

- Diversification Projects
- New Interconnections
- **Transmission System Development**

Transmission System development program:

- Scheduled for 2010-2014
- 1000 km of new pipelines & LNG Terminal
- Overall budget of approx. 8 Bn PLN (2 Bn EUR)
- Long-term strategy for further investments between 2015-2017

Transmission System development essential for:

- Transporting gas from new sources to customers
- Building basis for market development
- Enhancing security and safety of operations
- Eliminating bottle-necks and enhancing flexibility

GAZ system

the system, that connects

Gas Transmission Network Development Regional Perspective

- GAZ-SYSTEM's investments are not realised in purge
- Part of broader concept of **N-S Gas Corridor**
- Coordination of the regional infrastructure projects
- Harmonization of market rules

- Providing diversification by granting access to new, competitive natural gas sources (**LNG Terminals, NCS**)
- Stimulation of **„gas to gas" competition** and building **liquid market**
- **Integration of national markets** and expansion of the single EU gas market (finishing isolation of Baltic States)

Enhancing the security of supply:

- Providing possibility for Regional cooperation, preventive and emergency plans

Setting the stage for the „game changers" in the region:

- New European status for the transit Pipelines
  YAMAL
- Major supply projects
  NABUCCO
- New indigenous sources of gas
  SHALE GAS

the system, that connects

Conclusions

- Positive outlook for natural gas market development in Poland
- Shift in Geopolitics of Gas in Poland has already begun
- Crucial role of investment in new Sources of Supply, Transmission capacities and Interconnections
- New infrastructure investments will serve:
  - Diversification of sources and routes of supply
  - Granting access to new, competitive natural gas sources
  - Integration of national markets and expansion of the single EU gas market
  - Stimulation of „gas to gas" competition and building liquid market
  - Enhancing the security of supply
  - Setting the stage for new major supply projects to come, as well as the new indigenous sources of gas

Thank you for your attention

piotr.kus@gaz-system.pl

the system, that connects

GAZ system