Infrastructure, market and regulatory developments in Poland and CEE

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Gas Transmission Operator GAZ-SYSTEM S.A.
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Main facts on GAZ-SYSTEM S.A.

- National gas transmission system operator (TSO) in Poland

- Established in April 2004 on the basis of the Directive 2003/55/EC

- Independent and fully unbundled Company providing equal services to all entities on non-discriminatory basis

- Joint-Stock Company, owned by the State Treasury as the only shareholder

- Strategic Company responsible for Country’s energy security

- A wide investment plan for the period 2009-2014 currently under implementation
GAZ-SYSTEM S.A. in numbers

Financial results at the end of 2012

- **Net sales revenues**: 400 EUR million
- **Operating costs**: 320 EUR million
- **Net profit**: 74.6 EUR million
- **Total assets**: 1.66 EUR billion
- **Number of employees**: 2,299 persons
- **Length of transmission network**: 10,033 km
- **Volume of gas transported**: 16.3 bcm/a
- **Number of gas stations**: 887
- **Number of compressor stations**: 15
- **Number of nodes**: 58

The system, that connects
Main pillars of GAZ-SYSTEM S.A. strategy

Security of supply
Ensuring safe operations of the transmission system as part of the European gas network

Market development
Creating optimum conditions for the development of a liberalised market in Poland

European partner
Build the position of the company as an integrator of the gas market in Central-Eastern Europe

Sustainability
Development of gas infrastructure to enable increased consumption of natural gas as an environmentally-friendly fuel
Natural gas market in the CEE region

Overview of infrastructure in the region

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 incl. coal)

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)

Long-term gas price – 2012 vs. 2013 forecast (USD per 1000 cm)

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<tr>
<th>Country</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>DE</td>
<td>319</td>
<td>354</td>
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<td>AU</td>
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<td>CZ</td>
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<td>372</td>
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<tr>
<td>PL</td>
<td>384</td>
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Source: Izvestia/GAZPROM

Source: Eurostat, ENTSOG

Annual Consumption
Annual Consumption (Per Capita)
Gas in Energy-Mix
Natural gas infrastructure in the CEE region

The N-S corridor in the CEE region
- Internal pipelines and interconnections at various stages of development
- Coordinated to provide regional integration of physical infrastructure
- Key role of the Polish transmission system in the region
- Connecting the Baltic Sea region with the CEE countries
- Setting the stage for the new supply potential
- Crucial for delivering EU Infrastructure Policy goals

Infrastructure leverage
- Relatively low costs of new infrastructure provide leverage for lower commodity prices for end-users
- Investments facilitate new possibilities for the market
- Creating attractive supply mix for the region
- Enhancing economic competitiveness of the region’s economies

Creating Supply potential

The LNG terminal in Świnoujście as the only project in the short/mid-term perspective that guarantees physical diversification of supply sources in the CEE region

- NORTH: LNG/NCs, Shale gas
- WEST: European spot market
- EAST: RU gas
- SOUTH: LNG, SGC
MARKET OVERVIEW
Poland as the biggest natural gas market in Central Europe – 16.3 bcm/a
Annual production of natural gas at the level of approx. 4.5 bcm
Limited share of natural gas in the Polish primary energy consumption (approx. 13%)
Decreasing dependence on imports from one direction, national production covers 30% of demand

NETWORK OVERVIEW
Transmission network with a length of 10,033 km
East-West running pipelines
Three existing interconnections with the EU countries:
   - PL-CZ Interconnection (Cieszyn)
     Project launched in Sep 2011 with capacity of 0.5 bcm
   - PL-DE Interconnection (Lasów)
     Upgrade of 0.6 bcm (to 1.5 bcm) launched in Jan 2012.
     Virtual Reverse Flow on the Yamal Pipeline
     Services introduced in Nov 2011, additional capacity of 2.3 bcm
These projects increased import capacities to Poland by 30%

New flow in PL-UA direction
Since Nov 2012 GAZ-SYSTEM offers natural gas transport to Ukraine via Hermanowice
The country is short in storage capacities (approx. 2 bcm). Assessment of potential UGS project under way.
On-going and future infrastructure investments in Poland

Linking the CEE and Baltic regions
- Expansion of LNG terminal in Świnoujście
- PL-LT interconnection
- Further development of the transmission system
- Development of new UGS capacities and commercial development of shale gas business areas

Creating the N-S corridor in the CEE region
- PL-CZ interconnection in Hat
- PL-SK interconnection
- Development of internal network to ensure high level of supply reliability and improved interoperability between the CEE systems

Connecting the gas market in Poland
- LNG terminal in Świnoujście
- Enhancement of the internal grid - more than 1,000 km of new pipelines
- PL-CZ interconnection in Cieszyn
- Upgrade of PL-DE interconnection in Lasów
- Physical reverse flow on the Yamal pipeline

GAS system
the system, that connects
Cross-border interconnections – current status

POLAND – LITHUANIA INTERCONNECTION
The feasibility study completed in May 2013
Planned technical parameters:
  - Capacity: 2.3/1 bcm/y (stage I)
  - Diameter: 700 mm
  - Length: 357 km
The project as optimal measure for the ending up isolation of the Baltic States from the EU gas market
Financial support from EU funds is essential for ensuring financial profitability of the project

POLAND – CZECH REPUBLIC INTERCONNECTION
The feasibility study completed in 2012
Planned technical parameters:
  - Capacity: 6.5/5 bcm/y (stage I)
  - Diameter: 1000 mm
  - Length: 55 km

POLAND – SLOVAKIA INTERCONNECTION
The feasibility study completed in May 2013
Planned technical parameters:
  - Capacity: 5.7/4.7 bcm/y (stage I)
  - Diameter: 1000 mm
  - Length: 60 km

EASTERN AND WESTERN AXIS OF THE NORTH-SOUTH CORRIDOR IN POLAND
Investments prerequisite for the completion of the North-South corridor in the CEE region
Upgrading the internal system to guarantee proper operational functioning of the interconnections with the Czech Republic and Slovakia

The projects well assessed under the TENE framework
The PCI status to be officially granted by the end of September 2013
Financing of the gas projects in Poland

Sources of financing for the investment programme in years 2011-2014
(2 bEUR in total)

- 150 mEUR EIB – LNG terminal
- 150 mEUR EIB
- 125 mEUR EEPR
- 300 mEUR ERDF
- 425 mEUR commercial banks
- 50 mEUR PKO BP
- 800 mEUR equity

Potential financing structure of the investment programme in years 2014-2018
(1.25 bEUR in total)

- 375 mEUR EU Financial facilities
- 500 mEUR Debt (loans, bonds, EIB, EBRD)
- 187.5 mEUR PIR – Polish Development Investment Scheme
- 187.5 mEUR Equity
**Regasification Capacity**

- 5.0 bcm/a (570,000 cm/h) – 2014
- 7.5 bcm/a (856,000 cm/h) or more – possible enhancement

**LNG Offloading**

Facility designated to receive Carriers from 120,000 to 216,000 cm³ (Q-flex vessels)

Carriers characteristics - draught: 12.5 m, length: 315 m

**Storage**

- Two storage tanks with capacity of 160,000 cm³ 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)
- Project has EU financial support via EEPR
Deploying LNG in the region

First LNG Terminal in the North-East of Europe
First 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

Connecting the gas islands in the Baltic States
New source of supply for Lithuania and other Baltic States to be analysed within the scope of the PL-LT interconnection.

CEE dimension
Important new source of supply for Central European Countries within the N-S corridor.

Reloading of LNG
LNG Terminal in Świnoujście may constitute a regional solution supplying the local smaller LNG Terminals in the Baltic Sea area (smaller vessels).

LNG in maritime transport
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.
LNG Terminal – photos from the construction site
GAZ-SYSTEM systematically carries out procedures to verify and estimate the current needs of the market participants in the scope of new capacity.

As a result of the previously conducted procedures - the number of shippers and transmission contracts concluded by GAZ-SYSTEM increased several times over the last five years.
Implementation of the Network Codes

**Main goals of the Network Code**

- **Network Code development process by ENTSOG**
  - to promote and define harmonised capacity allocation mechanisms, i.e., auction procedures, and a small set of standardised bundled cross border capacity products
  - Agreed (04/13), Publication (08/13), In force (11/15)

- **Tariff Network Code**
  - to ensure efficient gas trading and competition based on cost-reflective tariffs that give incentives to invest

- **Interoperability Network Code**
  - to promote integration of European markets by advancing operational, technical, communications and business-wise interoperability between systems

- **Balancing Network Code**
  - to facilitate cross-border gas trade and the further development of competitive and efficient gas wholesale markets in Europe

**CAM Roadmap**

GAZ-SYSTEM together with ONTRAS are implementing a pilot project for establishing bundled capacity products at the PL-DE interconnection point in Lasów (first auctions took place in June 2013)

**Main provisions of CAM and Balancing Network Codes are already implemented in Poland**

* - indicative schedule
Market and regulatory developments in Poland

**NEW GAS LAW**
Full implementation of the III energy package

**NATURAL GAS ROADMAP**
Natural gas market liberalisation (end of price regulation)

**TSO ACTIONS**
Building basis for functioning natural gas market by implementing timely European network codes, cooperating with market participants and upgrading the infrastructure

**POLISH POWER EXCHANGE**
Providing necessary mechanisms and liquidity

A competitive and well-functioning gas market in Poland
The V4 gas markets (Visegrad Group) amount for 41.1 bcm/a with the potential to growth (to about 60 bcm/A)

Elements influencing the market integration:
- Infrastructure (ie. interconnectors)
- Common goals
- New sources (LNG, gas from the South)
- Regulatory framework

The gas market in Ukraine totals around 53 bcm/a - intensified negotiations with the neighbouring countries to upgrade interconnections and tap in supplies from EU market
Supply possibilities from PL and HU already in place (SK and RO under discussion.

Integration of the Baltic States (with Finland) and Austria brings additional 18 bcm/a (9 + 9)

In total, the V4 market and neighbours could reach the level of more than 100 bcm/a – new potential to explore

Strong political backing from V4 countries governments. First conceptual approach developed in the study „THE GAS TARGET MODEL FOR THE VISEGRAD 4 REGION” by OSW & FSR.
Important step to initiate discussion on the concrete framework and solutions, as well as their implementation in the Region

Source: Eurostat, ENTSOG
Conclusions

**Crucial need for Infrastructure and Regulatory Developments to create a liquid and competitive Natural Gas Market:**
- Market integration through implementation of NS Gas Corridor (a number of coordinated infrastructure projects, with EU PCI status)
- Building market area with secure and diverse supply portfolio
- Creating regulatory framework with EU Network Codes harmonising the market rules in all countries

**Important shift in the Region has already been initiated**
- TSOs from the V4 region already laid first foundations by construction of CZ-SK reverse flow and PL-CZ/SK-HU interconnector.
- Strong political support from V4 governments

**Assessing outlook for natural gas role in the regional energy mix:**
- Demand recovery, Sustainability & RES growth strategy, Future shale gas production
- **Vs.**
- Unclear future role of gas in EU energy strategy, countries’ energy mix and its competitiveness towards other fuels
Thank you for your attention

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