

TGE

Polish Power Exchange

At the heart of Central European power and gas trading



Who we are



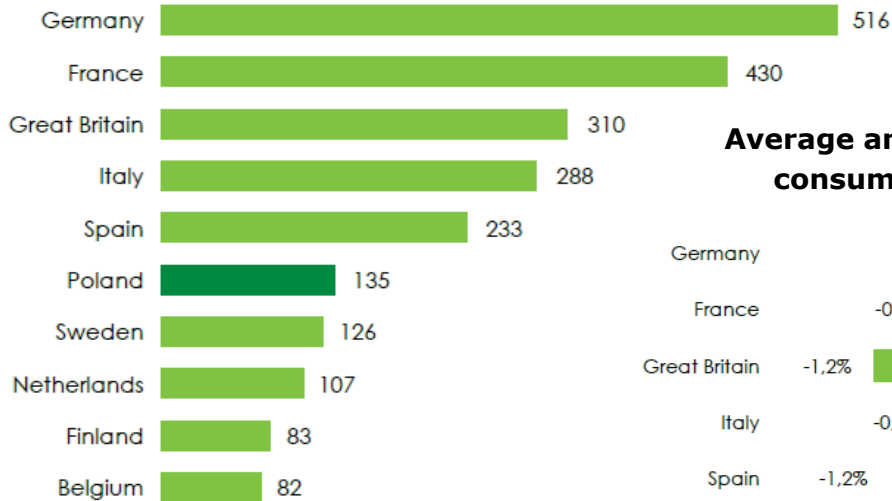
- ◆ Established in 1999, the only licensed commodity exchange in Poland (licence since 2003)
- ◆ Strong and stable shareholder – Warsaw Stock Exchange (WSE Group)
- ◆ Member of the European Multi-Regional Coupling (MRC)
- ◆ Fastest-growing commodity exchange in the region
- ◆ Member of EUROPEX – the European Association of Energy Exchanges, Association of Power Exchanges - an international organisation of power exchanges from all around the world and the Association of Futures Markets – an international association of commodity and futures exchanges
- ◆ The only domestic institution to offer a full range of products related to the energy market: electricity, natural gas, CO2 allowances, certificates of origin, guarantees of origin
- ◆ Within WSE Group, TGE is responsible for creating a commodity-based financial instruments market
- ◆ Approved to the ACER's list of platforms for reporting transaction information under REMIT
- ◆ Relationship with an experienced NASDAQ technology partner – X-stream Trading Technology



The Exchange's activity has always been transparency-driven and market-oriented

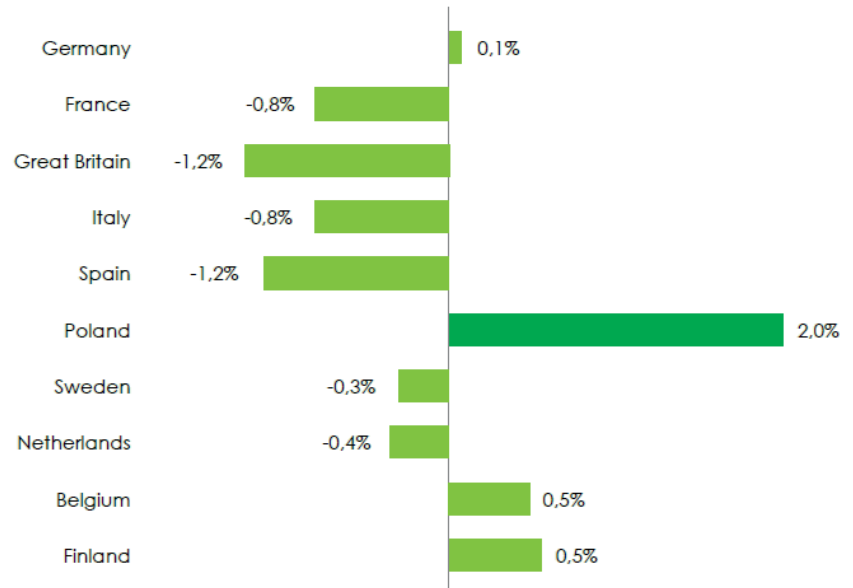
Poland is one of the largest power markets in the European Union

Electricity consumption in 2014 (TWh)



Among the top electricity consumers

Average annual growth of electricity consumption in EU 2009-2014



Poland: Cross-border exchange

- ◆ In 2014 gross national electricity consumption amounted to **135 TWh***
- ◆ The gross volume of electricity production reached the level of **156,6 TWh**
- ◆ The difference between these values was balanced with electricity imports, which excess over exports in 2014 amounted to **2,17 TWh**
- ◆ In 2014 Poland became net importer of electricity**.

Generation structure, domestic balance of cross-border exchange and electricity consumption in 2013-2014 [GWh]***

	2013	2014	Growth rate 2014/2013%
Total electricity generation	162 501	156 567	-3,65
Hard coal-fired power plants	84 566	80 284	-5,06
Lignite-fired power plants	56 959	54 212	-4,82
Gas-fired power plants	3 149	3 274	3,98
Industrial power plants	9 171	9 020	-1,64
Water utility power plants	2 762	2 520	-8,76
Wind units	5 823	7 184	23,38
Other renewable sources	72	73	0,18
Cross-border exchange balance	0 4 521	- 2 167	- 148,00
National electricity consumption	157 980	158 734	0,49

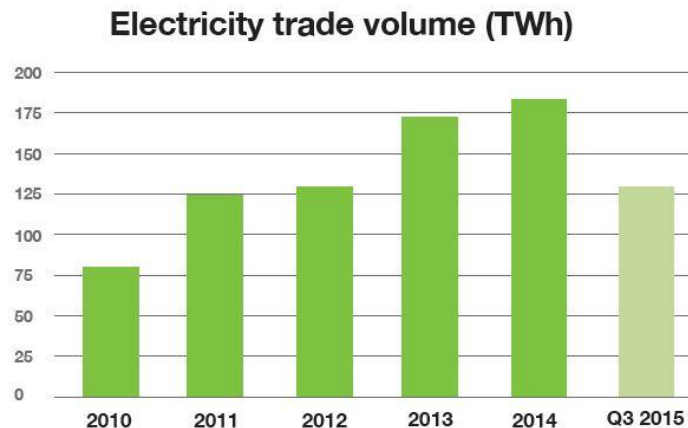
* Source: BP Statistical Review

** Source: <http://www.ure.gov.pl/en/about-us/reports/67,Reports.html>

***Presented values are determined on the basis of measurements collected by TSO during regular NES operation. Therefore, in some cases these data may be different from the final data provided by energy undertakings for statistical purposes. Source: ERO, on the basis of data provided by PSE S.A.

- ◆ **The cumulative volume for the first three quarters of the 2015 was 127,8 TWh declining by mere 0.28 per cent year on year**
- ◆ **The cumulative year-to-date volume on the spot market at the end of the third quarter was the highest ever in the history of TGE, reaching 18,3 TWh**
- ◆ **Total turnover on CFIM in the three quarters 2015 was 109,5 TWh declining by 0.91 per cent YoY**

Year by year TGE strengthens its position in Poland and in the region



186.8 TWh in 2014

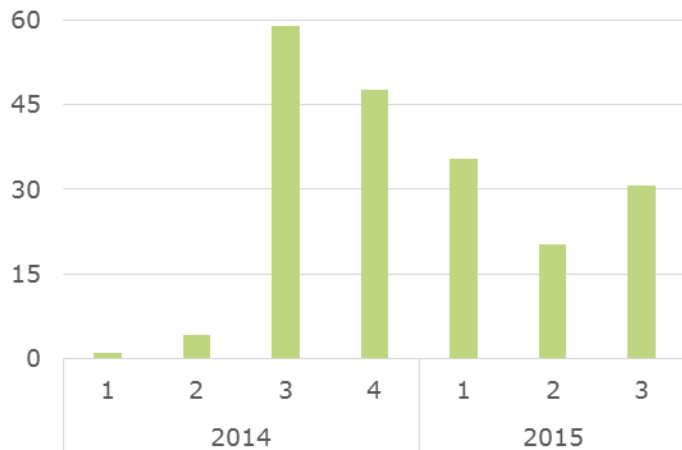
Source: TGE

- growth by 5.8% YoY
- 119.4% of electricity production in Poland
- 117.7% of domestic consumption

Natural gas market – TGE's role



Volumes of natural gas market at TGE, TWh



Gas market – the obligation was a stimulus for the growth of the entire industry

- ◆ **Since 11 September 2013 – obligation to sell gas through the exchange – gradually stepping up starting from 30% in 2013, 40% in 2014, to 55% in 2015**
- ◆ **ERO: Q3 2015 - 58 out of 165 energy companies, holding licences for gas supply participated in natural gas trading at the exchange**
- ◆ **ERO: In the years 2011-2013 only 429 customers decided to switch the supplier, as at 30.09.2015 over 22 thousand customers changed their supplier, which is an evidence of a huge progress of gas market liberalisation**
- ◆ **Q3 2015 - 58 active participants of gas markets at TGE, 22 direct TGE members, including 4 brokerage houses**

**111.6 TWh in 2014
approximately
10.17 billion cu. m**

**48 active participants of
gas markets at TGE in
2014**

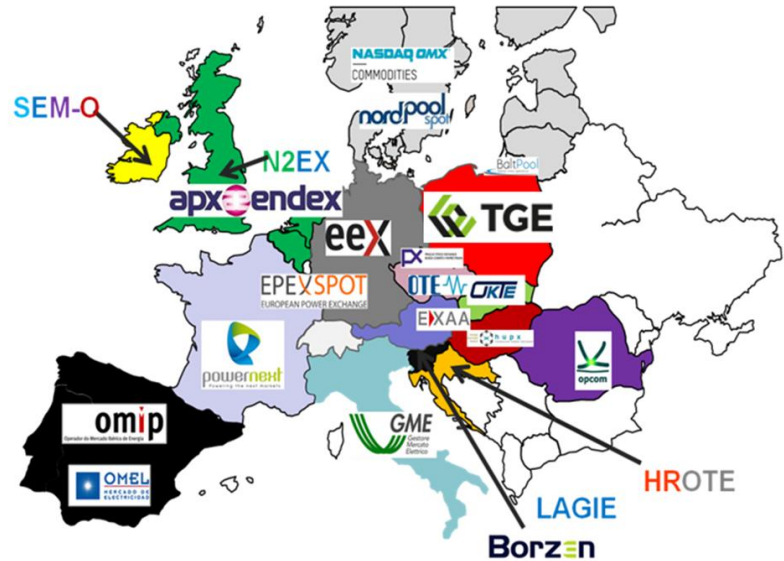
86,5 TWh in Q1-Q3 2015

**58 active participants of
gas markets at TGE in Q3
2015**

For comparison, in the first half of 2013, 15 companies participated in the gas market through brokerage houses

TGE: Playing the role of NEMO on the European electricity market

- ◆ TGE declared to ERO its intention to apply for the so-called NEMO function for and on behalf of the Polish electricity market, and the rotary function of Market Coupling Operator
- ◆ The operatorship will place TGE among the most prominent exchanges in the European electricity market
- ◆ According to CACM Regulation (August 2015), each Member State must nominate at least one electricity exchange to play the role of NEMO for each pricing zone of the domestic electricity market with respect to the Day Ahead Market and the Intraday Market



- ◆ **The key role of the “Market Trio”** - the TSOs, energy exchanges and regulators supervised by the European Commission, ACER, ENTSO-E – are obliged to adhere to the principle of mutual loyalty, close cooperation, information exchange, transparency and highest service standards
- ◆ **The fundamental task - to ensure the smooth creation and effective operation of the European physical energy market**
- ◆ **A new capacity of energy exchanges** - NEMO function attributed to exchanges in CACM code make them as important in trading as TSO in transmission throughout Europe
- ◆ **Competition between exchanges** - the exchange which is recognised as a NEMO in one market (4 years) may carry out the same activity and offer services to participants on other domestic markets or in other bidding zones. Areas where statutory provisions on exchange monopoly apply are the only exception here
- ◆ **Socialization of costs** incurred by TSOs and NEMOs with regard to the creation of the spot market on the European, regional and national level

TGE is prepared to fulfill the role of NEMO. We expect to obtain this status in December



Projects supporting the integration of the European energy market - LitPol

◆ **The participation of TGE in LitPol Project – commissioning planned in mid December 2015**

- ✓ Pursuant to a Memorandum of Understanding between operators and exchanges (PSE, LitGrid, NPS and TGE) it was agreed that TGE and NPS will cooperate using the procedures applied in the SwePol Link since December 2010, and will hold a single joint auction at the northern border of Poland according to the PCR market coupling model, where TGE will be the exchange serviced by NPS
- ✓ The power link between Lithuania and Poland will be the second transboundary connection under MRC
- ✓ The LitPol Link completed in November offers transmission capacity of 500 MW, and the SwePol Link 600 MW

◆ **New power interconnection Poland - Lithuania**

- ✓ Will connect the power system of Baltic countries: Lithuania, Latvia and Estonia with the power system of Western Europe
- ✓ Will contribute to the creation of a single electricity market of the EU
- ✓ Will improve the certainty of interrupted electricity supply



TGE in the European Multi Regional Market Coupling

In July, TGE became a full member of the European Multi Regional Market Coupling

- ◆ TGE signed an Agreement on the Accession to the Multi-Regional Market Coupling Day Ahead Operations Agreement (DAOA) which provides for the cooperation of 10 power exchanges and 21 transmission system operators
- ◆ The Accession Agreement is a prerequisite for the TGE's participation in the creation of the European market based on the model developed in the course of the Price Coupling of Regions (PCR) Project
- ◆ For TGE, the status of a MRC member and the participation in the PCR Project mean the opportunity for proactive and full involvement in regional market projects and the implementation of EU electricity market mechanisms in cooperation with Western European exchanges



- ◆ **MRC is an area with electricity demand currently estimated at 2800 TWh which accounts for 85% of the European volume**
 - ◆ **Each day, around 4 TWh of electricity worth approx. 150 million Euro is traded**

Technology development at TGE – new trading system

- ✓ TGE is the first energy sector client of Nasdaq (NDAQ) to use the X-stream Trading system, one of the most popular exchange trading systems worldwide
- ✓ The new technology solution provides TGE with an improved functionality and enables the support of continuously growing volumes, as well as future business expansion with other commodity and derivative instruments
- ✓ The introduction of a more sophisticated technology enables the use of the SAPRI platform (Nasdaq platform supporting energy auctions) in connection with the launch of the FIM
- ✓ The SAPRI platform is also useful during the preparations of the exchange to the participation in the European transboundary electricity auction within the PCR mechanism (Price Coupling of Regions)



Contact:

Towarowa Giełda Energii S.A. (TGE)
23 Poleczki St, Building H
02-822 Warsaw, Poland
T: (+48) 22 341 99 12, F: (+48) 341 99 10
E: tge@tge.pl | www.tge.pl

