

Role of TGE in the Polish gas market and in the market integration process in CEE

At the heart of Central European power and gas trading

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Poland - the third largest gas market in the region / 2018.

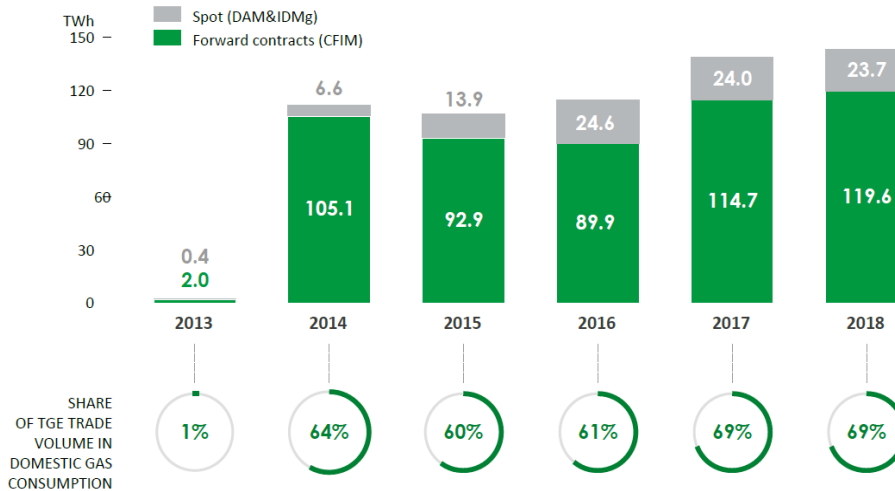
| Market | Gas Consumption in billion cm | Gas consumption in TWh | The share of gas in the energy mix |
|---------------|-------------------------------|------------------------|------------------------------------|
| Austria | 9,0 | 95 | 21,2% |
| Białoruś | 19,0 | 200,4 | 63,4% |
| Bułgaria | 3,0 | 31,6 | 13,4% |
| Chorwacja | 2,4 | 25,3 | 25,6% |
| Czechy | 8,4 | 88,6 | 5,5% |
| Estonia | 0,5 | 5,2 | 7,0% |
| Mołdawia | 3,0 | 31,6 | 53,0% |
| Litwa | 2,3 | 24,2 | 32,0% |
| Łotwa | 1,3 | 13,7 | 23,4% |
| Polska | 18,3 | 193 | 8,0% |
| Rumunia | 11,9 | 125,5 | 27,1% |
| Słowacja | 4,6 | 48,5 | 23,8% |
| Słowenia | 0,9 | 9,5 | 12,2% |
| Ukraina | 29,8 | 314,3 | 30,0% |
| Węgry | 10,3 | 108,6 | 33,0% |

Source: Own elaboration based on reports of national market regulators, European Commission, BP, OXFORD INSTITUTE FOR ENERGY, IEA,CIRE).

TGE operates the largest gas exchange in CEE



TGE volumes 2013-2018 (TWh)



20.12.2012

Opening of the gas exchange

- ◆ Operation of the gas market:
 - for high-methane gas (2012)
 - for low-methane gas (2018)
- ◆ Growing number of participants:
 - 30 entities operating directly
 - 75 entities operating through brokerage houses
- ◆ Broad range of products and services "under one roof" (spot and forward market), Trading & clearing
- ◆ Market activity supervised by the Polish Financial and Supervision Authority and Energy Regulatory Office
- ◆ Compliance with national and EU regulations (MIFID II, REMIT)

TGE group operates in the field of commodity trading, clearing and settlement services



TGE Group



TGE is a pioneer in the implementation of innovative solutions in the field of commodities trading



IRGIT is an institution responsible for physical delivery, financial settlement of transactions and guaranteeing safe trading on the exchange



InfoEngine provides services for participants of the electricity market. It is the largest Polish independent Trade Operator and the Balance Responsible Party

Roles of the TGE Group on the Polish market

1



Market Integrator

TGE concentrates supply and demand in one place – because of that it is possible to do business within a competitive market environment. TGE fulfils the role of a wholesale trading center in Poland and provides the opportunity to trade on clearly defined terms. Thanks to the gas exchange, new realities have been created, under which the expectations of its participants are monitored and addressed.

2



Price Indicator

TGE, thanks to the concentration of trade in one place, is able to indicate the gas price on the wholesale market, which is determined under fully competitive conditions. Such price stands as a transparent reference for other bilateral transactions concluded on the gas market. It is also the basis for the calculation of gas indices.

3



Guarantee of safe trading

The gas market run by TGE guarantees full security of trade. The implemented system solutions and control procedures effectively protect market participants against risks related to financial condition of counterparties, manipulation and unfair trading practices.

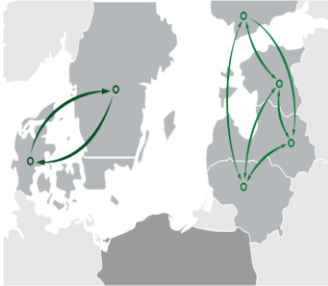
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Market information provider

The gas exchange provides market information for all market participants, who, relying on the published data about prices, volumes and the respective dynamics can make informed business decisions. TGE gas market data are available among others in Bloomberg, Reuters and Montel.

What is happening in the Baltic region?



INTEGRATION PROCESSES

Creation of a common balancing zone in the western part of the Baltic Sea (Denmark and Sweden). Similar integration measures are also being undertaken in the eastern direction: Lithuania, Latvia, Estonia and Finland



SECURITY BUILDING

There are already 2 LNG terminals in operation in Poland and in Lithuania – the total regasification capacity is 9 bcm annually. Another terminal in Estonia is under consideration. By the end of 2022, the Baltic Pipe with an annual gas transmission capacity of 10 bcm is to be completed



GAS MADE IN THE USA

First spot deliveries of liquefied gas from the USA have arrived to the LNG terminals in Świnoujście and Klaipėda



LNG BUNKERING VESSEL

This is a market which is still in its infancy in the Baltic region. It has a high potential for growth due to regulations (the so-called Sulphur Directive), government support programmes (Blue Baltics project coordinated by Klaipėdos Nafta), national policy frameworks for the development of alternative fuel infrastructure and dynamically developing coastal bunkering infrastructure (for example in Finland bunkering facilities are being developed in ports)

Status of integration of the gas market in the Baltic region and TGE

01

Lithuania, Latvia, Estonia and Finland belong to the European Union but their gas markets are **infrastructurally separated** from the rest of the Community

02

The commissioning of interconnector between Finland and Estonia and Poland and Lithuania (GIPL) will end the state of isolation

03

Market integration combined with supply diversification measures is underway in the Baltic States

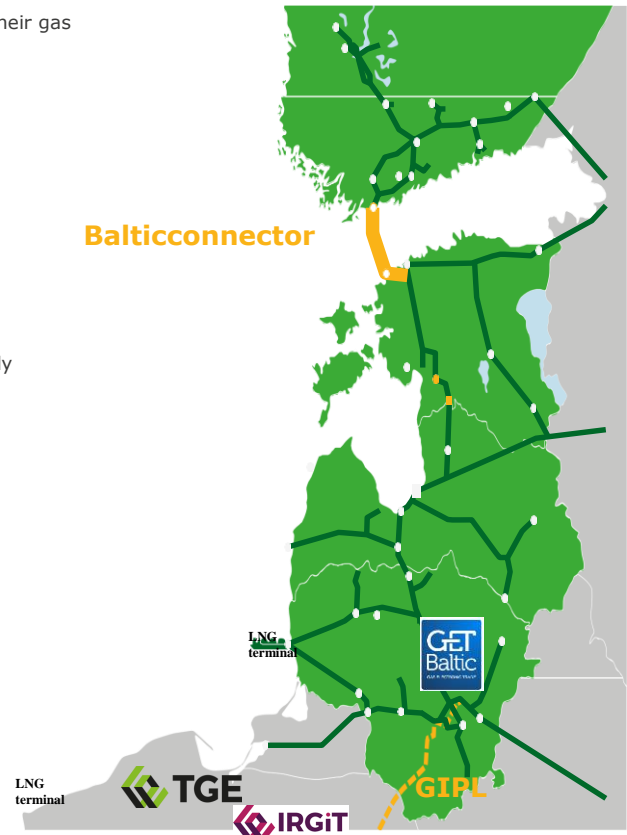
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The common balancing zone for 4 countries may cover a total of approximately 5.7 bcm of gas consumed annually

05

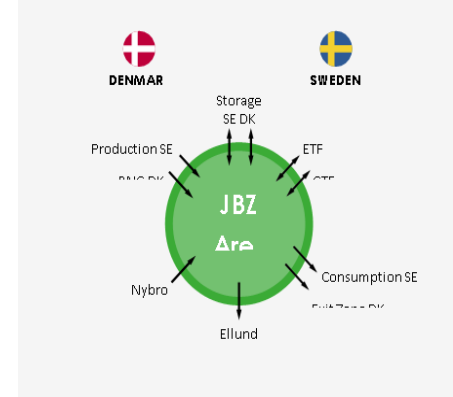
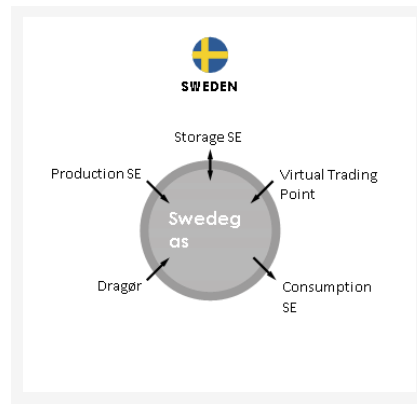
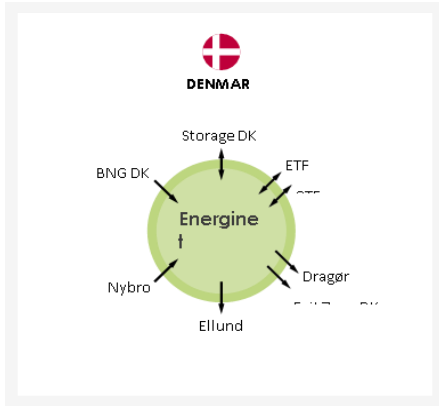
Gradually the conditions for the development of a safe and competitive gas trade between Poland and the Baltic States are emerging

- ♦ **Sept 16, 2019 - an advisory services agreement was signed between the IRGiT (part of TGE Group) and the Baltic-Finnish Gas Exchange GET Baltic.**
- ♦ The objective of the cooperation is to create an optimal collateral and clearing model as well as a risk management system for spot and forward gas markets operated by GET Baltic.
- ♦ First stage - jointly develop a clearing concept taking into account the specificity of the Baltic-Finnish Gas Exchange,
- ♦ Further stages - focus on the implementation of an automated IT system for risk management and streamlining and automating the clearing model



Source: Pipeline Technology Journal

Joint Balancing Zone Project



Joint Balancing Zone

- a project to interconnect the Danish and Swedish gas markets into a single common balancing zone

The combined markets of Denmark and Sweden represent in total approximately 3.4 bcm of gas consumption per annum (2.6 + 0.8)

Poland will establish a connection with these markets by the end of 2022 thanks to the Baltic Pipe, which will also enable supplies from Poland to Denmark and Sweden

After 2022, conditions will be created for the development of a secure and competitive gas trade between Poland and the Scandinavian countries

Ukraine as a country with high potential



TGE sees Ukraine as a market with high potential for gas trade growth. The key growth include among other:

- ◆ **No 1 by transit volume of Russian Gas to the EU** (93,5 bcm - 2017)
- ◆ **No 1 in Europe storage facilities (31 bcm)** with excess capacity,
- ◆ **No 2 in Europe by natural reserves** (906 bcm - 2017),
- ◆ **No 4 in Europe by domestic production** (20,5 bcm - 2017) with potential to increase,
- ◆ **No 8 in Europe by gas consumption** (32 bcm - 2017) but only 65% of demand satisfied by domestic production,
- ◆ **No 14 in Europe by import needs** (14,1 bcm - 2017) covered only from EU (2017-2018)
- ◆ **Extensive gas transportation system** (entry capacity –304bcm, exit capacity –178.5 bcm) - potentially linking many market players



In addition:

- ◆ Market liberalization (which is driving towards competition),
- ◆ Unbundling - On September 18, the Cabinet of Ministers of Ukraine approved the step plan of unbundling of the gas transmission function from NJSC "Naftogaz of Ukraine", thereby allowing to accomplish unbundling in the beginning of January 2020.
- ◆ Ongoing Ukrainian / EU negotiations with Gazprom about gas transit after 2019. 9 December - the meeting of the presidents of Ukraine and Russia did not bring any settlement.



The launch of BalticConnector, GIPL and Baltic Pipe will enable **infrastructural connection of Baltic markets** with current total gas consumption volume of around 28 bcm (approx. 295 TWh)



The ongoing processes in the Baltic gas markets create new opportunities for development and cooperation between market participants



Common balancing zones will form the basis for the future development of an international wholesale gas market



Space opens up for new products to be offered by Polish and foreign gas market participants



Competitive price offers for gas from various sources (including LNG) will emerge on a larger scale (third floating gas terminal in the Gulf of Gdańsk 2025), improve the security and enable further market development (e.g. small-scale LNG)



Thanks to the market reforms, Ukrainian gas market should become more transparent, safe and efficient and closer to EU

Thank you!

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