

TRADING / GUARANTEEING / EDUCATING



2020
ANNUAL REPORT



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2020



2020 AT TGE

ENERGY MARKET

SPOT MARKET

+2.6%

COMMODITY DERIVATIVES MARKET

+6.8%

NATURAL GAS MARKET

SPOT MARKET

+14.0%

COMMODITY DERIVATIVES MARKET

+1.5%

PROPERTY RIGHTS MARKET

FOR ENERGY EFFICIENCY

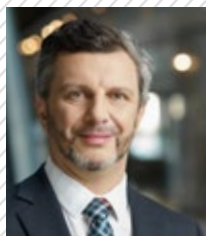
-61.2%

FOR ELECTRICITY FROM RES

+4.1%

AGRICULTURAL MARKET – OPENED IN 2020

LETTER FROM THE PRESIDENT



Dear Ladies and Gentlemen,

I am pleased to present you the Annual Report outlining the results and key events at the Polish Power Exchange (TGE) in 2020. Last year was 20th anniversary of the first transaction on our trading floor. It gave birth to the formation of a transparent and liquid energy market in Central and Eastern Europe. I would like to take this opportunity to thank all those who, for two decades, have contributed to the creation of an entity without which it is difficult to imagine the Polish energy market today. I would like to thank my predecessors, project teams, advisors and all those who have worked for the development of the exchange market. For my part, I undertake to continue our joint work and to make every effort to ensure that the power exchange not only reflects market changes in the coming years, but also proactively creates them.

The first transaction on the Day-Ahead Market was 483 MWh - a volume corresponding to the annual consumption of 240 families. Currently, the daily turnover on the electricity market corresponds to the annual demand of over 330,000 households – the entire Wrocław agglomeration. In the 2020 Report of the President of the Energy Regulatory Office, it can be read that: “[...] A developed commodity market should provide both the

possibility of concluding contracts for current deliveries as well as medium- and long-term contracts. One of the manifestations of the development of commodity markets will be the efficient operation of the power exchange. The publicly announced exchange price will contribute to making the right decisions regarding the purchase of energy under bilateral contracts [...]”. The increase in the volume of trading and the importance of TGE allows us to conclude after 20 years that the then vision of the market has materialized for both electricity and natural gas.

2020 is another year of record turnover. The volume on the electricity market increased by 6.2% compared to 2019, due to an increase in the spot market of almost 3% and in the derivatives market of almost 7%. The volume on the natural gas market grew by 3.4%, mainly in the short-term markets – by 14%, while the volume of futures contracts was 1.5% higher than in the previous year. The volume of trading in property rights for electricity generated in RES also increased by 4.1%, and the only decrease was recorded in the property rights market related to energy efficiency, which was lower by 61.2% in comparison to 2019.

LETTER FROM THE PRESIDENT

The aim of the Polish Power Exchange (TGE) is to retain the position of a leading exchange in the CEE region in terms of liquidity and commercial offering. We know that achieving it depends on our actions to stimulate the trading and on opening up to voices from the market. In 2020 we established the Market Council the members of which represent professional associations. It is a consultative and advisory body for the market-oriented development of TGE. The effects of the Council's work can already be observed today in the implemented projects and in the product offer.

In order to encourage our members to increase trading in the energy markets, not only did we maintain the Maker-Taker program in the electricity market, but we also extended its range to the natural gas market. We have launched a dedicated AIR Information Platform, where subscribers can view detailed analyses, information and reports describing energy markets.

Finally, I would like to mention another milestone that took place last year and which makes our trading floor open to completely new customers. Fitting our actions into the strategic vision of the capital group of the Warsaw Stock Exchange (GPW),

we launched the Agricultural Exchange Market in the first half of last year. The market operating on the basis of the Authorized Warehouse System in a country with one of the highest levels of agricultural production in the European Union allows us to assume that in the coming years we will be able to inform you about its development.

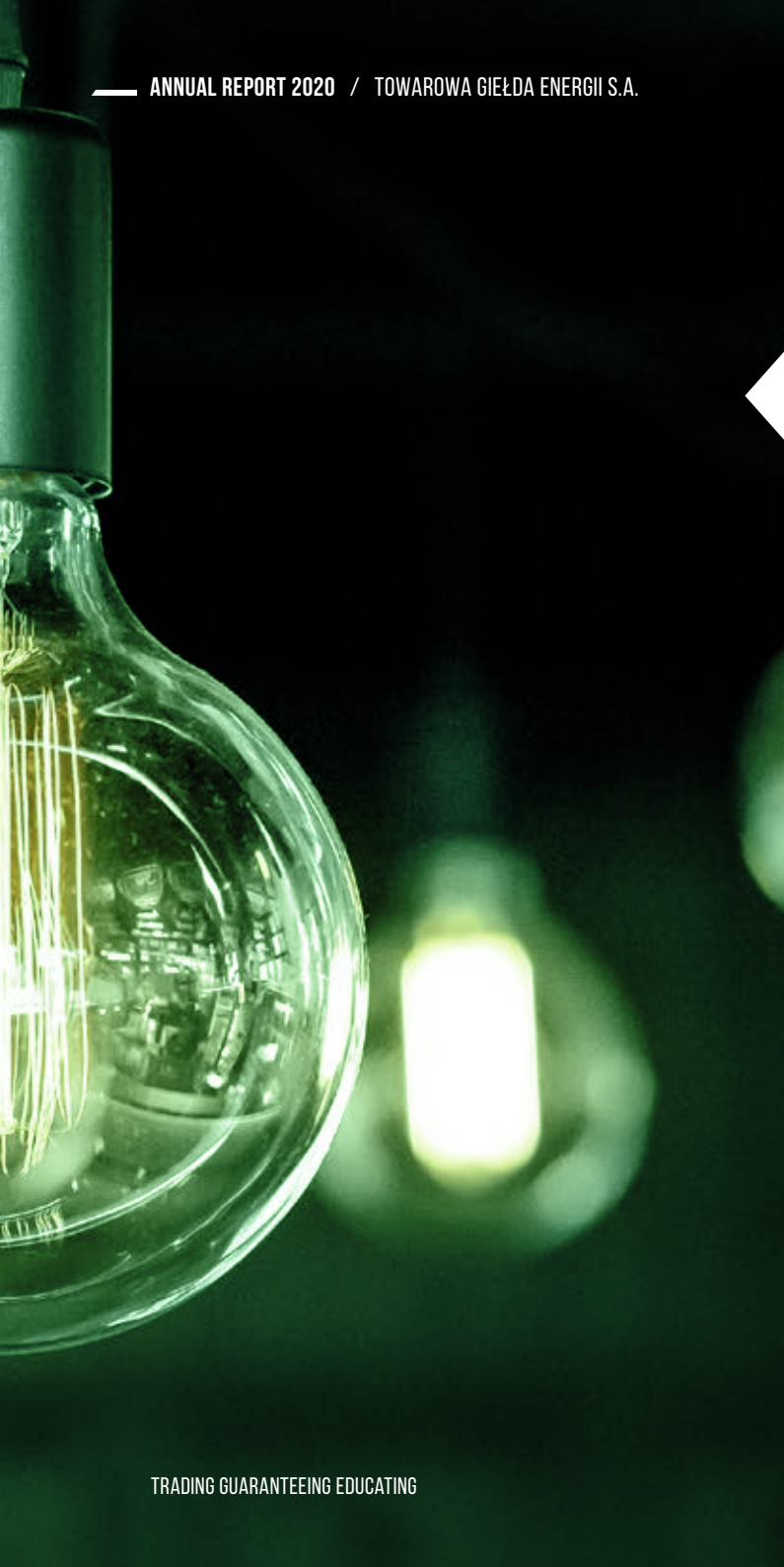
There is certainly a lot of work ahead of us. Poland's Energy Policy until 2040 approved by the government, the anticipated regulations related to the Clean Energy package and the European Green Deal will set the directions for the transformation of energy markets in Poland and the entire EU. The next 20 years are a time of diverse changes, the directions of which are already known, but which, due to the dynamics of the environment and innovations, bring about a lot of uncertainty. It is the constant volatility and the possibility of shaping the market reality that makes our daily work so interesting.

Thank you for being with us and enjoy reading the report.



Piotr Zawistowski

President of the Board of Towarowa Giełda Energii S.A.



TGE VISION AND MISSION STATEMENT

TGE VISION AND MISSION STATEMENT

The first transaction on the Polish Power Exchange took place twenty years ago. We have come a long way, sharing the joy of our successes and ideas about how to face the challenges as a team.

All our activities are based on a clearly defined vision and mission of the company. Being an inseparable element of the energy market in Poland, TGE ensures safe access to energy products at prices set by the market, described with transparent rules and clear procedures.

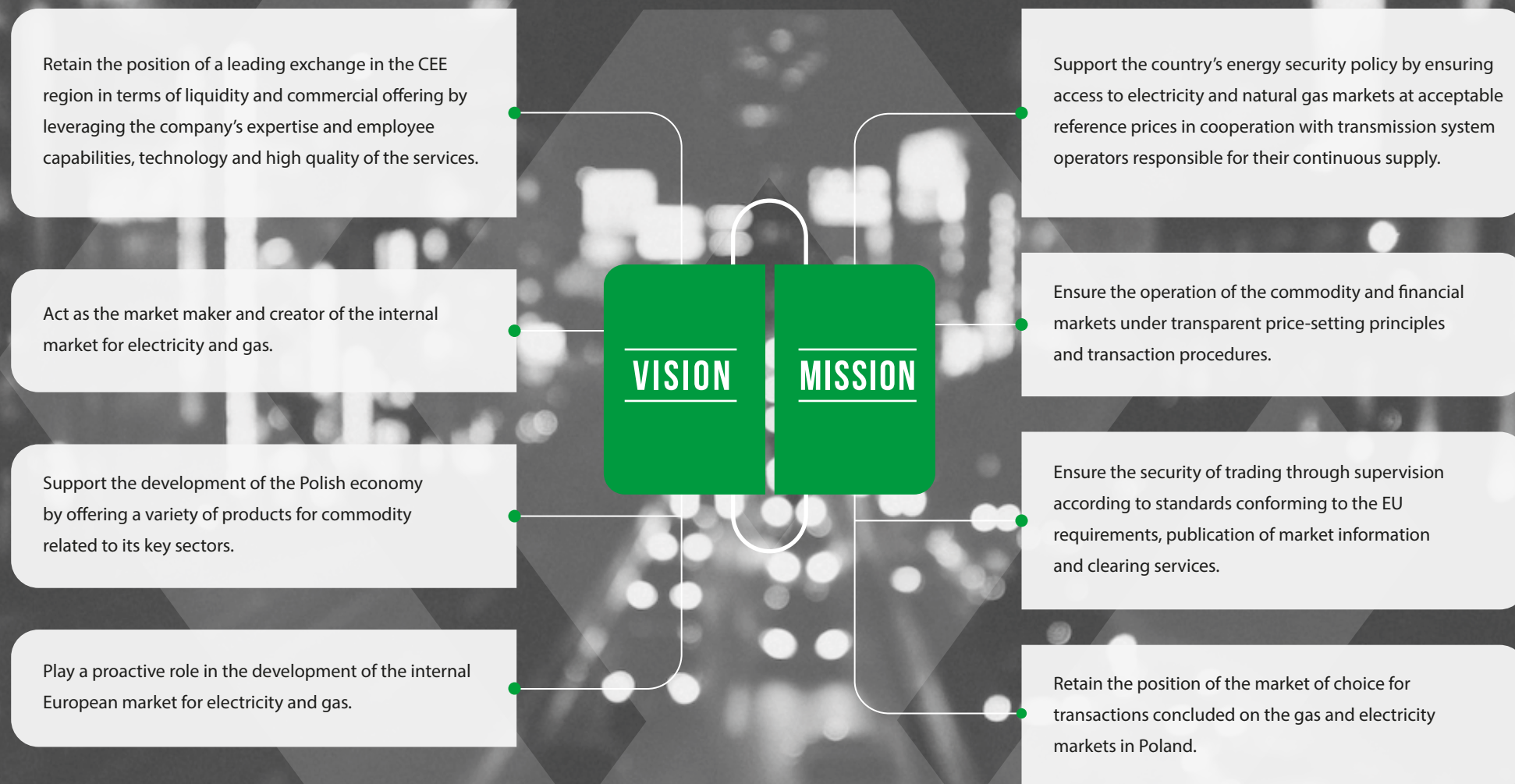
TGE intends to continue efforts in order to maintain the position it has developed over two decades – the leading energy exchange in Central and Eastern Europe. Transparent energy markets combined with an extensive offer make it possible to create a reference price for energy products.

Today, TGE is an institution whose activities contribute to economic growth on equal terms. Another area of TGE's operations includes promoting a competitive model and actively participating in the building of the internal market in Europe.

Striving to achieve the set goals and basing on our values, we will implement the tasks of a leading exchange in the region for the benefit of our members and the national economy.



TGE VISION AND MISSION STATEMENT





2020 KEY EVENTS

2020 KEY EVENTS

Two decades of TGE's activity are filled with hundreds of projects aimed at providing market participants with a modern and liquid trading platform. This is another initiative to increase liquidity in the natural gas market that began with 2020.

The "Maker-Taker" program, already in force in 2019 and continued in 2020 on the electricity market, was also launched as a pilot program on the natural gas markets. The system consists of reducing transaction fees, by a maximum of 75%, for initiators of own-account transactions for Commodity Forward Instruments Market with physical delivery for electricity and gas. A reduction in transaction fees was supplemented with a corresponding reduction in fees for registering positions at the Commodity Clearing House (IRGiT) (clearing fees).

In March, a decision was made to appoint the Market Council, which functions as a consultative and advisory body to the Management Board of TGE. The Council is composed of representatives of the exchange, brokerage houses, natural gas transmission operator, as well as chambers and associations related to the energy and heating industry. The Council was established to work out such solutions with market participants, which will contribute to the enhancement of liquidity and the development of the stock market.

In April, the gas product portfolio of the TGE Intraday Market was supplemented with a new instrument for high-methane natural gas from group E, transmitted in the area of the Transit Gas Pipeline System (SGT).

At the beginning of May, the Polish Power Exchange started trading on the Organized Trading Platform (OTF). The implementation of OTF is related to the adjustment of trading on the exchange to the legal requirements related to the implementation of the MiFID 2 Directive. The change applies to the derivatives markets for electricity, natural gas and property rights, which became financial instruments as of 4 May 2020. The implementation method and the choice of the OTF model were consulted with market participants in 2017-2018.

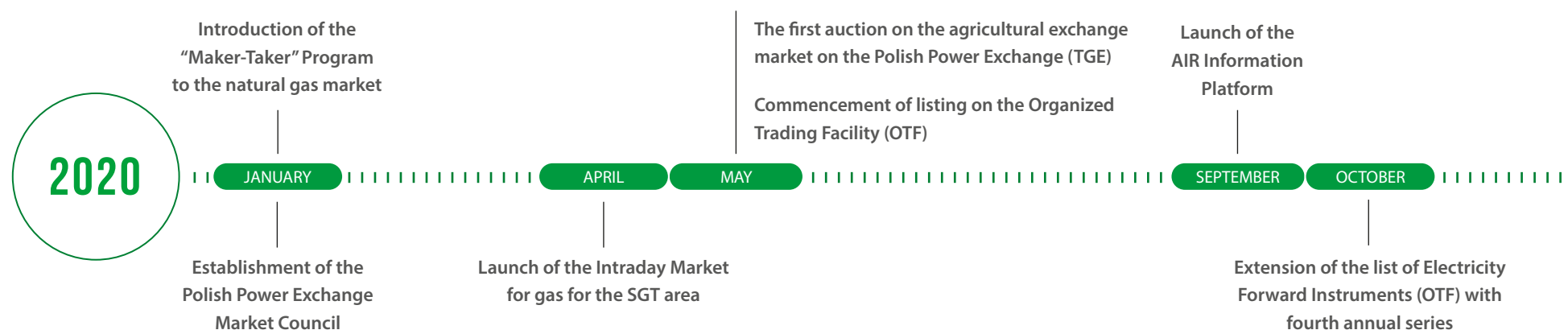
Also, in May, the first auction and the first fixing transaction on the newly opened agricultural market were held at TGE. The pilot project of the Agricultural Exchange Market was launched at the beginning of March by entities from the GPW (Warsaw Stock Exchange) Capital Group (TGE, GPW, IRGiT) and was to last until August. The authorities of the companies decided to continue the project and develop this area, which is new for the exchange. In order to promote the development of trading in agricultural goods, a temporary exemption from fees on this market was introduced until the end of September 2020.

2020 KEY EVENTS

In October TGE launched a new Information Platform called AIR - Analyses, Information, Reports. The AIR platform provides convenient access to comprehensive reports and professional analyses containing processed market data, facilitating their management.

In November, TGE made optimization changes on the Electricity Forwards Market. Some instruments were abandoned and the listing period for annual instruments was extended from three to four years. The changes resulted from consultations within the Market Council.

Last year the exchange also continued activities aimed at further tightening the cooperation with industry entities and extending the product offer. As a result of the demand for new exchange mechanisms for the RES sector, in January 2021, cooperation with the Polish Wind Energy Association (PWEA) was established with the aim of developing dedicated solutions for trading in energy produced from renewable energy sources. Soon after cooperation was established with the PGNiG group, with the aim of harnessing the experience and potential of both entities to build a biomethane market. TGE also started working within task groups coordinated by the Government Plenipotentiary for RES in order to develop a sectoral agreement for this new market area.





HISTORY OF THE POLISH POWER EXCHANGE

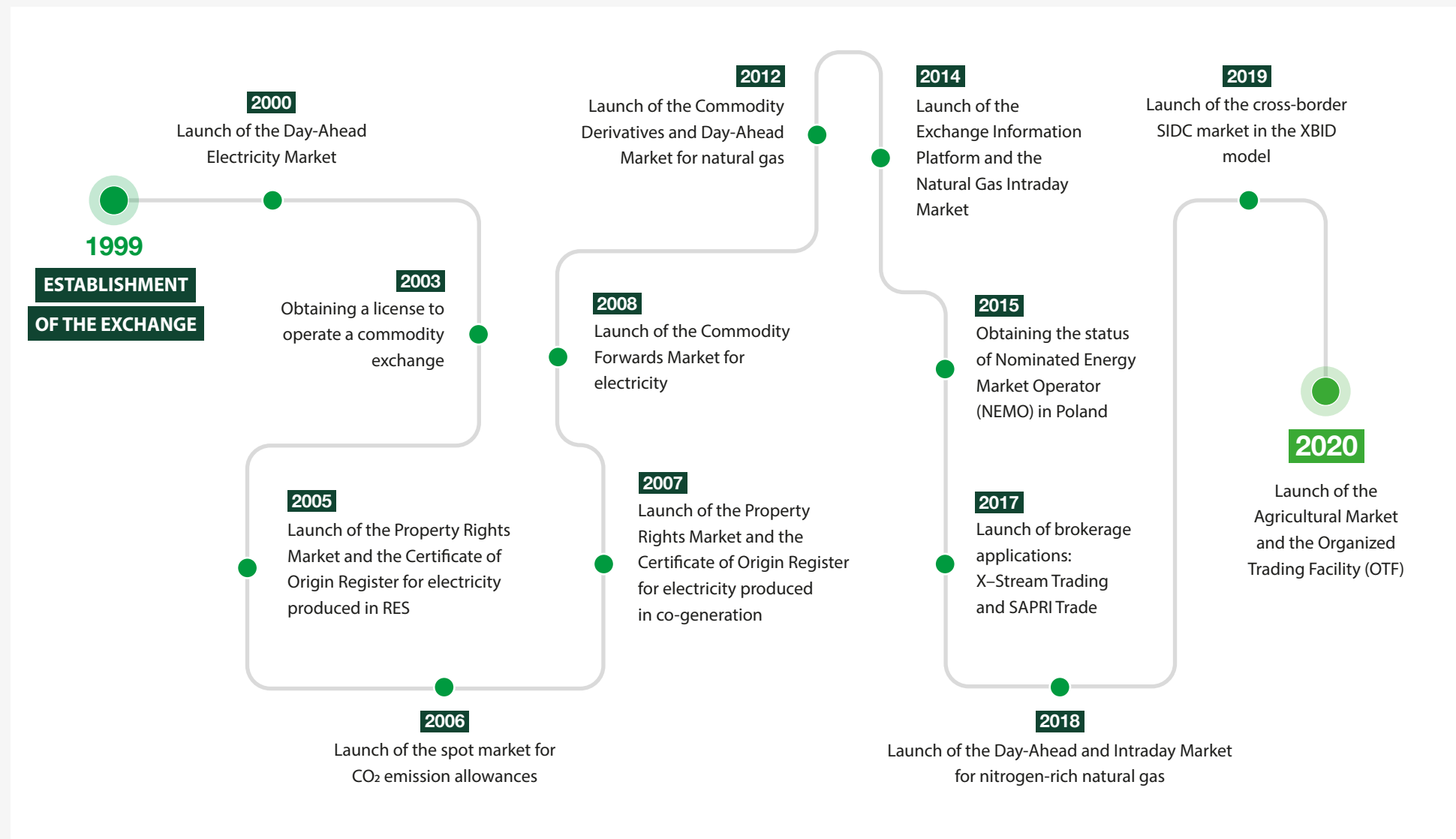
HISTORY OF THE POLISH POWER EXCHANGE

The Polish Power Exchange was established in 1999. The first market launched on the exchange was the Day-Ahead Market for electricity, the first transaction taking place in June 2000.

Three years later, the exchange obtained a license to operate a commodity exchange market. The period between 2005 and 2007 was the period of implementation of the markets related to property rights and CO₂ emission allowances. In 2008 TGE initiated the Electricity Commodity Forward Instruments Market, and in 2012, TGE launched the first quotations of natural gas, both on the Commodity Forward Instruments Market and on the Day-Ahead Market for gas. The spot market for natural gas was then extended in 2014 to include the intraday market. A similar event took place on the electricity market as early as in 2010, when TGE launched international trading on the day-ahead market (Market Coupling) for the connection with Sweden. In 2015 the international trading in electricity was extended to include a connection with Lithuania. The transparency of the electricity market was increased thanks to the Exchange Information Platform, launched in 2014, where information about the power system and carbon indices is published. A year later, TGE became the Nominated Energy Market Operator in Poland, and has remained so ever since. The current term ends in 2023. In 2019, the cross-border SIDC market was launched based on the XBiD model, and in 2020 the key events included the launch of the agricultural market and Organized Trading Facility.

A number of important events took place on the Polish and European energy market in 2020. The adoption of the Poland's Energy Policy until 2040 and the initiatives under the European Green Deal or the Clean Energy Package set the directions for transformation in which TGE will actively participate.

HISTORY OF THE POLISH POWER EXCHANGE





TGE CAPITAL GROUP AND TGE MANAGEMENT

TGE CAPITAL GROUP

The Polish Power Exchange is part of the Warsaw Stock Exchange Capital Group. The platform for trading in energy instruments, property rights, and since last year, also agricultural products, accounted for 35.7% of the group's revenues in 2020.

TGE fits well with the GPW's strategy, which assumed the launch of an Organized Trading Facility, an agricultural market, and a secondary raw materials trading platform. Two goals have already been achieved. According to the presented vision of the Agricultural Exchange Market, the basis for its operation is the Polish Power Exchange (TGE) and the Commodity Clearing House (IRGiT). IRGiT is one of the subsidiaries of the Polish Power Exchange group.

The other one is InfoEngine S.A. In 2010 the company was bought by the Warsaw Stock Exchange, within whose structures it provided operator services and ran the energy market as part of the internet electricity trading platform (POEE). As a result of the consolidation of the commodity market and legislative changes with regard to energy trading, the company focused its business line on the provision of operator services, i.e. Trade Operator and Balancing Entity services.



Trading in energy commodities (natural gas, electricity, property rights) and CO ₂ emission allowances	Maintaining Certificate of Origin and Guarantee of Origin Registers	Agricultural Market	Communication activities
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Transaction settlement and accounting	Risk management	Guaranteed transaction safety	The largest operator of energy services in Poland	Entity responsible for trade balancing	Photovoltaic projects
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TGE MANAGEMENT

Piotr Zawistowski

President of the Management Board

Piotr Zawistowski has over 20 years of experience in the energy sector. From 2008 to 2017 he was associated with the TAURON Group, where between May 2014 and December 2015 he was President of the Management Board of TAURON Obsługa Klienta Sp. z o.o. From December 2015 to March 2017 he was Vice-President of the Management Board of TAURON Polska Energia S.A. in charge of Customer Services and Sales, responsible for the development of the TAURON Group's offering in the electricity and natural gas segment. In October 2017, he became the President of the Management Board of TGE.

In 2016-2017, he was Chairman of the Board of the Association of Energy Trading (TOE), a member of the Board of the Polish Electricity Association (PKEE) and sat on the Supervisory Board of TGE. He is the Chairman of the Supervisory Board of the Warsaw Commodity Clearing House (IRGiT), and since January 2020 he has been a member of the Board of Europex (Association of European Energy Exchanges).

Piotr Zawistowski graduated from the Wrocław University of Economics and Business, where he obtained his master's degree in Business Management in 2002. In 2007 he completed postgraduate studies in Sales Management at the WSB University in Wrocław.

TGE MANAGEMENT

Piotr Listwoń

*Vice President of the Management Board
for Operational Activities*

Piotr Listwoń has extensive experience in managing trading and clearing operations on commodity forward markets, the financial instruments market as well as international transactions carried out as part of the market coupling of the European electricity markets. He has been associated with the TGE Group since 2008, initially involved in efforts aimed at launching the operations the Warsaw Commodity Clearing House (IRGiT) and led the implementation of an advanced payment system in IRGiT. In the years 2013-2018 he was Director of Clearing and Settlement Department and Director of International Cooperation Development in IRGiT.

Since April 2018, he has served as Vice President of the Management Board of TGE, where he is responsible for the operational activity of the Exchange and product development. He supervised, among other things, the launch of the European Intraday Market (XBID) 24/7/365 and the launch of forwards trading on the OTF. Since April 2018, he has served as member of the Supervisory Board of the GPW Foundation and since December 2020 as Chairman of the Supervisory Board of InfoEngine, a subsidiary of the TGE Group. In January 2021, he joined the Management Board of the Association of Power Exchanges (APEx).

Piotr Listwoń graduated from the Faculty of Strategic Management of the Polish Open University (POU/Oxford Brookes University) where he also obtained an MBA degree.

TGE MANAGEMENT

Adam Młodkowski

*Vice President of the Management Board
for Financial Activities*

For many years of his professional career Adam Młodkowski was associated with the banking sector, including the Pekao S.A. Group and PKO Bank Polski S.A. In the years 2003-2009 he was Member of the Management Board, and then Vice President and President of the Management Board of Bankowy Fundusz Leasingowy S.A., which, under his leadership, became one of the fastest growing and largest leasing companies in Poland.

In 2016, he joined the Polish Armaments Group (PGZ S.A.) as Director of the Administrative Office and from 2018 he served as an advisor to the President of the Management Board of SGB Bank, responsible for the branch network reorganisation project, and then Managing Director of the Sales Division in the pension fund management company Pocztylion-Arka PTE S.A. He was an independent Member of the Supervisory Board of KDPW CCP between 2020 and 2021. Since April 2021, he has been the Chairman of the Supervisory Board of Warsaw Commodity Clearing House.

Adam Młodkowski graduated from the Faculty of Economics and Sociology at the University of Łódź with a degree in Finance and Banking. He also completed the Advanced Management Program at IESE Business School in Barcelona, Study Programme for Financial Directors, organized by the Institute of Business Development (Instytut Rozwoju Biznesu) as well as a broker training course and a course for candidates for members of supervisory boards of companies with State Treasury shareholding.



LEGAL REGULATIONS

A NEW ENERGY POLICY
IN THE ERA OF ENERGY
TRANSFORMATION

LEGAL REGULATIONS

2020 and the beginning of 2021 are the times of regulatory changes that will shape the Polish and European energy markets in the coming years.

Following numerous consultations and changes, Poland's Energy Policy until 2040 was adopted. CO₂ emission reduction targets have been increased in the European Union, directives and regulations that are part of the Clean Energy Package for all Europeans are being implemented. The European Commission has presented the area-based strategies of the European Green Deal. The energy transformation has received new ambitious directions, and the Polish Power Exchange aims to continue cooperation with industry entities in the energy and fuel sector and its members in this ever changing legal environment.

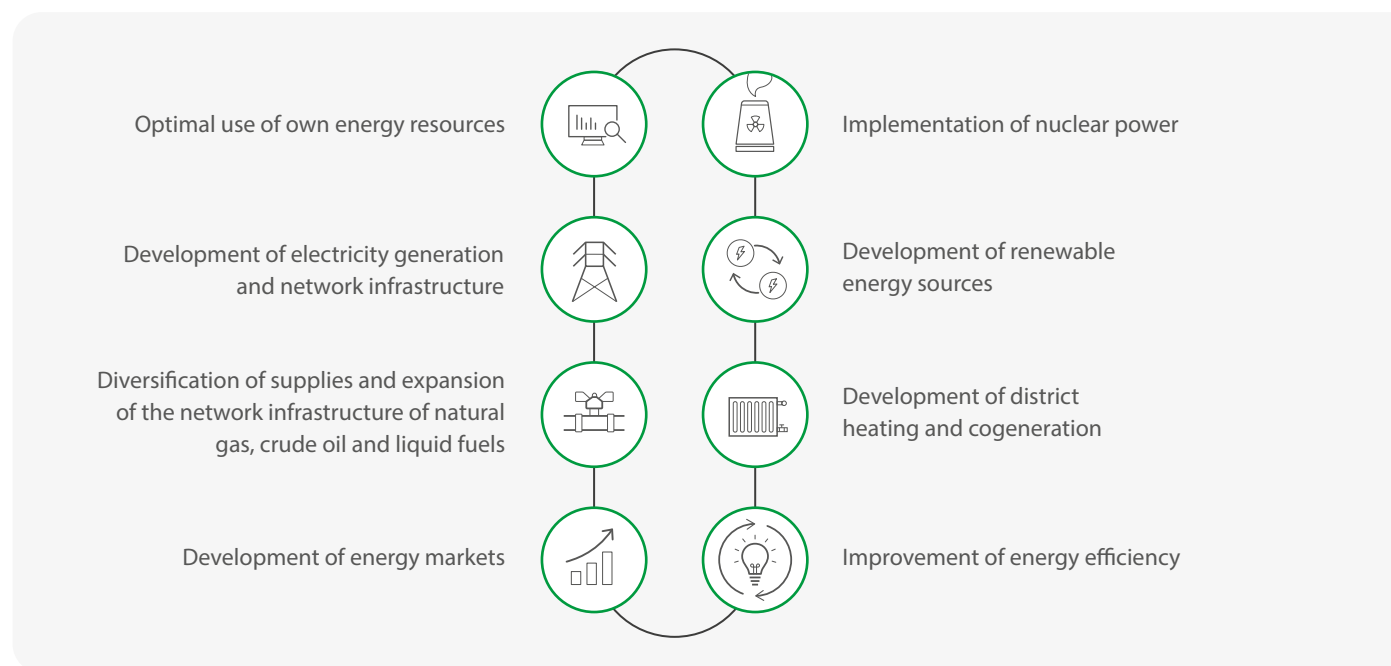


POLAND'S ENERGY POLICY UNTIL 2040

The Council of Ministers approved Poland's Energy Policy until 2040 on 2 February 2021.

The purpose of the document is to set the directions of energy transformation in Poland, which will be carried out over the next two decades. Energy changes will be based on three pillars set out in the document: just transition, zero-emission energy system and good air quality.

The guidelines of the energy policy will be introduced through the implementation of defined detailed objectives:



In addition to the outlined directions of activities, the document includes numerical goals that are to be achieved through the implementation of the objectives. It is indicated that the share of RES will be at least 23% in 2030 with a simultaneous decrease in the share of energy generated from coal fuels – no more than 56% of coal in electricity production. Natural gas will be a bridge fuel in the energy transition.

The Polish Power Exchange has been participating in energy markets for 20 years. The Energy Policy of 2009 was also implemented on the trading floor of the energy exchange until 2030 and with the use of instruments that TGE introduced to the market. The new course of action indicates that, similarly to the previous decade, TGE will also play a role in the implementation of energy goals in the next two years.

CLEAN ENERGY PACKAGE

Polish energy regulations set national transformation goals that are consistent with the EU directions of changes and take into account the national specificity. Negotiations on the Clean Energy for All Europeans Package were completed in 2018, and the last documents were published in 2019.

The package consists of eight legislative acts – directives and regulations. It is already the fourth energy package of the European Union. The new transformation targets include a reduction in greenhouse gas emissions by 40% compared to 1990, a 32% share of renewable energy in the EU's energy mix, and improvement in energy efficiency by 32.5% compared to the 2007 baseline scenario. The package provides for the possibility of revising the targets in 2023.

The legal acts concern in particular the energy efficiency of buildings, increasing the share of renewable energy, the objective of improving energy efficiency, creating 10-year energy and climate plans in the Member States. Conditions designed to increase the scale of international electricity trading have also been outlined. In addition, the fourth package includes regulations in the area of protection and activation of end-users on the electricity market, as well as provisions defining rules to be applied in the event of an energy crisis.

In September 2020 the European Commission proposed to increase the greenhouse gas emission reduction target to 55%, a proposal adopted by the European Council in December.

EUROPEAN GREEN DEAL

In December 2019 the European Commission presented the European Green Deal strategy, which aims to achieve climate neutrality in Europe by 2050.

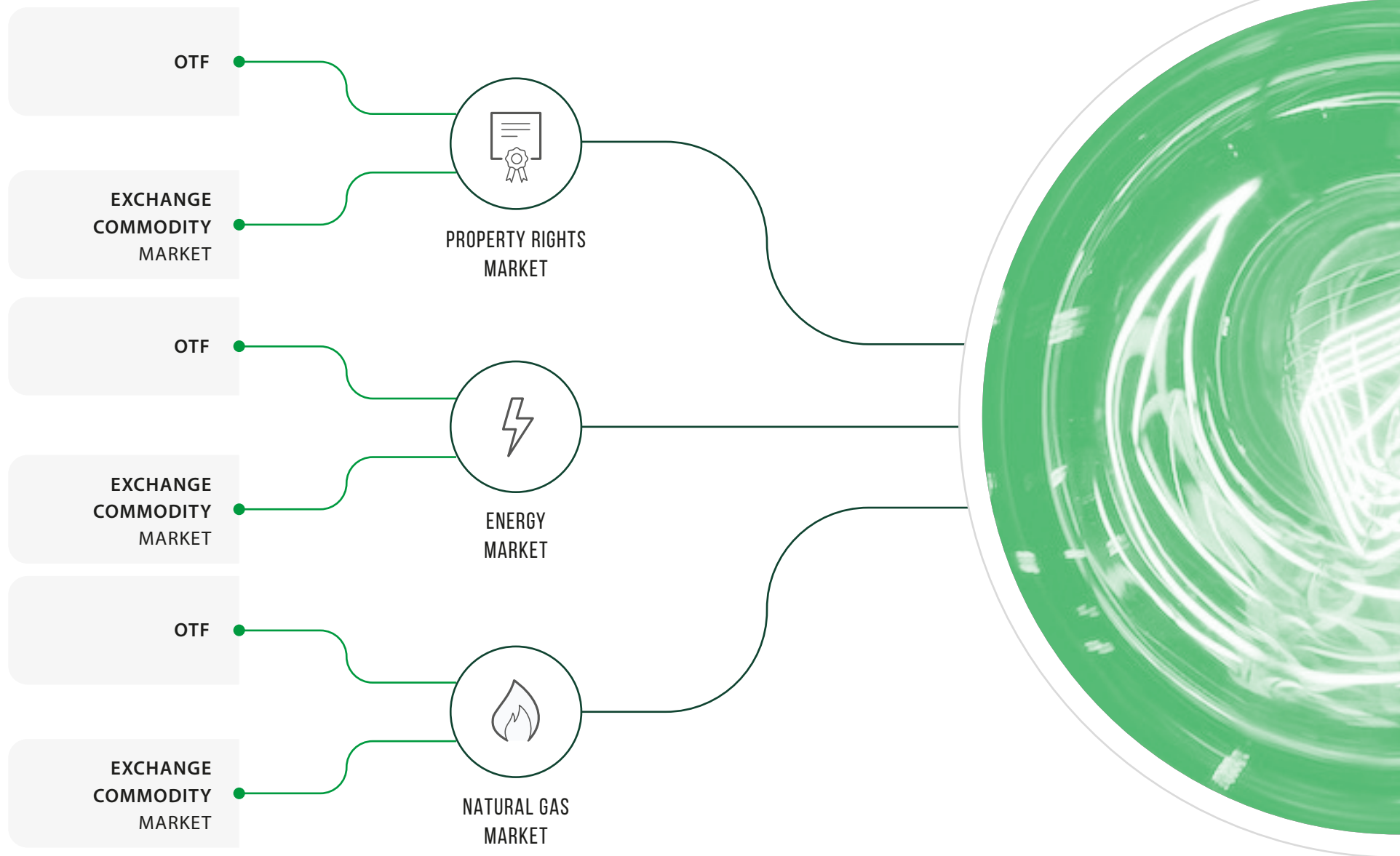
Achieving the target is to be accompanied by stimulation of the economy, improvement of health and quality of life, and care for the environment. Consultations, talks and presentations on individual aspects of the Green Deal took place in 2020. A new industrial strategy and circular economy action plan were unveiled in March. In May the Farm to Fork Strategy was announced, with the emphasis on sound and sustainable food choices. Moreover, the EU has adopted the biodiversity strategy, sector integration strategy and hydrogen strategy. The implementation of the European Green Deal will contribute not only to the energy transition, but also to the economic transformation in a broader sense.



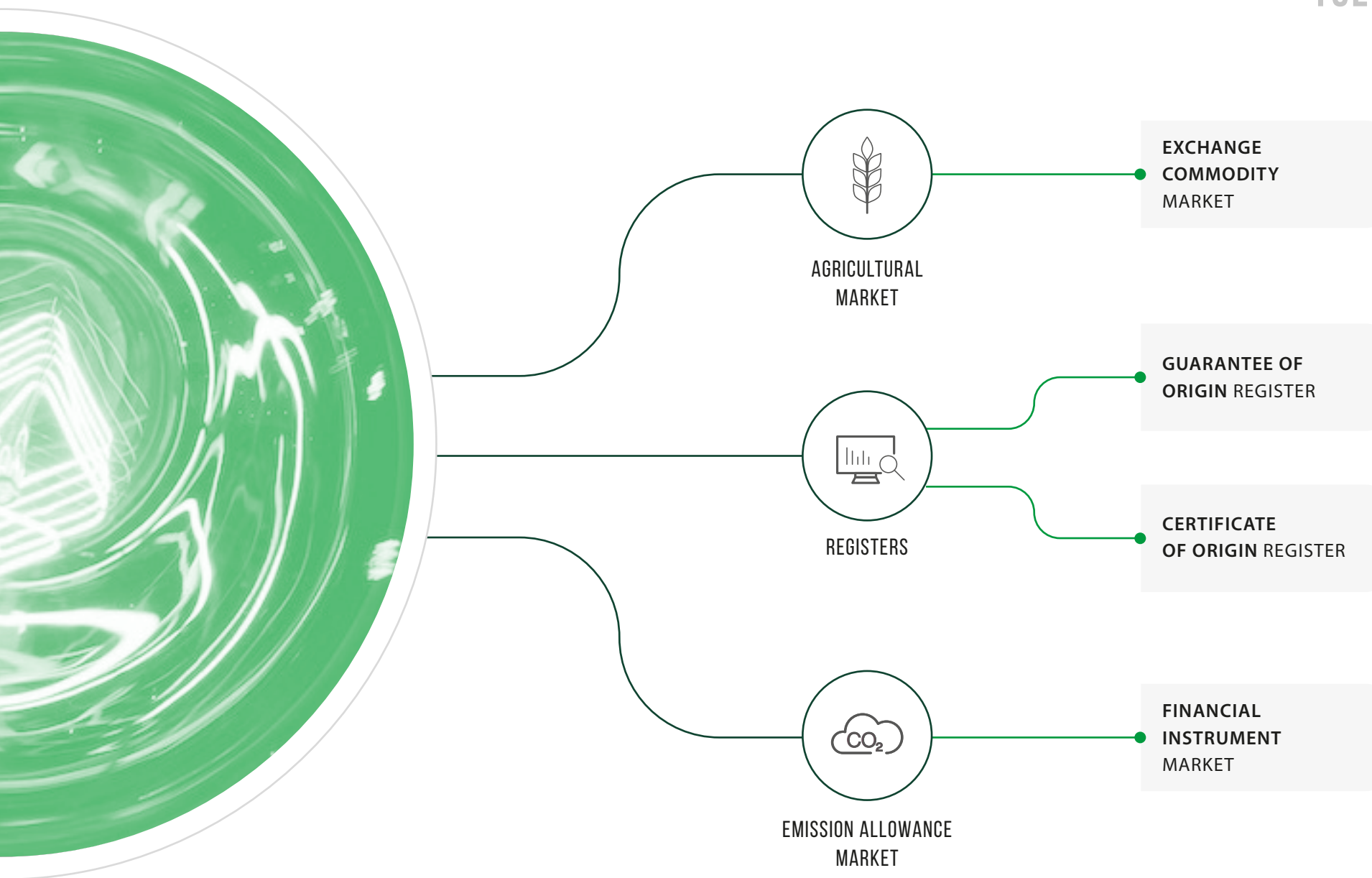


TGE'S OFFER

TGE'S OFFER



TGE'S OFFER



ELECTRICITY

THE RECORD TRADING VOLUME
FOR THE 20TH ANNIVERSARY
OF TGE

ELECTRICITY – THE RECORD TRADING VOLUME FOR THE 20TH ANNIVERSARY OF TGE

Gross electricity consumption (including consumption for own purposes of power plants) in Poland in 2020 amounted to 165.5 TWh, 3.9 TWh lower than in the previous year.

The volume of energy consumed makes Poland the largest electricity consumer in the Central and Eastern Europe region and one of the largest consumers in the European Union. The development of the cross-border electricity infrastructure makes it now possible to connect the national system with the neighbouring countries such as Czech Republic, Lithuania, Germany, Slovakia and Ukraine as well as with Sweden with the use of the SwePol Link submarine cable. 20 years after the first transaction on the Polish Power Exchange, it is a natural place of trade on the wholesale market, and the trading volume recorded in 2020 once again significantly exceeded domestic consumption – by over 50%.

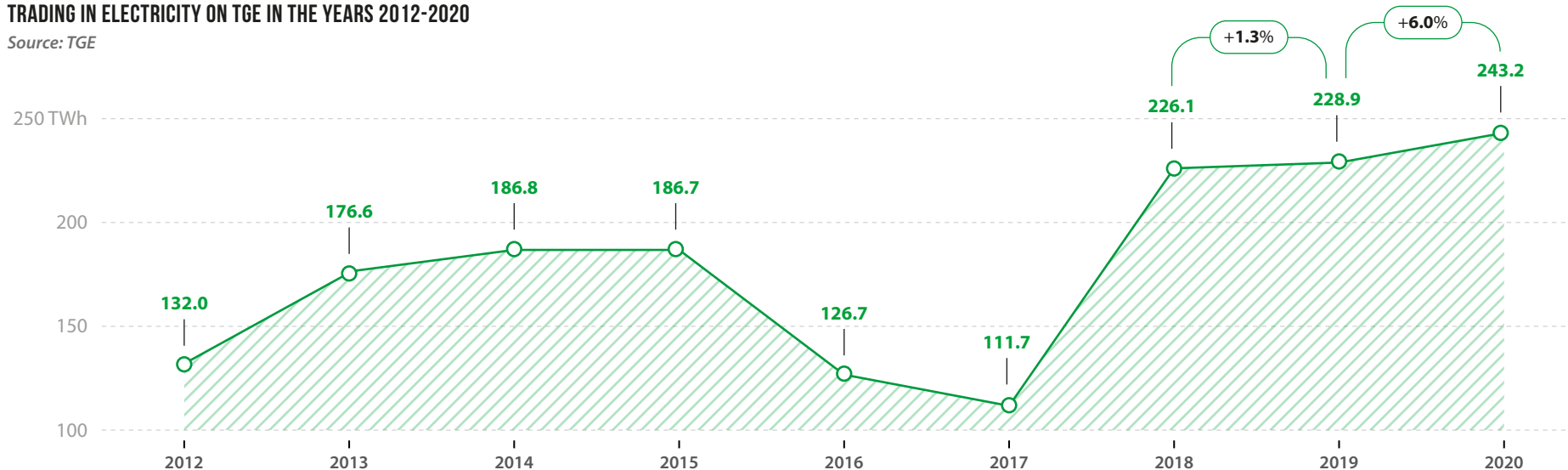
In 2020, the volume of electricity traded on TGE amounted to 243.2 TWh and was the highest in the history of trading. Electricity trading on TGE in Poland accounted for almost 150% of gross domestic electricity consumption and over 150% of net consumption, making the domestic market one of the most liquid in the region and in the European Union.

This is the third successive year where the record volume of trading has been experienced, with regard to both the total volume of electricity as well as the entire spot market and the derivatives market separately. In total, they were higher by 6.2% compared to 2019. Sustaining the upward trend is a result of the trust of the exchange members, as well as the actions taken by the exchange team with the aim to build incentives to increase trading. The spot market (Day-Ahead Market/Intraday Market) accounted for 14.3% of the volume in 2020. The volume of trading at the level of 34.8 TWh reached its all-time highest level and was higher by 2.8% than the year before. The trading volume of 2.1 TWh on the Intraday Market was more than twelve times the volume of 2019, which is a continuation of the growth of this market described in last year's report after the launch of trading based on the XBID model. Short-term markets increases are in line with the European trend. On the German EEX, the spot markets grew by 4% last year (1% on the DAM and 21% on the IDM). The TGE derivatives market also recorded the best result in the history of trading. The volume of 208.3 TWh was 6.8% higher than in 2019.

In 2020 the highest volume of trading was recorded in the first quarter, which also recorded the largest increases compared to 2019. In the period from January to July, the volume of trading in each month was higher than the year before. In the following months - until December - the volume was lower than the year before.

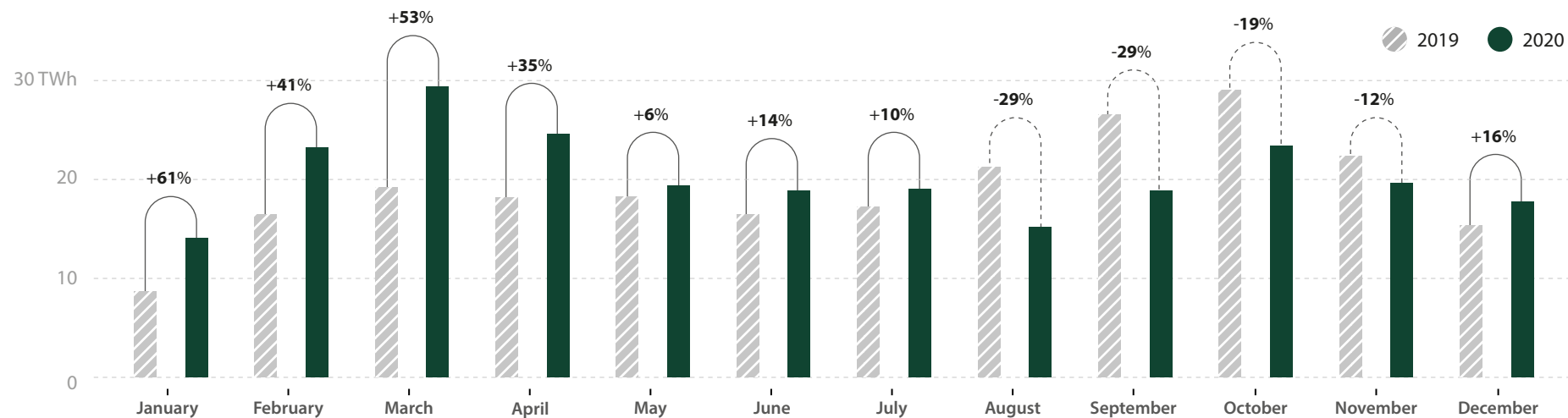
▶ TRADING IN ELECTRICITY ON TGE IN THE YEARS 2012-2020

Source: TGE



▶ MONTHLY TRADING IN ELECTRICITY ON TGE IN THE YEARS 2019-2020

Source: TGE



ELECTRICITY PRICES IN 2020

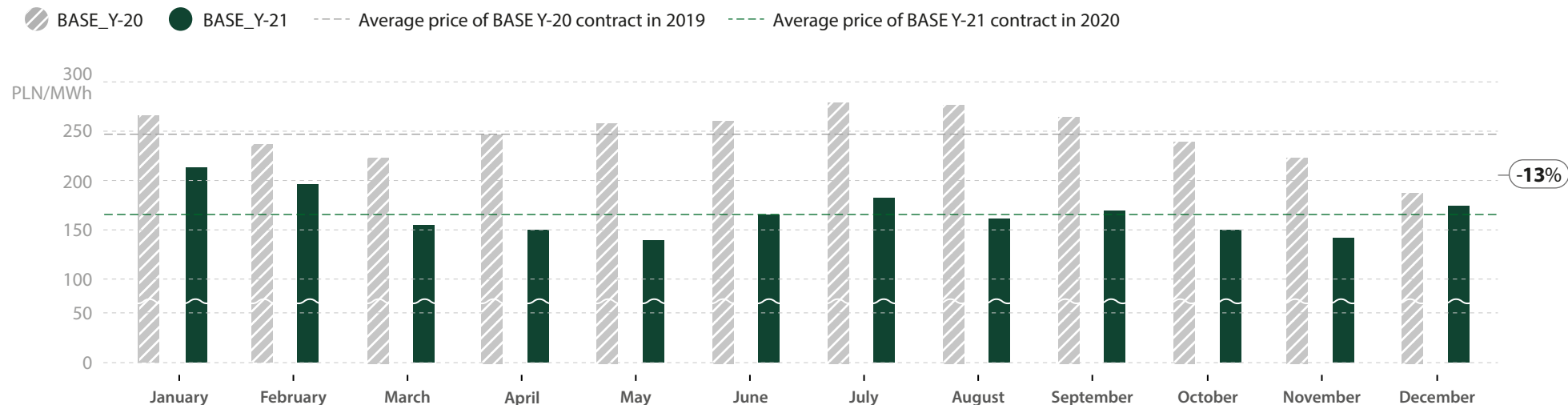
In 2020 decreases in average electricity prices were recorded, both on the spot market and on the derivatives market.

In the first case, the average price of the base contract on the Day-Ahead Market decreased by 8.5% compared to 2019 and amounted to PLN 210.11 / MWh. On the derivatives market, the decline for the most important contract was 13.0%, and this contract - the base contract for the next year, BASE_Y-21 – averaged PLN 231.87/MWh.

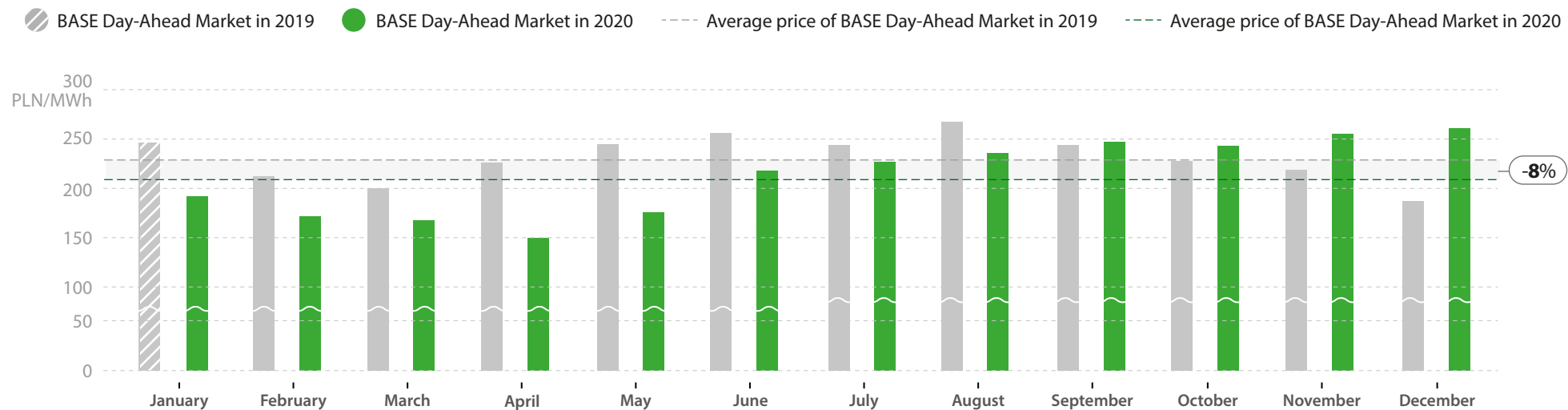
The volume-weighted average monthly prices on the Day-Ahead Market ranged between PLN 150.15/MWh in April and PLN 258.00/MWh in December. Average prices increased in the following quarters of the year. In the first quarter, the average price for energy on this market was PLN 174.79/MWh, in the second quarter – PLN 180.19/MWh, in the third quarter - PLN 233.08/MWh, and in the last quarter – PLN 250.24/MWh.

The average prices of the base contract for 2021 on the derivatives market were between PLN 221.69/MWh in May and PLN 252.42/MWh in January. In each month of 2020 the price of the base contract was lower than in the corresponding month of the previous year. Unlike the Day-Ahead Market, prices in the first quarter were at the highest level and amounted to PLN 239.22/MWh. In the second quarter the average price was the lowest and amounted to PLN 226.45/MWh. In the third quarter there was an increase to the level of PLN 234.92/MWh, and in the fourth quarter the price fell again, this time to the level of PLN 226.74/MWh.

► AVERAGE MONTHLY ELECTRICITY PRICES ON THE SPOT MARKET IN THE YEARS 2019-2020



► AVERAGE MONTHLY ELECTRICITY PRICES ON THE DERIVATIVES MARKET IN THE YEARS 2019-2020



NATURAL GAS

THE EVER HIGHEST
VOLUME OF TRADING

NATURAL GAS — THE EVER HIGHEST VOLUME OF TRADING

Natural gas consumption in Poland in 2020 amounted to 220 TWh. As with electricity, Poland is one of the largest natural gas consumers in the European Union.

Natural gas comes to Poland from domestic production and through the gas pipeline infrastructure connecting the country with partners in the west, south and east, as well as with the use of the LNG import terminal in Świnoujście. The infrastructure investments undertaken at present are designed for even greater diversification of the directions for obtaining this fuel. The operation of the energy exchange in Poland makes it possible to shape a reference price that takes into account a wide range of directions for obtaining natural gas.

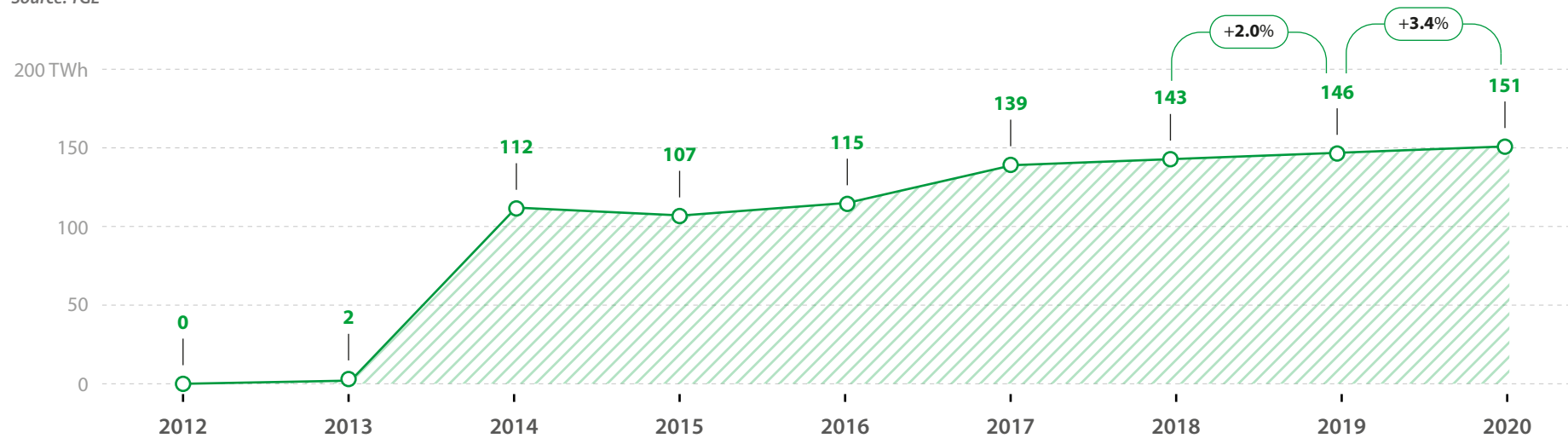
In 2020 the volume of natural gas on the Polish Power Exchange accounted for almost 69% of domestic blue fuel consumption.

The total volume of trading in natural gas-related products amounted to 151.1 TWh last year and was the highest in the history of quotations and higher by 3.4% compared to 2019. At the same time, gas markets operated by the largest European energy exchange EEX decreased by 5% (-3% in the spot markets and -11% in the derivatives markets). In Poland the natural gas market on TGE was characterized by annual increases in the period 2012-2020, with the exception of 2015. The increases in 2020 were observed on each of the markets. Starting with the Intraday Market for natural gas, which recorded an increase in the volume by 3.3% YOY, through the Day-Ahead Market for gas, where the increase was as much as 17.6% (the spot market increased by 14% in total), and ending with the derivatives market, which increased by 1.5% in 2020.

The highest volume of trading in 2020 was recorded in the last quarter. It amounted to 40.2 TWh. A slightly lower value was recorded in the first quarter (40 TWh). In the second and third quarters, the volume was in the range of 35-36 TWh.

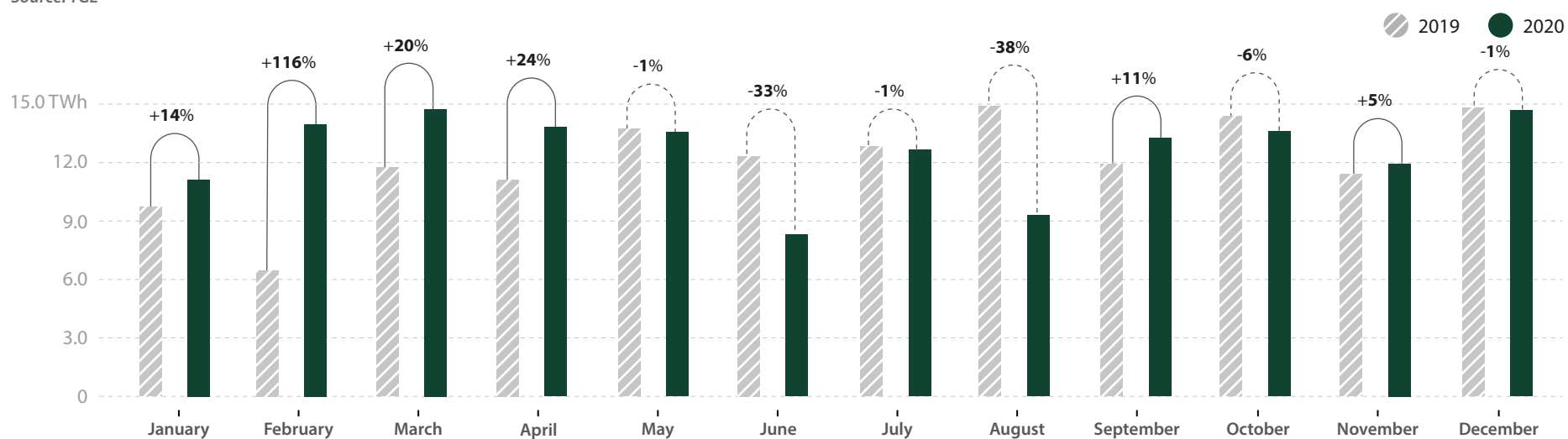
▶ TRADING IN NATURAL GAS ON TGE IN THE YEARS 2012-2020

Source: TGE



▶ MONTHLY TRADING IN NATURAL GAS ON TGE IN THE YEARS 2019-2020

Source: TGE



NATURAL GAS PRICES IN 2020

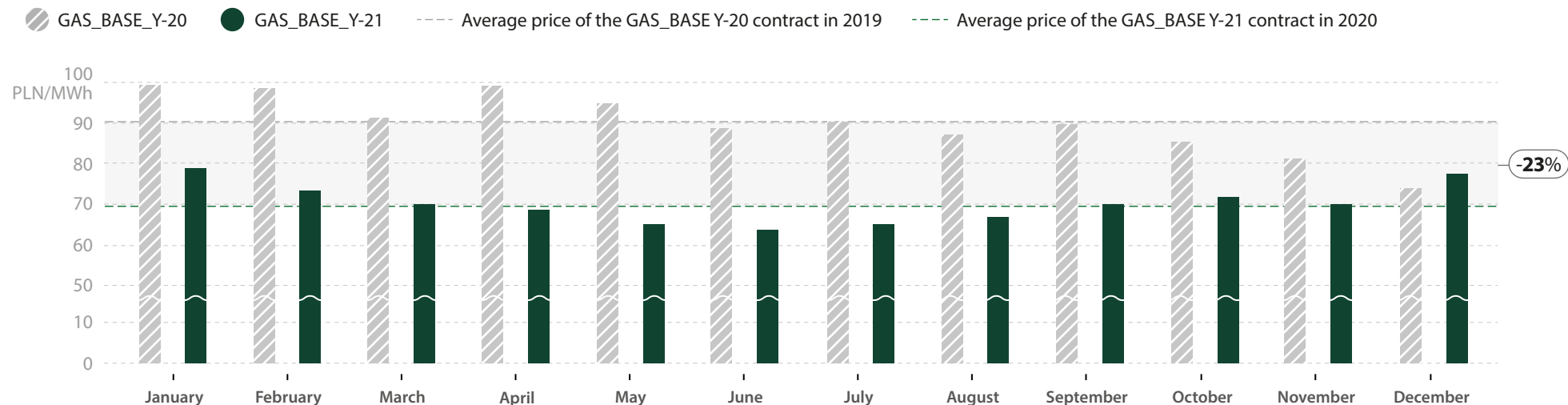
2020 was a period of record low gas prices on TGE. The average annual price of natural gas was significantly lower than in 2019, both on the spot and derivatives markets.

On the Day-Ahead and Intraday Market, the average price decreased by 21.4% compared to 2019 and amounted to PLN 57.14/MWh. On the derivatives market the decline in the most important instrument was 23.1%. The price of the base contract for the coming year (GAS_BASE_Y-21) was on average at the level of PLN 69.15/MWh.

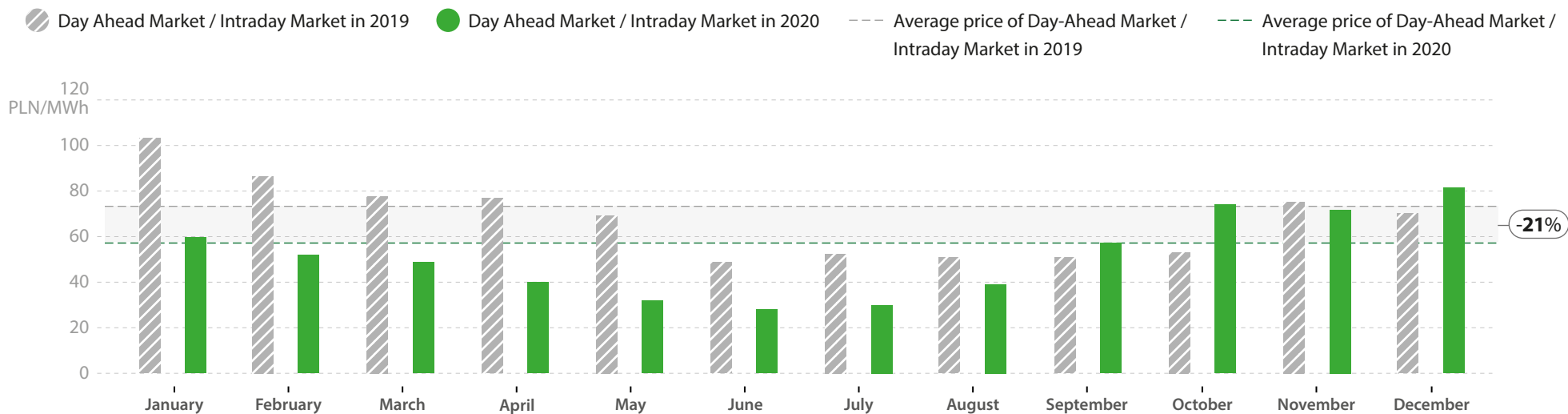
The volume-weighted average monthly prices on the Day-Ahead and Intraday Market ranged between PLN 27.95/MWh in June and PLN 81.34/MWh in December. Traditionally, the lowest prices on the spot market were recorded in the middle of the year, in the summer. Gas on the spot market was the cheapest in the second quarter (PLN 34.72/MWh) and in the third quarter (PLN 41.61/MWh). In the first quarter the average price was PLN 52.66/MWh, and in the fourth quarter it was PLN 76.38/MWh. The prices in 2020 were higher than the prices in 2019 only in September, October and December.

On the derivatives market the average prices of the GAS_BASE_Y-21 base contract were between PLN 63.67/MWh in June and PLN 78.32/MWh in January. In each month of 2020, except for December, the price of the base contract for the next year was lower than in the corresponding month of the previous year. As in the case of the Day-Ahead and Intraday Market for gas, the average price in the second quarter was the lowest and amounted to PLN 66.12/MWh. In the third quarter the average price was higher by PLN 0.93 and amounted to PLN 67.05/MWh. In the fourth quarter the contract cost an average PLN 73.23/MWh, and the highest average price was paid at the beginning of the year – in the first quarter it was on average PLN 73.23/MWh.

► AVERAGE MONTHLY NATURAL GAS PRICES ON THE SPOT MARKET IN THE YEARS 2019-2020



► AVERAGE MONTHLY NATURAL GAS PRICES ON THE DERIVATIVES MARKET IN THE YEARS 2019-2020





RENEWABLE ENERGY SOURCES, ENERGY EFFICIENCY

RENEWABLE ENERGY SOURCES, ENERGY EFFICIENCY

Poland's newly adopted Energy Policy determines a clear direction for development – renewable energy sources. The development of offshore wind energy to a level of 5.9 GW in 2030 and approx. 11 GW in 2040, an increase in PV capacity to 5-7 GW in 2030 and approx. 10-16 GW in 2040, and a reduction in the share of coal are to lead to an increase in the share of renewable energy in the power sector to a level of at least 32% as early as in 2030.

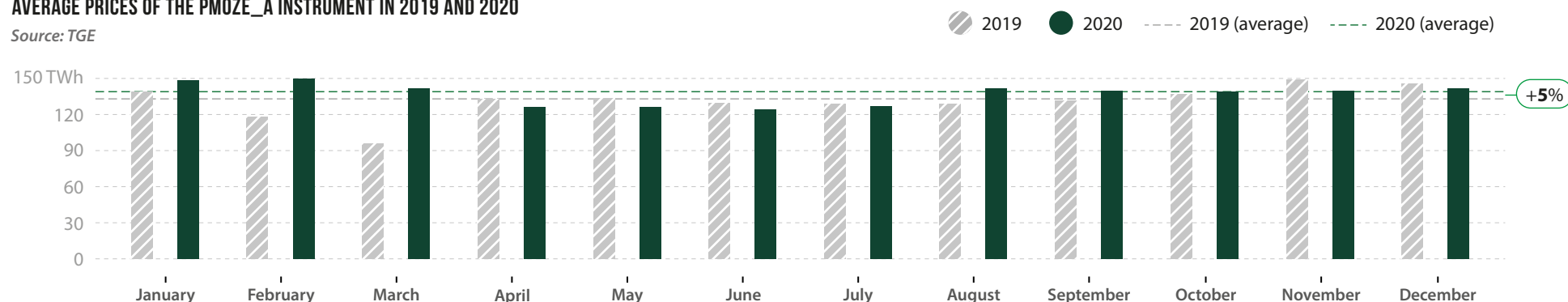
In addition to increasing the share of renewable energy, the energy efficiency target is also important from the point of view of the Property Rights Market. The energy policy assumes a reduction of primary energy consumption by 23% in relation to the forecasts.

In 2020 the production of electricity from renewable sources in Poland increased by 14%, matched by an increase in installed capacity by 10%. In order to meet the obligations set out in European regulations and in the Poland's energy strategy, even greater increases should be expected in the coming years. The Polish Power Exchange has supported the development of renewable energy since 2015. Today, the Property Rights Market is one of the key exchange markets. In 2020 revenues from trading in property rights accounted for almost 38% of the revenues of the commodity market of the GPW group.

The total volume of trading in property rights for electricity from RES in 2020 was 26,982,840 MWh, which means an increase by over 4% compared to the 2019 result. The weighted average price at PRM sessions in 2020 for the PMOZE_A instrument was PLN 138.22/MWh, i.e. PLN 6.03/MWh (4.6%) more comparing to the 2019 level. The highest prices of the instrument were recorded during the sessions in the first quarter, the lowest in the second quarter. The volume of trading in property rights for energy efficiency in 2020 totalled 191,023 toe, which means a decrease by 61.2% year-on-year. Trading in Guarantees of Origin for electricity generated in RES reached the volume of 18,323,232 MWh in 2020, which means a decrease by 4.2% compared to 2019.

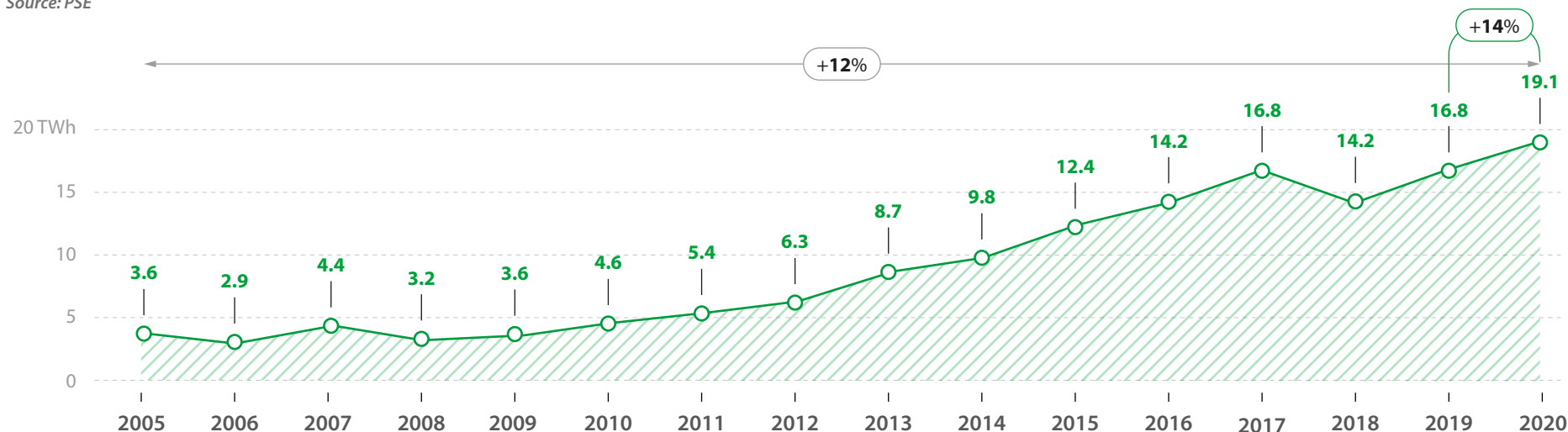
► AVERAGE PRICES OF THE PMOZE_A INSTRUMENT IN 2019 AND 2020

Source: TGE



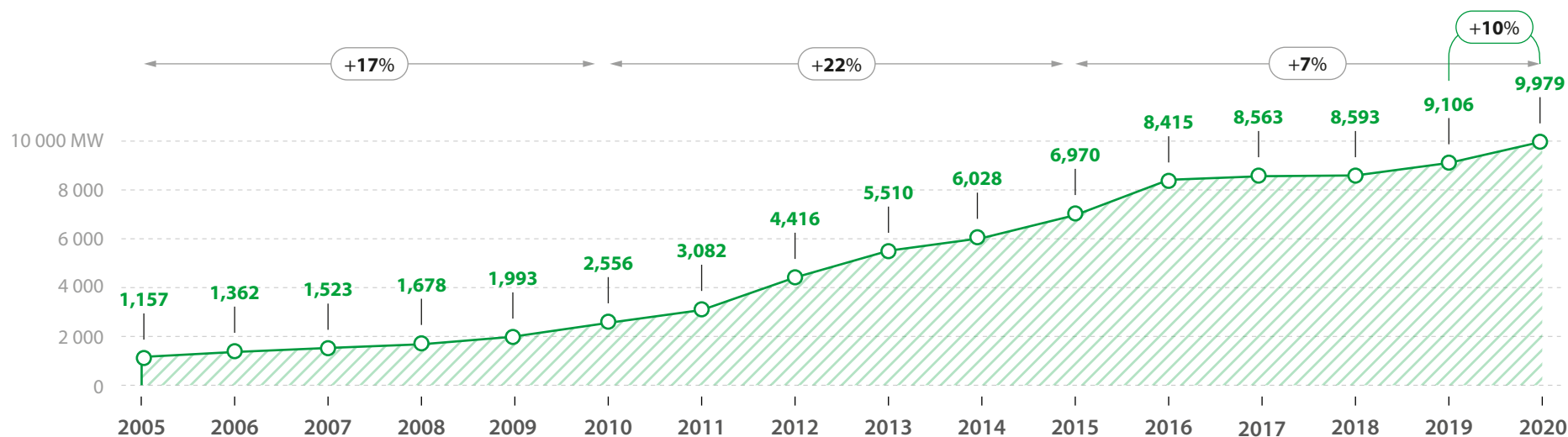
► ELECTRICITY PRODUCED IN RENEWABLE ENERGY SOURCES IN POLAND

Source: PSE



► INSTALLED CAPACITY IN RENEWABLE ENERGY SOURCES IN POLAND

Source: PSE



OFFER

The property rights market deals with trading in property rights arising from certificates of origin relating to:



generation of electricity from renewable energy sources
(PMOZE, PMOZE_A)



generation of electricity in agricultural biogas plants
(PMOZE-BIO)



generation of agricultural biogas and introducing it to the distribution network
(PMBG)



energy efficiency, obtained by entities conducting investments aimed at reducing the amount of energy consumed
(PMEF, PMEF-XXXX, PMEF_F)

The Polish Power Exchange maintains two registers under national regulations:

- the Certificate of Origin Register
- the Guarantee of Origin Register

CERTIFICATE OF ORIGIN REGISTER AND GUARANTEE OF ORIGIN REGISTER

Certificate of Origin Register >

The Certificate of Origin Register aims to centralise information on energy generated from renewable energy sources. It ensures market transparency and reliability. The tasks of the Register include in particular:

- identification of entities entitled to property rights resulting from certificates of origin
- identification of applicable property rights resulting from certificates of origin and the amount of electric energy corresponding to those rights
- registration of certificates of origin and property rights resulting therefrom
- registering transactions concluded in property rights trading and the ownership status for property rights resulting from certificates of origin
- issuing documents confirming the ownership status for property rights in the register, which are later used by the Energy Regulatory Office to redeem certificates of origin

The status of a Member in the Certificate of Origin Register at the end of 2020 had

4,014 entities

Guarantee of Origin Register >

Parallel with the Certificate of Origin Register, the Polish Power Exchange maintains the Guarantee of Origin Register with the view to disclosing generation sources for electric energy and fuels. The Guarantee of Origin Register is directed at entities generating energy from renewable sources, trading companies, brokers and other interested parties which require a confirmation that the given electric energy is generated from renewable sources. In 2019, guarantees of origin for electricity generated in high-efficiency co-generation were introduced to trading on TGE.

The status of a Member in the Guarantee of Origin Register at the end of 2020 had

824 entities





COAL MARKET

COAL MARKET

In 2020 the share of installed capacity in the national power system using hard coal decreased again to reach 46.2%, as compared to 49.5% a year earlier. Commercial power plants using hard coal produced 47% of the electricity fed into the grid.

Total coal sales amounted to 52.9 Mt compared to 58.4 Mt in 2019. The price of hard coal is published on a dedicated platform in the form of two price indices that can also act as the underlying instrument:

► **PSCMI 1 Index** (PSCMI 1/T in PLN/tonne and PSCMI 1/Q in PLN/GJ)

Index for fine coal, class 20-23 /1, for commercial and industrial power plants. It is calculated as a weighted average from monthly deliveries meeting the following quality criterion for the index (working state parameters): calorific value: $20 \leq Q_{ri} < 24$ [MJ/kg], total sulphur content below 1%. The monthly product price is set as a weighted average from transactions realised on the Polish steam coal market, invoiced in a given calendar month. The base price is the ex-mine price, i.e. the net price excluding excise tax and VAT, in line with CFA conditions ("in wagon"), on the loading site, excluding insurance or delivery costs for the intended transport route.

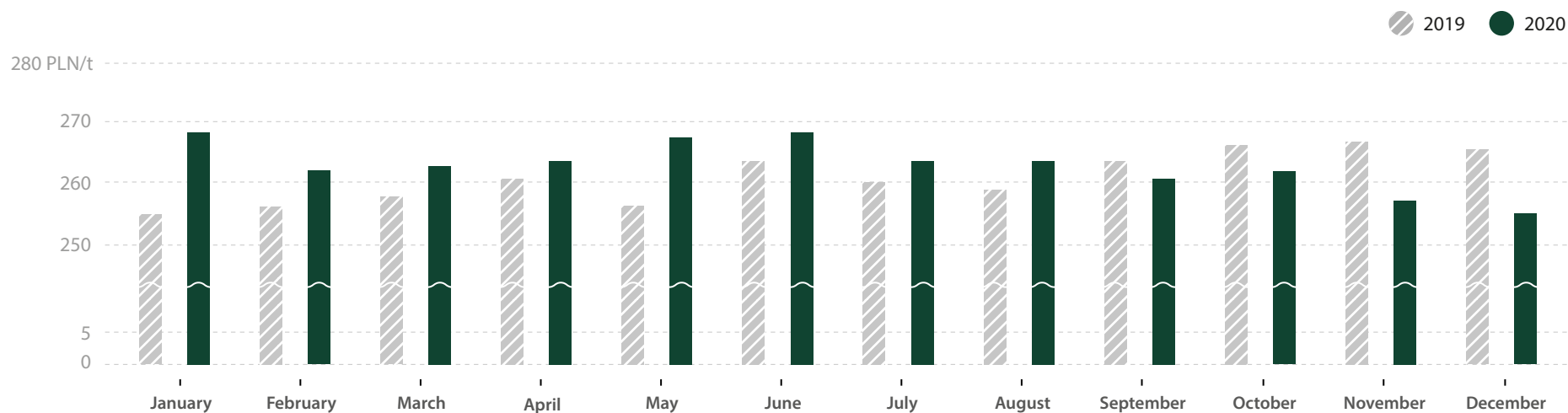
► **PSCMI 2 Index** (PSCMI 2/T in PLN/tonne and PSCMI 2/Q in PLN/GJ)

Index for fine coal, class 23-26/08, for industrial and communal heating stations, other industrial consumers and the remaining domestic consumers. It is calculated as a weighted average from monthly deliveries meeting the following quality criterion for the index (working state parameters): calorific value: $23 \leq Q_{ri} < 27$ [MJ/kg], total sulphur content below 0.8%. The monthly product price is set as a weighted average from transactions realised on the Polish steam coal market, invoiced in a given calendar month. The base price is the ex-mine price, i.e. the net price excluding excise tax and VAT, in line with CFA conditions ("in wagon"), on the loading site, without costs of insurance or delivery costs for the intended transport route.

The prices on the Polish coal market at the end of 2020 were lower than the year before, both in the case of coal for commercial and industrial power plants, as well as for industrial and communal heating stations, other industrial consumers and the remaining domestic consumers. At the same time, in Q1 and Q2, they reached levels higher than in 2019. In the case of prices for the energy sector, the YOY decrease in December 2020 was 3.9% for the price in PLN/t and 3.3% for the price in PLN/GJ. In the case of prices for heating plants, the corresponding decreases amounted then to 3.1% and 2.9%. The highest PSCMI 1/T index value in 2020 was reported in January and amounted to 268.32 PLN/t. The lowest value of this index was PLN 254.80/t and it was the case for December deliveries. The highest PSCMI 2/T index value was reported in April 2020 and amounted to 331.80 PLN/t. The lowest value of this index was PLN 292.17/t and it was the case for December deliveries.

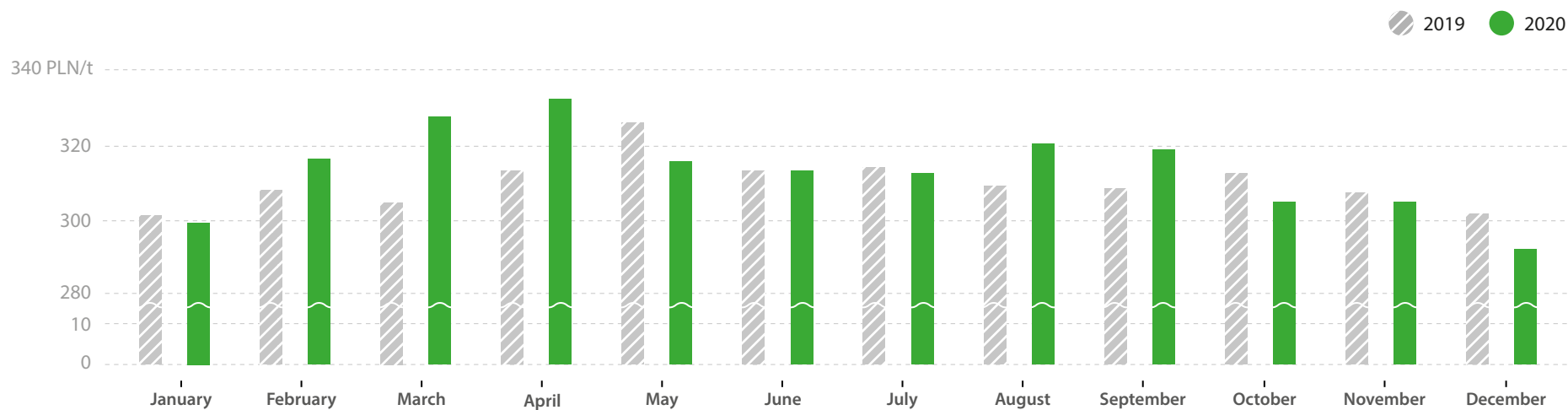
► MONTHLY PSCMI 1 INDICES

Source: GPI TGE



► MONTHLY PSCMI 2 INDICES

Source: GPI TGE





EDUCATION AS TGE'S STRENGTH

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RAISING THE AWARENESS OF THE MEDIA AND OTHER MARKET PARTICIPANTS IN THE FIELD OF THE DOMESTIC COMMODITY MARKET — THESE ARE THE PILLARS OF TGE'S EDUCATIONAL MISSION. THE MISSION THAT THE EXCHANGE HAS PERMANENTLY EMBEDDED IN ITS BUSINESS DNA. AFTER ALL, AN ALTERNATIVE EXTENSION OF THE ABBREVIATION TGE IS: TRADING, GUARANTEEING AND... EDUCATING. **IT CANNOT BE DENIED THAT THIS IS EDUCATION WITH A CAPITAL E.**

WITH THE MEDIA AND FOR THE MEDIA

The flagship, regular event organized by TGE is the “Platinum Megawatts” Competition for the media.

The event has been held annually since 2015 and year by year it has gained increasing interest - since the beginning of the competition, as many as 347 press materials have been submitted, including video reports and podcasts. The competition itself aims to promote reliable journalism and reward those authors who, when dealing with the difficult topic of broadly understood energy, translate it into a language that is understandable to the consumer. The awards are granted during a gala, which has become a regular event in the calendar of the most important industry events.

But that's not all. Appreciating those who educate others, TGE takes up this education itself. In addition to the competition there are workshops for the media devoted to energy security, key changes in regulations, their impact on the market or investment challenges that the entire sector is facing.

Extensive interest of partners and patrons is proof of the significance of the event- in each edition, the organization involves key institutions in the energy sector. TGE is thus becoming the driving force behind the educational process. By rewarding the best, it motivates them to raise the bar on themselves. And by arranging meetings or workshops, it stimulates the sharing of knowledge.

**COMPETITION
FOR THE MEDIA**



platinum
megawatts

FACE TO FACE WITH MARKET PARTICIPANTS

In January 2020 the Market Council was established to act as an advisory body for the Management Board of TGE with regard to energy and gas market development and initiation of specific projects, including issuing opinions on changes.

Its members are experts representing 12 of the most important industry associations. The activities of the Market Council are intended to enable the exchange of information between TGE and market participants, the direct goal of which is to optimize trading strategies.

With the members of the Exchange in mind, in 2020 TGE Update was also launched. This is an initiative that takes the form of regular meetings. Two such meetings have been held so far. During each meeting the guests have the opportunity to learn about important issues related to the exchange market, including those in terms of planned activities and projects.



TGE'S TRAINING PLATFORMS

TGE has also been actively involved in educating brokers by conducting training courses, examinations and issuing certificates. Last year alone, 372 TGE broker certificates were awarded, and in 2021 31 candidates have so far obtained such a certificate.

FOR BROKERS

Since 2015, TGE has continually engaged in broker education to prepare brokers for trading on all the markets operated by the Exchange. In 2020, TGE conducted 3 trainings attended by 38 participants in total. Following a successfully passed examination which concluded the training, confirmed with a TGE Broker's certificate, representatives of Exchange Members could be entered on the list of TGE Brokers and start transacting on the Commodity Market, the Organised Trading Facility and the Financial Instruments Market. At the same time, in connection with the launch of the Organised Trading Facility (OTF) in May 2020, TGE changed the model of trainings and exams for brokers, introducing supplementary training. As a result, TGE issued a total of 373 certificates in 2020.

The membership grew by 4 new companies which joined the Exchange in 2020, totalling **79 entities** at the end of the year.

AGRICULTURAL EXCHANGE MARKET

The new area of TGE's activity is the Agricultural Exchange Market, as part of which a series of educational and promotional meetings is held under the honorary patronage of the Ministry of Agriculture and Rural Development. Workshops are organized for the Agricultural Exchange Market participants with regard to improving their competences and professional qualifications in areas related to laboratory analytics, sampling of agri-food products, determining the quality classes of specific products and managing projects for obtaining EU grants. So far, two training sessions have been organized, with a total of 42 participants.

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WHILE SHAPING THE EXCHANGE MARKET REALITY AND GUARANTEEING SAFETY OF TRANSACTIONS, TGE FOLLOWS GLOBAL TRENDS, ELEVATES SERVICE STANDARDS AND EDUCATES ITS STAKEHOLDERS. WHEN THIS IS COUPLED WITH CONTENT-ORIENTED PARTNERSHIP IN EVENTS, DEBATES AND CONFERENCES OR INVOLVEMENT IN EXTERNAL EDUCATIONAL PROGRAMMES (SUCH AS THE WSE FOUNDATION'S "GO4POLAND"), IT IS CLEAR THAT TGE TAKES ITS MISSION VERY SERIOUSLY. AND MOST IMPORTANTLY, IT HAS NO INTENTION OF SLOWING DOWN.

TGE

2020

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