

The background of the page is a complex, abstract pattern of overlapping, dark, rectangular shapes. These shapes are arranged in a way that creates a sense of depth and movement, resembling a 3D architectural structure or a series of interlocking blocks. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the geometric forms. The overall color palette is monochromatic, consisting of various shades of black, grey, and white.

Sectors



Agriculture

Agriculture continues to be a significant sector of the Polish economy. With a share of 11.6%¹ in the total number of employees, it contributes ca. 3%² to Poland's GDP. In terms of the contribution to GDP, agriculture is the fourth biggest sector in the country and it is significantly higher compared with the Community's average level. It places Poland as the sixth food producer in the EU.

Poland ranks first in the production of fruit such as apples, raspberries, cherries and blackcurrant. Poland also has extensive potatoes (1st place) and sugar beet (3rd place) production in the EU. As for cereals, Polish farmers are leading producers of rye and wheat. Poland is also a very important exporter of milk and meat, especially in the poultry segment, which is the biggest and most cost-effective in the EU.

The Ukrainian crisis and consequently Russia's embargo on imports from countries (inter alia Poland) which had implemented economic sanctions against it affects Poland's export directions. At the beginning of 2014 Polish farmers were substantially impacted, as general exports to Russia dropped by 14%³ with apple

supplies slumping by ca. 20% as a result of the embargo.⁴ However, according to the available data 2015 was the first year for 25 years with a positive foreign trade balance, mainly as a consequence of more effort to acquire new export markets in Asia, America and Africa.

Compared with the EU average, Polish agriculture is highly fragmented with 73% of small, traditional farms (1-10 ha) covering over 30% of land⁵. This poses a challenge as such structure results in a relatively low harvest output per 1ha. The increasing average size of farms and the introduction of innovative technologies are seen as primary measures designed to boost productivity. The implementation of those measures will be partially driven by EU's financial support. Poland, as the largest beneficiary of EU subsidies in the 2014-2020 financial framework, is planned to receive EUR 32b under the Common Agricultural Policy. The optimistic outlook is also supported by farmers, as 40% of them view state-of-the-art agricultural machinery as a key success factor for the upturn.⁶

¹ <http://rynekpracy.org/x/989321>.

² Business Monitor.

³ <http://www.bankier.pl/wiadomosc/Eksport-do-Rosji-spadl-o-14-7236936.html>.

⁴ Związek Sadowników RP.

⁵ National Statistical Office data

⁶ Raport „25 Lat Polskiego Rolnictwa. Bezpieczeństwo żywnościowe w Europie”.



Automotive

The Automotive sector is one of the key branches of the Polish economy. Its significance is reflected in the labor market. Around 180,000 people¹ work in the automotive manufacturing industry, making it the fourth largest industrial employer in the country.

In 2016 there were 677,000 vehicles produced in Poland, which is a 3.2% increase from 656,000 cars produced in the previous year.² In 2015 Poland ranked the eighth largest car manufacturer in the EU and the fourth in the CEE region³.

During the last decade the Polish market has attracted numerous Original Equipment Manufacturers (OEMs). Car production in Poland concentrates in two industrial hubs: Upper Silesia (Fiat and Opel facilities), and the Greater Poland region (VW).

This increase in vehicles production is partially driven by the number of OEMs, which have recently made investments in Poland. The most notable ones include:

- ▶ Production of the fifth-generation Astra started in GM's Gliwice facility in 2015;
- ▶ In 2016 a new Volkswagen facility in Września started the manufacturing of Crafter. Its expected capacity is 100,000 vehicles annually

In the coming years the Polish vehicle output is expected to increase with a 6% growth rate for 2017 and 2018⁴.

Domestic car sales are also on the rise. The number of new cars (passenger and LCV) sold in 2016 was ca. 476,000, which is 17% more compared with the previous year. Vehicle sales in 2016 were dominated by the VW Group's brands, with Skoda and VW in the first positions and Toyota claiming the third place⁵.

The number of vehicle sold is forecasted to grow in the coming years at an annual rate of 3.0% in 2017 and 2.3% in 2018⁶.

¹ GUS Data

² PZPM (includes commercial vehicles)

³ ACEA.

⁴ BMI Research

⁵ PZPM

⁶ BMI Research



Business Services

Business Services Sector, consisting of BPO, IT, SSC and R&D companies, is one of the fastest developing industry in Poland. It benefits from global trend of centralization of back office functions, where availability of skilled and dedicated employees together with labor costs arbitrage are the most important factors when deciding about future locations of business.

During the last 5 years, Business Service Sector has become one of the largest employers in the country, with employment in year 2016 exceeding 212 thousand people working in over 930 companies with both Polish and foreign capital. The increase in the number of jobs in the last year exceeded 25%, which is more than in previous years.

Current dynamic development of the industry is happening thanks to both new centres being set-up, as well as the consistent employment growth within already established ones. Currently, there are 37 centres employing over

1,000 people each. The sector is on the rise from the perspective of its size, measured by the growing quantity of different types of centres, and the increase in new job openings. Industry is also evolving, rapidly increasing the complexity and quality of provided services.

Business Services Sector operates mainly (with 90% of workforce deployed there) in seven cities and metropolitan areas (MAs): Kraków, Warsaw, Wrocław, Katowice MA, Tri-city MA, Łódź and Poznań. In each of those, the sector employs over 10,000 people, with Kraków being the most saturated city, with over 50,000 people working there in that industry.

Forecasts for the following years are still very good. In the near future, Poland will remain a first choice location for centres for companies operating in the European market in general. It is estimated, that the total number of jobs in the sector will grow to 300,000 in 2020.



Defense and aerospace

Poland has embarked on an ambitious plan of investment in and modernization of the Polish armed forces. Combined with the statutory target of military spend at 2% of the GDP (one of the highest among NATO countries, and intended to be raised in not-so-distant future), the outlook for the Polish Defense sector looks auspicious. In 2017 alone, Poland plans to spend USD9.3bn¹ on defense, 1.3% more than in record 2016.

The budget for asset-related spending, such as armaments, military equipment, and investments in the NATO infrastructure, is USD2.6bn. The Defense sector is one of the growth drivers behind the government's key strategic program: Plan for Responsible Development. A regular expenditure on Defense of around USD10bn per annum is expected in the years to come.

Poland's military budget has a number of crucial components, including key priority areas and the Technical Modernization Plan (of the Polish armed forces). The former focus on development of an anti-missile defense system (Program "Wisla"), cyber security, investment in the Navy (acquisition of submarines; Program "Orka"), purchase of utility and attack helicopters (Program "Kruk"), build-up of the Territorial Defense (new military force), and enhancement of the command system and structure. The TMP, while dovetailing with the overall key objectives (e.g. the AMD), additionally

prioritizes investment in and technological advancement of air defense systems and armored and mechanized forces. Plans also include an increase in the number of troops up to 130 thousand (currently Poland has 49 thousand troops in the land forces; 16 thousand in the Air Force; 7 thousand in the Navy, and 30 thousand in other segments). Specific programs are designed to address all the key priorities.

The huge budgetary effort is very much aimed at modernization of the Polish defense industry. Poland has lately consolidated the sector under the umbrella of a holding company - Polska Grupa Zbrojeniowa (Polish Armaments Group). PGZ holds over 60 companies and has revenues of over USD1.25bn. Owned by the State (the Ministry of National Defense), the Group partners with foreign defense contractors for the large military programs and will be the main beneficiary of the Offset commitments that by law need to accompany any major military contract with foreign suppliers. The objective is to develop PGZ into an internationally competitive defense contractor embedded into global supply chains of the largest players in the industry who cooperate in modernization of the Polish army. Privately-owned defense companies will also have an important role to play, particularly in those niches where they can offer technologically advanced solutions and specialized components (e.g. Unmanned Aerial Vehicles or drones, and communications systems).

¹ The exchange rate: USD1 = PLN4.0

Defense and aerospace

Major opportunities are available to foreign defense contractors as well as those indirectly supplying to the industry. They are primarily connected with the key priority areas and programs outlined above (AMD, the Navy, helicopters, NATO infrastructure, tanks and armored vehicles, medium- and long-range UAV's). They are most likely to involve those offerings that will support development of sovereign defense industrial and technological capabilities. Offset proposals that are part and parcel of large military contracts will be required to have a strong local industrial component. Other most desired elements include: transfer of technologies and know-how, co-production of armaments and/or military equipment, integration into supply chains / growth of exports. In awarding contracts Polish authorities stress that price and local content are the most important factors. Each major contract should be combined with an offset proposal, including:

1. Transfer of technology or know-how, along with economic rights or licensed rights, which ensures Poland's independence from foreign suppliers;
2. Maintaining or establishing in Poland capabilities to produce, maintain, service & repair arms, munitions and war material, which are critical to the national security of Poland.

Military contracts are subject to strict procurement rules, including specific

milestones and procedures, technical dialog, competitive basis, Offset laws. Decision-making process is impacted by complex procedures, defining priorities and political will, and has been proven time-consuming, with strong negotiation tactics.

Among the most successful domestic realizations carried out in the sector in cooperation with multinational contractors in the recent years are: the Anders tracked platform variant of the car combat infantry; the Krab self-propelled howitzer; the Rak mortar crawler, the Rosomak armored wheeled vehicle, and the modernization program of the Leopard 2 tank.

Prime foreign defense contractors investing in the industry include: Lockheed Martin (manufacture of the Black Hawk helicopter at Sikorsky / PZL Mielec), Finmeccanica / Leonardo / AgustaWestland (manufacture of the Gluzec helicopter, equipped with Spike rockets, at PZL Świdnik). In addition, PGZ has signed a number of letters of intent to support modernization programs and cooperation with the Polish defense sector, including with Raytheon, MEADS (Lockheed Martin), Thales, DCNS, Saab, Bell Helicopter (Textron), Boeing, Elbit, Leonardo-Finmeccanica, Kongsberg, Rheinmetall.

The largest annual event for the defense and security industry in Central and Eastern Europe is the International Defence Industry Exhibition (MSPO), and one of

Defense and aerospace

Europe's largest trade shows dedicated to the defense sector. The MSPO is held annually in Kielce (southeast Poland) at the beginning of September.

Aerospace

The Aerospace industry in Poland is one of the growing areas of the Polish economy. This growth is driven by (1) a global demand for products manufactured in Poland as well as (2) the local demand underpinning the increasing number of airline passengers and development of associated infrastructure.

Manufacturing in this industry is concentrated in the Polish Aviation Valley - a specialized industrial cluster in the South-East part of Poland with a concentration of aerospace manufacturers, scientific research centers and educational and training facilities, with over 100 operating companies and more than 23 thousand employees. The Aviation Valley generates ca. 90% of Polish aviation industry production. The production potential of the Aviation Valley has been dynamically increasing thanks to new direct investments by international corporations (almost USD 0.5bn since 2003). As a result, the total annual exports rose from USD 0.25bn in 2003 to USD 2.0 bn in 2014 (CAGR of +21%). Major Polish aviation manufacturers have been acquired by large multinational

companies, e.g. PZL Mielec (acquired by Sikorsky Aircraft Company), PZL Świdnik (acquired by AgustaWestland), etc. These companies tend to be located in the Aviation Valley and their portfolios include civil and military products.

Poland is also home to a number of aerospace component producers - PZL Rzeszów (United Technologies Corporation), Pratt & Whitney Kalisz (United Technologies Corporation), EADS PZL Warszawa-Okecie (Airbus Military). Due to the fact that the Polish domestic market is rather small and Polish aviation producers are owned by multinational players, the production and sales volumes are mainly driven by the global trends.

The growing number of airline passengers in Poland drives the development of airlines and companies servicing the air transport sector (e.g. handling, MRO). In 2016, Polish airports served over 34 million passengers and this number has been growing constantly since 2009. This growth was possible thanks to a significant development of infrastructure, with 15 airports currently operating in Poland. The Civil Aviation Authority forecasts that in 2030 the number of passengers will reach over 59 million (CAGR of +5.2%), which will further increase demand for associated aerospace products and services.



Gas market in Poland

Consumption of natural gas in Poland amounts to ca. 15,5 bcm (billions of cubic meters) annually and has not changed significantly over the last ten years. Like most of the CEE region, Poland relies on a single gas supplier (Russia) for the majority of its natural gas import. However, this is about to change.

Past conditions have determined the mode of Polish transmission system construction in which its development was performed with the aim of facilitating the flow of Russian gas towards the western part of Poland. Major import points have been located on the eastern border (Drozdowicze, Wysokoje) as well as in the transit gas pipeline Yamal-Europe. These entry points have been used for the purpose of execution of a long-term import contract signed with Eastern gas suppliers. Over years, this led to a situation of a total dependence on gas supplies from one direction. In order to tackle this threat for security of gas supplies in the recent period Poland, and in particular the transmission system operator GAZ-SYSTEM, has undertaken a number of successful initiatives and ventures aimed at diversification of directions and sources of supplies. The major objective was to lower the dependence of Poland on Russian gas and foster the country's integration with other EU gas markets.

The success of these actions has been observed due to construction of cross-

border interconnection infrastructure (Lasów, Cieszyn, Mallnow – reverse flow) as well as launch of the LNG Terminal in Świnoujście, with the technical regasification capacity of 5 bcm/a which allows for satisfying approximately 1/3 of the total domestic demand by LNG sources from international markets.

While recent projects have played very important role, the reorientation and modernization of the Polish gas transmission system requires its further development, understood as completion of additional infrastructural investments that will completely change the gas landscape in Poland. In particular, these projects are:

- ▶ The Northern Gate
- ▶ Cross-border interconnectors
- ▶ Domestic infrastructure

The Northern Gate

The so called Northern Gate, being by far the most important project, assumes development of the import infrastructure located at the Polish Baltic Sea shore, which is supposed to connect Poland with new, abundant gas markets. It can be achieved in two variants:

- (i) realization of the Baltic Pipe Project connecting Poland via Denmark with gas fields located at the Norwegian Continental Shelf,

Gas market in Poland

- (ii) increase in the LNG regasification capacity - applicable to both the existing LNG Terminal in Świnoujście and/or construction of a new Floating Storage Regasification Unit (FSRU) located in the Bay of Gdańsk.

Cross-border interconnectors

In addition, Poland plans to continue actions aimed at integration of its gas system with neighbouring markets, allowing for both export and import of gas from these directions. The ongoing/planned investment projects include construction of the following infrastructure:

- (i) Poland - Lithuania interconnection,
- (ii) Poland - Ukraine interconnection,
- (iii) Poland - Slovakia interconnection,
- (iv) Poland - Czechia interconnection.

Domestic infrastructure

Simultaneously with projects regarding the Northern Gate and cross-border interconnectors, Poland will continue the active development of the domestic infrastructure - particularly with respect to:

- ▶ major pipelines allowing for transmission of large gas volumes from any direction, and
- ▶ existing bottlenecks in the Polish transmission system.

Ambitious investment plans provide a unique opportunity for international firms who are involved in all areas of pipeline construction. Furthermore, realization of all the investments will secure that Poland will become not only fully independent from gas supplies from Russia, but it will offer very promising opportunities for large international companies active in gas trading and/or gas production.



Information, communication and technology

Poland maintains its leading position as a near-shore destination for IT companies from Western and Northern Europe. Poland was also the 'number one' destination in the CEE region in terms of R&D projects, driven essentially by international software companies.

Additionally, the ICT industry influences growth of the outsourcing sector in Poland. The average year-on-year growth of this sector in Poland is estimated at around 20% and according to the Polish Investment and Trade Agency more than 40% of all outsourcing centers in CEE are located in Poland. The key factor which makes the ICT sector one of the most innovative sectors in Poland is education. Well-skilled Polish programmers, investment in developing programming faculties at universities and promoting maths in the school education system are the features that put Poland at a noticeable advantage over other developing countries.

Based on the Global Competitiveness Index 2014-2015, Poland has already embarked on the task of shifting from the efficiency-driven to innovation-driven economy.

ICTs have evolved into the "general purpose technology" of our time, giving their critical spillovers to other economic sectors and their role as industry-wide enabling infrastructure. Therefore ICT access and usage are key enablers of the countries' overall technological readiness, and the ICT industry will play the most influential part of this transformation.

Growing financial support (EUR 82.5b from EU funds only) and the promotion of investment in new technologies will finally lead to Poland's success regarding innovations.

Currently the ICT sector in Poland seems inconsistent. On the one hand, the Polish e-commerce market is developing very rapidly - by 2018, the share of e-commerce in Poland should grow to 8% of the total retail trade. Poland holds the 10th position as the hub of the fastest growing companies on the EMEA technology market, and the video game market has 120+ game studios producing about 150+ games per year. Some of the most popular video games on mobile platforms are products designed by Polish developers.

On the other hand, Polish executives interviewed at the World Economic Forum pointed out low, firm-level technology absorption; the international competitive advantage based on low-cost labour or natural resources rather than unique products and processes; low R&D spend.

It seems that these contradictory opinions can be reconciled with one conclusion - the Polish ICT market is growing rapidly in the outsourcing area, delivering value to foreign investors, the SME sector is on the fast-track to growth, while traditional industries and the governmental sector have room for improvement by absorbing ICT technology to enhance their effectiveness, but when it comes it will be an additional booster for growth of the IT market in Poland.



Infrastructure

Closing the infrastructure gap between the demands of modern society and the current capabilities are the main criteria of prosperity considered by key policy stakeholders in Poland. Investments in various types of infrastructure maintain the key role in convergence of Polish economy since the EU accession.

Pivotal role for the expansion of Polish infrastructure expenditures play EU cohesion and regional development funds as well as European Investment Bank & European Bank for Reconstruction and Development credit facilities. Since 2007 Poland is the single largest Member State - beneficiary of these support mechanisms. It is no exaggeration to say that virtually all significant investments in Poland are being implemented with direct or indirect EU co-finance.

According to current arrangements, for years 2014 - 2020 Poland will receive EUR 77.6 billion from EU structural funds, of which 27.4 billion will be spent through national Operational Programme Infrastructure & Environment. This facility will support most important national-level investments, such as construction of motorways and expressways, railways, public transport, seaports, waterways, as well as substantial investment in waste and water management systems or energy efficiency.

Reflecting devolution of Polish governance, great proportion of EU funds (more than 50%) are managed at regional level, through Regional Operational Programmes. Although their impact is visible at the local level, the aggregated amount of regional funds is as significant as those managed nationally.

Investments in road and rail infrastructure encompass the bulk of Polish government priorities in transportation and other public services. The worth of planned road infrastructure projects to be performed until 2023 amounts to EUR 35.7 billion, while rail infrastructure projects to be implemented in the same time period are worth EUR 15.2 billion.

Rail infrastructure

Currently there are about 19 thousand km of railways in Poland. Over 90% of them belong to national infrastructure manager PKP PLK S.A. According to National Rail Programme for 2015 - 2023 timeframe, rail investment projects will be financed mainly from European Union Cohesion Fund (EUR 7.1 billion) and Connecting Europe Facility (EUR 4.2 billion), supplemented by European Regional Development Fund (EUR 1.6 billion) and governmental funds (PLN 2.3 billion). The main goal of investments is establishment of modern and consistent railway transport system.

Infrastructure

Particularly, investments aim at increasing transport effectiveness, security and quality. Programme encompasses implementing European Rail Traffic Management System, which will allow to increase capacity, international rail operations and increase the speed on selected lines to over 160 km/h. Around 8 500 km of railways will receive funding for various investments until 2023.

Road infrastructure

Currently, there are 19 thousand km of national roads, including motorways and expressways. In the last 10 years length of expressways and motorways increased 3 times. Nevertheless, main disadvantages of national road network are lack of consistency, inability to carry load of 11.5 tonnes per axle on many road stretches and high traffic volumes going through built-up areas.

The sum devoted for road projects contains up to EUR 22.3 billion designated for the construction of motorways and expressways and EUR 2.2 billion for the construction of ring roads. Poland is obliged to complete construction of core TEN-T network, consisting of 3 890 km of roads, till the end of year 2030. Core and comprehensive network, 7 400 km long, is supposed to be finished by 2050.

Airport infrastructure

Warsaw Chopin Airport is the main Polish international hub, supported by 14 regional airports which provide fine national and international connections.

All airports received substantial public and EU support (including greenfield projects) in years 2007 - 2013. In general, all facilities have modern land- and airside facilities and provide appropriate capacity.

Further investments shall be implemented basing on business case feasibility, except for improvement of airport security systems which will receive public support.

Maritime and inland waterways infrastructure

Gdańsk and Gdynia are the main container hub in the Baltic Sea region with direct calls from Asia, whereas Szczecin and Świnoujście host new LNG terminal. However, the role of inland waterways is marginal.

Polish government plans to spend EUR 2.1 billion for development of inland waterways up to 2020. Seaports will receive public support for infrastructure projects amounting to EUR 2.7 billion. In particular, hinterland accessibility of seaports will be improved. These will be supplemented by private investments of terminal operators.



Mining

The Polish mining industry is based on relatively big resources of 50 most important raw materials and produces substantial volumes of steam coal, coking coal and lignite, natural gas, copper, silver, zinc and lead, rock salt, sulfur, stone and ceramic raw materials. Deposits of these materials may be categorized into four groups: energy, metallic, chemical and stone raw materials. Although the economic importance of those groups varies, the energy raw materials continue to play a vital role in Poland's economy. Steam coal is still considered the strategic pillar of Poland's energy safety. Still, more than 80% of the country's electricity comes from coal and lignite. The location of the crucial deposits of power, metallic and chemical raw materials is determined by the geological structure of Poland. Most of them are located across the area of central and eastern Poland, along the line connecting Koszalin and Lublin.

Per World Mining Data 2016, Poland is classified in the top 20 largest countries in terms of production of mineral fuels, iron, ferroalloys, non-ferrous metals, precious metals and industrial minerals. In the previous decade, the production of nine minerals in Poland placed the country in the top ten of the world's producers of silver, brown coal, palladium, cadmium, coking coal, lead, sulfur, steam coal and copper.

Poland is one of Europe's top coal and copper producers.

Coal

Poland is Europe's largest coal producer and a leading manufacturer on the global market. In 2011 coal production in Poland totalled 76.5m tons, compared to 79.8m tons in 2012, 76.5m tons in 2013 and 72.5m tons in 2014, accounting for 40 percent of total production in Europe (excluding Russia); with approximately 1 percent of the global share of coal output (applicable to steam and coking coal), Poland was the world's ninth largest producer (source: BP Statistical Review 2014 and World Mining Data 2016). The Upper Silesian, Lower Silesian and Lublin basins have estimated aggregate resources of 44b tons of coal, spread across approximately 128 deposits. The Upper Silesian basin represents a major portion of the Polish reserves, representing approximately 79 percent of total reserves across 110 deposits. Steam and coking coal are extracted in two regions of Poland: Upper Silesia (companies controlled by the State Treasury, i.e. Jastrzębska Spółka Węglowa S.A., Katowicki Holding Węglowy S.A., Polska Grupa Górnicza S.A.; and one company in the hands of a private investor, i.e. PG Silesia sp. z o.o.) and in South East Poland, near Lublin (company indirectly controlled by the State Treasury, i.e. LW Bogdanka S.A.). These two regions have the majority of the known coal deposits in Poland. Currently the state-owned companies operating in this sector are undergoing restructuring and significant organizational changes.

Mining

Copper and other metals

All of Poland's copper production comes from KGHM Polska Miedź S.A. KGHM extracts and processes copper and other valuable natural resources (including metals such as silver, molybdenum, palladium or nickel) with the largest European deposits of copper ore located in the south-western part of Poland. In Poland the production is sourced from three underground mines. Currently, the company boasts a geographically diversified portfolio of mining projects. KGHM has its facilities on three continents: Europe, the North and South America.

KGHM ranks among the world's largest producers of silver and copper. It is also the only company in Europe producing rhenium and ammonium perrhenate from its own resources.

In the last decades, Poland has experienced the strongest economic growth among the former Soviet bloc nations and has launched several economic initiatives, including the privatization of state-owned industries and the restructuring of the coal and heavy industry sectors.

The Polish mining sector continues to play a vital role in the Polish economy but faces several risks and challenges, including:

- ▶ ensuring the power energy safety (continuing the restructuring of hard coal mining and making a decision about developing 'clean' power energy based

on coal; seeking alternative sources of natural gas and crude oil importation and starting the exploration of unconventional sources of natural gas);

- ▶ the European Union's climate policy making it more expensive to produce energy from coal and pushing for the construction of new more efficient coal-fired plants that consume less fuel;
- ▶ margins are substantially dependent on market prices and production costs which are relatively fixed. Historically, the domestic and international markets for coal have at times experienced volatility, with periods of increased demand causing insufficient production capacity and higher prices and margins, as well as periods of excess supply, resulting in excess production and lower prices and margins (in recent years, with the global trends in coal prices, the Polish mining sector has faced many challenges in the area of financing its operations and restructuring).

Despite the risks and challenges, the Polish mining sector is still considered to be attractive for local and foreign investors who have recently invested or are considering their investments in copper and coal mining projects.



Power and Utilities

The Polish electric power sector operates in line with all the EU regulations. The sector is subdivided into the following subsectors: power generation, transmission, distribution and sale to end clients. PSE which is wholly owned by the State Treasury is an independent transmission system operator. The market is dominated by four other entities which are controlled by the State Treasury: PGE, Tauron, ENEA and ENERGA. The four companies are integrated vertically and all of them are listed on the Warsaw Stock Exchange. Over the past few years, we have witnessed a change in the strategy of international energy corporations and sale of their assets in Poland - Vattenfall sold its CHP facilities to the gas incumbent - PGNiG. Vattenfall's distribution and sales companies were sold to Tauron. Engie is in the process of selling its power generation assets to ENEA; EDF will also most probably sell its power generation assets to entities controlled by the State Treasury. RWE (Innogy), Fortum and Veolia continue to expand their business operations in Poland.

Each of the integrated companies has its own distribution system operators; in addition, most of them (except for Energa) also have own lignite mines or hard coal mines.

The intensive development of renewable energy sources supported by a system of green certificates was slowed down in 2016 as a consequence of new regulations. That is particularly true about the wind energy but it should be also kept in mind that the installed capacity in windmills as at the end of 2016 exceeded the government figures by more than 40%. With a new support system based on auctions, the government is able to steer the development of the RES technologies, with biomass and biogas installations being the preferred ones at the moment.

A high market share of subsidised energy from renewable energy sources (RES-E) lowers the market prices and the use of the installed capacity of conventional units based on coal and gas. As a consequence, there is a revenue gap for conventional energy generation - a phenomenon that is observed in many EU countries. That, in turn, poses a threat that some power generation units will be liquidated prematurely for economic reasons; it also hinders decisions on launching investment projects in new conventional powers. PSE's forecasts expected capacity shortages already in the coming years which was an incentive for introducing capacity mechanisms and starting preparations for the introduction

Power and Utilities

of the capacity market. The Ministry of Energy is working on draft regulations on the capacity market which it intends to enact in 2017; nevertheless, before those regulations are enacted, they must be approved by the European Commission.

Works are also under way with regard to the method of implementing the EU goals for 2030 concerning energy, climate and the environment, including the role of nuclear energy. The legislative proposals of new EU regulations, presented in the so called Winter Package in November 2016, will also be a big challenge for the Polish electric power sector.