

**RAFAKO**

GRUPA PBG



**DIRECTORS' REPORT  
ON THE OPERATIONS OF  
THE RAFAKO GROUP  
IN 2018**

**Racibórz, April 29th 2019**



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#### January 18th 2018

- Series K shares issued in November 2017 were registered by the Central Securities Depository of Poland (Krajowy Depozyt Papierów Wartościowych S.A.) and floated on the WSE main market (42,500,000 shares with a par value of PLN 2 and issue price of PLN 4.00 per share were issued).

#### April 27th 2019

- RAFAKO S.A. and HSBC Bank Polska S.A. of Warsaw (the Bank) executed a bank guarantee facility agreement. As of the date of the agreement, the Bank provided a bank guarantee facility, under which RAFAKO may instruct the Bank to issue guarantees up to the facility limit of EUR 20m. The facility may only be used to finance's day-to-day operations related to the performance of contracts by RAFAKO, in the form of guarantees issued upon RAFAKO's instructions.
- The following types of guarantees may be issued under the facility: bid bonds, advance payment bonds, performance bonds and warranty bonds.
- RAFAKO may use the facility only after it has meet all contractual requirements, including the requirement to create security interests that are customary for agreements of such type. The facility is a revolving facility, which means that whenever a guarantee issued by the Bank expires, the available facility amount is increased by the amount of the expired guarantee. The expiry date of a guarantee issued by the Bank must be a date falling on or before April 24th 2024.

#### June 29th 2018

- RAFAKO S.A. executed an annex to a credit facility agreement with Powszechna Kasa Oszczędności Bank Polski S.A. of Warsaw. The annex provides for the multi-purpose credit facility amount of up to PLN 200m, including an overdraft facility of up to PLN 70m, a working capital facility of up to PLN 80m, bank guarantees available on the terms laid down in the agreement, and a revolving working capital facility up to PLN 150m to finance payments (if any) under exercised bank guarantees issued by PKO BP. The annex extended the facility's term and maturity date until June 30th 2019.
- The annex includes a condition that if in 2018 RAFAKO S.A. does not add PLN 900m net of VAT in new contracts to its order book, to be reviewed as at January 31st 2019, PKO BP will be entitled to reduce the amount of the overdraft facility by the percentage by which the new order book falls short of the assumed value, rounded to the nearest million.
- The other terms and conditions of the credit facility agreement were not materially amended under the annex.
- For more details on the credit facility agreement, see Note 31 to the financial statements.

#### July 31st 2018

- Another stage of the Company's reorganisation, aimed at building a flexible and more cost-effective organisation, adapted to current market condition, was completed. As part of the reorganisation, employment was reduced and optimisation measures were taken covering the operations of the entire organisation.
- The staff reduction implemented as part of the reorganisation process did not exceed 276 FTEs, as previously agreed with the trade unions.
- The costs of the reorganisation did not exceed the additional provision recognised for this purpose.

#### December 4th 2018

- RAFAKO S.A. signed an annex with HSBC Bank Polska S.A. of Warsaw, increasing the limit on bank guarantees to EUR 24.5m (by EUR 4m).

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## I. General information

### About us

RAFAKO S.A. (the parent) provides engineering, procurement and construction (EPC) services to the power sector and the oil and gas industry. As a general contractor for power generating units, the Company offers its proprietary technological solutions and is a leader in the manufacturing of energy generation equipment. Since November 2011, the RAFAKO Group has been a member of the PBG Group.

The RAFAKO Group's key products and services include:

Complete power generating units	Heat and power steam generators	Air pollution control systems	Power equipment, machinery and	Natural gas, crude oil and fuels	Other
<ul style="list-style-type: none"> <li>consisting of a boiler (fired with fossil fuels or biomass) together with a turbine coupled with a generator and complete assembly necessary for proper operation of the unit</li> </ul>	<ul style="list-style-type: none"> <li>fired with fossil fuels, biomass and waste</li> <li>with stoker-fired, fluidised bed- and pulverised fuel furnaces</li> <li>sub- and supercritical</li> <li>manufacture and delivery of heat recovery steam generators</li> </ul>	<ul style="list-style-type: none"> <li>manufacture and delivery of wet and semi-dry FGD units</li> <li>manufacture and delivery of flue gas NOx reduction units, including SCR systems</li> <li>manufacture and delivery of dust extraction equipment (electrostatic precipitators, bag filters)</li> </ul>	<ul style="list-style-type: none"> <li>manufacture of components for steam generators and precipitators</li> <li>diagnostics, repairs, and upgrades of boiler equipment</li> <li>design, advisory and maintenance services</li> <li>manufacture of steel structures and other parts for the power generation industry</li> </ul>	<ul style="list-style-type: none"> <li>surface installations for oil and gas production</li> <li>installations for unloading, regasification and storage of LNG</li> <li>oil and gas pipelines</li> <li>fuel tanks</li> <li>technical and sanitary installations</li> </ul>	<ul style="list-style-type: none"> <li>construction and process design, urban planning</li> <li>engineering and technical advisory services</li> <li>supervision services for the construction, industrial and environment protection sectors</li> <li>equipment assembly in the power and chemical industries</li> <li>property management</li> </ul>

The Group delivers these products and services in the EPC model (end-to-end project management including design, procurement, manufacture, assembly/construction, and commissioning) or on a non-EPC basis (design, procurement, manufacture, assembly/construction in various combinations, with procurement and manufacture as mandatory elements).

The parent operates its own production plants. The main plant with five production floors, manufacturing mainly high-pressure equipment, is located in Racibórz, along with the plant management office, design and technology offices. Electrostatic precipitators and their components are manufactured in Wry. In 2018, the parent's total production capacity was approximately 1.0 million man-hours per year.

The parent has been present in the power sector since 1949. The parent's product offering, initially comprising mainly steam generators and their components, was gradually expanded to include complete flue gas desulfurization units, dust extraction units, NOx control systems, etc. From a typical manufacturer, the parent was transformed into a general contractor for power construction projects. In 2014, RAFAKO S.A. became one of the few companies offering and delivering power generation units under EPC contracts, when it launched, practically on a stand-alone basis, the construction of a 910 MW unit for the Jaworzno Power Plant (the "Jaworzno 910 MW Project"). Since 2018, the parent has also been offering transport and storage systems and tanks for natural gas, crude oil and other fuels.

Since its inception, the parent has been a leading supplier of steam generators for the domestic power and industrial sectors. The combined capacity of steam generators made by the parent accounts for a significant part of the total capacity installed in Polish commercial and industrial power plants. The most important facilities which use steam generators delivered by the parent include power plants in Bełchatów, Opole, Turów, Dolna Odra, Rybnik (all owned by PGE), Pątnów-Adamów-Konin (all owned by ZE PAK), Koźienice (owned by Enea), and power plants owned by Tauron Wytwarzanie, as well as Warsaw CHP Plants – Elektrociepłownie Warszawskie



(owned by PGNiG Termika), Wrocław CHP Plants – Zespół Elektrociepłowni Wrocławskich Kogeneracja, Łódź CHP Plants – Zespół Elektrociepłowni Łódź (owned by Veolia), and the Zielona Góra CHP Plant – Elektrociepłownia Zielona Góra (owned by PGE).

In 2008, a 464 MW unit was commissioned at the Pątnów II Power Plant for which RAFAKO S.A., in cooperation with SNC Lavalin, had supplied the steam generator and flue gas desulfurisation (FGD) unit. The supercritical power generating unit at the Pątnów II Power Plant was the first project of this type in Poland, both in terms of the capital expenditure incurred and generating capacity delivered. It is a high-efficiency unit, which helps significantly reduce harmful gas emissions.

In 2011, an 858 MW unit was commissioned at the Bełchatów Power Plant for which a consortium made up of RAFAKO S.A. and Alstom had built the boiler island comprising a steam generator, electrostatic precipitator, and flue gas desulfurization unit. The newly built unit in Bełchatów is the most powerful lignite-fired generating unit in Poland.

The parent has also delivered circulating fluidised bed (CFB) steam generators to the Żerań CHP Plant (owned by PGNiG Termika), Bielsko-Biała II CHP Plant (owned by Tauron Wytwarzanie), Siersza Power Plant (owned by Tauron Wytwarzanie), Zakłady Farmaceutyczne Polpharma Starogard Gdański, Synthos Dwory 7 in Oświęcim, and further two to Kirka Borax and Mersin Soda Plants in Turkey.

In 2012, a fluidised bed boiler was commissioned at the Jaworzno Power Plant (the Tauron Group). The boiler is fired with biomass only, as opposed to coal-fired and biomass co-fired units already operated at the plant.

In 2014, a contract at the Stalowa Wola Power Plant for conversion of an existing PCC boiler into a biomass-fired unit was completed.

These innovative projects highlight the parent's established position as a supplier of renewable power generation technologies.

The parent is solidifying its position on the European market of waste incineration solutions. In 2011, RAFAKO S.A. supplied three heat recovery steam generators to a waste incineration facility in Turin, Italy, and further two heat recovery steam generators to Baku, Azerbaijan. In 2013, a steam generator was placed in service at a municipal waste incineration plant in Roskilde, Denmark.

In December 2017, a Thermal Waste Treatment Plant for the Szczecin Metropolitan Area was placed in service. The parent provided the process part for two lines of this plant.

The parent has also completed a number of contracts for the delivery of boilers for waste incineration plants in the United Kingdom.

- In 2014, it delivered a waste incineration boiler to Billingham, Cleveland;
- At the beginning of 2016, it supplied a municipal waste treatment boiler to Calvert, Buckinghamshire;
- In 2017, it delivered a waste incineration boiler (including assembly and start-up) to Hereford, Worcestershire;
- In 2018, it executed a project to deliver the pressure section for two boilers to a waste incineration plant in Kemsley.

The parent is a leading manufacturer of large environmental protection facilities in Poland. Such facilities have been delivered by the parent to the Jaworzno III Power Plant, Bełchatów Power Plant, Pątnów Power Plant, Ostrołęka B Power Plant, Dolna Odra Power Plant, Siekierki CHP Plant, Łódź CHP Plant, Siersza Power Plant, Skawina Power Plant, Trzebowice Power Plant (Czech Republic), Kozienice Power Plant, and Połaniec Power Plant.

In 2012, one of RAFAKO S.A.'s largest projects was commissioned: a wet flue gas desulfurization unit for the Siekierki CHP Plant (owned by PGNiG Termika S.A.). The unit is one of the largest environmental projects in Poland.



In 2014, the parent completed the upgrade of the FGD systems on units 5 and 6 at the Bełchatów Power Plant. In 2015 and 2016, wet FGD units were placed in service in Gdańsk, Gdynia, Kraków and Wrocław, as part of the EDF Group's comprehensive plan to bring its generation assets in compliance with new environmental requirements.

The proprietary semi-dry flue gas desulfurization unit engineered by RAFAKO S.A. is more cost-efficient than the wet method.

- In 2007–2008, the parent commissioned high-efficiency semi-dry flue gas desulfurization units at the Łódź CHP Plant and Skawina Power Plant;
- The same technology was also used for the construction of a new CHP plant for Grupa Azoty Zakłady Azotowe Kędzierzyn S.A., commissioned in 2017;
- In 2015, RAFAKO S.A. signed a contract with ENEA Wytwarzanie Sp. z o.o. for the construction of a semi-dry flue gas desulfurization unit for K7 and K8 boilers at the Białystok CHP Plant. The units were commissioned in September 2017, and final acceptance took place in March 2018.

In 2011, RAFAKO S.A. entered a new area of pro-environmental projects in the power sector, i.e. reduction of nitrogen oxides, as it commenced the manufacture of state-of-the-art SCR units on an EPC basis.

- Starting from June 2011, SCR systems were gradually deployed at units 4, 5, 6, 7 and 8 of the Koźienice Power Plant; the last system was commissioned in 2017.
- In 2012, a contract was signed with GDF SUEZ Energia Polska S.A. (currently Enea Elektrownia Połaniec S.A.) for the delivery of catalytic flue gas NOx reduction systems for five power generating units at the Połaniec Power Plant; The SCR systems for units 2, 3, 6, 7 were commissioned in 2016, and an SCR system for unit 4 was commissioned in 2018;
- In 2014, a consortium of RAFAKO S.A. and OMIS S.A. signed a contract with ENERGA Elektrownie Ostrołęka S.A. for the construction of flue gas NOx reduction systems for units 1, 2 and 3 at Elektrownia Ostrołęka S.A.; the common system for all units was completed in 2016, the separate system for units 2 and 3 was commissioned in 2017, and the last part of the project – the system for unit 1 – in September 2018.

In 2009, dust extraction equipment, including electrostatic precipitators and bag filters, was added to the parent's product offering. In 2010–2013, a number of electrostatic precipitators were put in operation, including at units 10, 4, 3 and 8 at the Koźienice Power Plant; at a BB-1150 steam generator of units 4, 5 and 6 at the Bełchatów Power Plant; as well as at unit 6 at the Tuzla CHP Plant. In 2014, two electrostatic precipitators were installed by the parent at the Westfalen Power Plant in Germany, and further two at the Eemshaven Power Plant in the Netherlands. In December 2016, RAFAKO S.A. completed the upgrade of an electrostatic precipitator at the Morava CHP Plant in Serbia. In December 2018, the electrostatic precipitator at unit 1 at the Ostrołęka Power Plant (the last part of the project to upgrade electrostatic precipitators at units 1, 2 and 3 at Energa Elektrownia Ostrołęka S.A.) was placed in service.

2014 was a breakthrough year for the RAFAKO Group. A contract was signed for the construction of a 910 MW power generating unit at the Jaworzno III Power Plant, where the RAFAKO Group will execute this turn-key contract on a practically stand-alone basis and, in terms of technologies, will supply the entire boiler island.

In February 2014, the long-awaited contract for the extension of the Opole Power Plant came into effect. Under the contract, two new supercritical 900 MW power generating units are being built in what is the largest project in the Polish power sector since 1989. The parent's entire scope of work and services under the contract was subcontracted to Alstom Power Sp. z o.o. (currently GE Power Sp. z o.o.).

The projects are based on the state-of-the-art technology of electricity generation in supercritical steam generators and turbines which increase the efficiency of generating units to 45% or more. In cooperation with Polish scientists, the parent is continuously working on developing generating units with efficiencies in excess of 50% (ultra-supercritical units).



In early 2017, RAFAKO delivered, on an EPC basis, a new CHP plant for Grupa Azoty Zakłady Azotowe Kędzierzyn S.A., comprising a coal-fired generating unit with a high-efficiency steam generator, state-of-the-art flue gas treatment technologies and a steam turbine.

Foreign sales account for a significant part of the parent's total sales. The largest steam generators manufactured by the parent for foreign customers operate in the power plants of the former Yugoslavian countries, and a number of large generators have also been delivered to the Czech Republic, China, Turkey, and India. The parent is also an important supplier of steam generator components in the European market. In 2018, the RAFAKO Group supplied such components to customers in Lithuania, Finland, Germany, Belgium, the United Kingdom, and other countries.

The parent is currently engaged in the execution of two major foreign contracts:

- Construction of a EUR 148m biomass-fired co-generation unit in Vilnius (Lithuania),
- Construction of two coal-fired steam units (2x50 MW) on Lombok Island, Indonesia, worth EUR 70m.

The parent provides after-sale support and servicing for all products and equipment supplied. RAFAKO S.A. also offers upgrades of existing equipment to enhance its operating parameters and mitigate negative environmental impacts.

In 2018, the parent decided to expand its business into EPC and general contractor services for the oil and gas sector in Poland and on foreign markets. These services are seen as a promising market given the expected multi-billion investments in this sector, mainly relating to the implementation of the energy policy objectives.

Certificates held by RAFAKO S.A. (EMAS, AD 2000-Merkblatt HP0, ASME CODE, EN 1090 and EN 3834-2) confirm its compliance with the requirements of ISO 9001:2015, ISO 14001:2015, PN-N 18001 standards, Directive 2014/68/EU and Regulation (EC) 1221/2009 of the European Parliament and of the Council. They also provide assurance to the parent's customers that RAFAKO-manufactured equipment complies with the technical safety requirements applicable in Poland, the EU, and the US.

In 2011, RAFAKO S.A. joined the PBG Group, whose parent is PBG S.A. The PBG Group operates on the market for specialist construction services. The key segments of the Group's business currently include the construction of facilities and structures for the power, natural gas, crude oil and fuel sectors. From June 2012, PBG was in company voluntary arrangement. In August 2015, the meeting of PBG's creditors voted on and approved the arrangement. In October 2015, the arrangement was approved by the court. The arrangement became final on June 13th 2016.

For the shareholding structure as at December 31st 2018, see Appendix 9.



## II. Organisation of the RAFAKO Group

### 1. Structure of the Group, and its consolidated subsidiaries

As at December 31st 2018, the RAFAKO Group comprised the parent and nine subsidiaries operating in the power construction, services and trade sectors. In addition to the parent, the RAFAKO Group comprised:

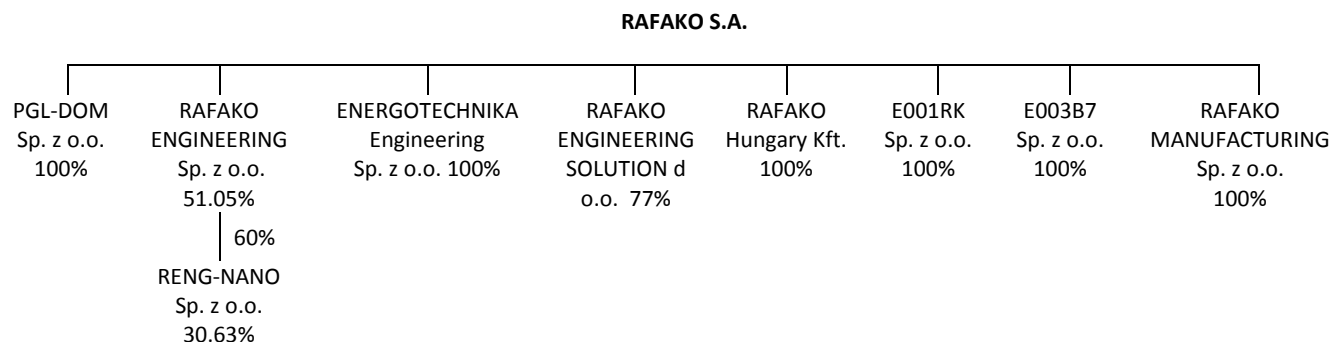




- Przedsiębiorstwo Gospodarki Lokalami PGL-DOM Sp. z o.o., registered office at ul. Bukowa 1, Racibórz, Poland. The parent holds a 100% interest in the company's share capital and the same percentage of voting rights. Principal business activity: housing community management.
- RAFAKO ENGINEERING Sp. z o.o., registered office at ul. Łąkowa 33, Racibórz, Poland. The parent holds a 51.05% interest in the share capital of the company and the same percentage of voting rights. The company is a provider of engineering services and related technical consultancy.
- ENERGOTECHNIKA ENGINEERING Sp. z o.o. of Gliwice. The parent holds a 100% interest in the share capital of the company and the same percentage of voting rights. Principal business activity: construction and process design, urban planning and engineering consultancy.
- RAFAKO ENGINEERING SOLUTION doo. of Belgrade; The parent holds a 77% interest in the share capital of the company and the same percentage of the voting rights. Principal business activity: process design, construction, industry, and environmental protection consultancy and supervision;
- RAFAKO Hungary Kft. of Budapest, Hungary. The parent holds the entire share capital of the company and all voting rights. Principal business activity: equipment assembly for the power sector and the chemical industry;
- E001RK Sp. z o.o. of Racibórz, entered in the National Court Register on October 9th 2013. The parent holds 100% of the company shares. Principal business activity: development of building projects; construction of roads and highways, railways and subways, bridges and tunnels; engineering activities and technical and scientific consultancy; production, repair and maintenance of machinery and equipment, generation and transmission of and trading in electricity. The company has been established to carry out the Opole Project;
- E003B7 Sp. z o.o. of Racibórz (or "SPV Jaworzno"), entered in the National Court Register on November 22nd 2013. The parent holds 100% of the company shares. Principal business activity: development of construction projects, construction, engineering and process consultancy and design. The company has been established to carry out the Jaworzno 910 MW Project.
- RENG-NANO Sp. z o.o. of Racibórz, entered in the National Court Register on February 27th 2017. A subsidiary of RAFAKO ENGINEERING Sp. z o.o., which holds a 30.63% interest in the share capital of the company and the same percentage of voting rights. Principal business activity: regeneration of SCR catalysts necessary for NOx reduction in gases; replacement, diagnostics, servicing and testing of catalysts.
- RAFAKO MANUFACTURING Sp. z o.o., established on July 4th 2018, wholly-owned by RAFAKO S.A. (the parent acquired 100% of the company shares for PLN 30,000). The company was registered with the National Court Register on July 9th 2018.



As at December 31st 2018, the following subsidiaries were consolidated in the Group's consolidated financial statements:



The RAFAKO Group's parent is PBG S.A., with its registered office at ul. Skórzewska 35, Wysogotowo, Poland.

## 2. Structure of the Group

As at December 31st 2018, the Group's share in total voting rights in the subsidiaries was equal to the Group's holdings in the share capital of these entities.

In the 12 months ended December 31st 2018, a number of changes occurred in the Group's structure.

On July 4th 2018, a notarial deed was signed under which a new company, RAFAKO MANUFACTURING Sp. z o.o., was established. The company's share capital is PLN 30,000 and is divided into 300 shares with a par value of PLN 100 per share. The shares were subscribed for by RAFAKO S.A. in exchange for a cash contribution. On July 9th 2018, the District Court of Gliwice, 10th Commercial Division of the National Court Register, entered RAFAKO MANUFACTURING Sp. z o.o. in the National Court Register under No. 0000739782.

## 3. Parent's governing bodies

The governing bodies of RAFAKO S.A.:

- General Meeting
- Supervisory Board
- Management Board

### General Meeting

The Annual General Meeting of RAFAKO S.A. held on June 26th 2018:

1. reviewed and approved the Directors' Report on the parent's operations and the parent's financial statements for the financial year 2017,
2. reviewed and approved the Directors' Report on the RAFAKO Group's operations and the RAFAKO Group's consolidated financial statements for the financial year 2017,
3. approved the report on the activities of the parent's Supervisory Board in 2017,
4. granted discharge to members of the parent's Management Board in respect of their duties in 2017,
5. granted discharge to members of the parent's Supervisory Board in respect of their duties in 2017,
6. decided that the parent's entire loss for the financial year from January 1st to December 31st 2017 would be covered from the statutory reserve funds.



## Supervisory Board

The Supervisory Board exercises ongoing supervision over the parent's business.

In the 12 months ended December 31st 2018 and by the date of this Directors' Report, changes were made in the composition of the parent's Supervisory Board.

- on October 30th 2018, Mr Jerzy Wiśniewski resigned as member of RAFAKO S.A.'s Supervisory Board. In the exercise of its special right referred to in Art. 17.3 and Art. 17.4 of RAFAKO S.A.'s Articles of Association, PBG S.A. (a shareholder) appointed Ms Helena Fic to the Supervisory Board as its Chair;
- on December 18th 2018, the Extraordinary General Meeting of RAFAKO S.A. appointed Mr Michał Sikorski to the Company's Supervisory Board.

As at the date of the financial statements, the composition of the supervisory body of RAFAKO S.A. was as follows:

Helena Fic	– Chairwoman of the Supervisory Board
Małgorzata Wiśniewska	– Deputy Chairwoman of the Supervisory Board
Przemysław Schmidt	– Secretary of the Supervisory Board (independent member)
Krzysztof Gerula	– Member of the Supervisory Board (independent member)
Dariusz Szymański	– Member of the Supervisory Board
Adam Szyszka	– Member of the Supervisory Board (independent member)
Michał Sikorski	– Member of the Supervisory Board

## Management Board

In the 12 months ended December 31st 2018 and by the date of this Directors' Report, changes were made in the composition of the parent's Management Board. On February 20th 2018, Krzysztof Burek resigned as Vice President of RAFAKO S.A.'s Management Board, and Karol Sawicki was appointed by the Supervisory Board as Vice President of RAFAKO S.A.'s Management Board. On October 30th 2018, changes were made to the parent's governing bodies, in the pursuance of the parent's strategy and as a consequence of internal reorganisation of RAFAKO S.A.:

- Mr Edward Kasprzak, Mr Tomasz Tomczak and Mr Karol Sawicki tendered their resignations as members of the Management Board of RAFAKO S.A.;
- The Supervisory Board decided that the parent's Management Board would be composed of three members.
- The Supervisory Board removed Ms Agnieszka Wasilewska-Semail from the position of President of the Management Board, appointing her as Vice President of the Management Board.
- The Supervisory Board appointed Mr Jerzy Wiśniewski to RAFAKO S.A.'s Management Board as its President.

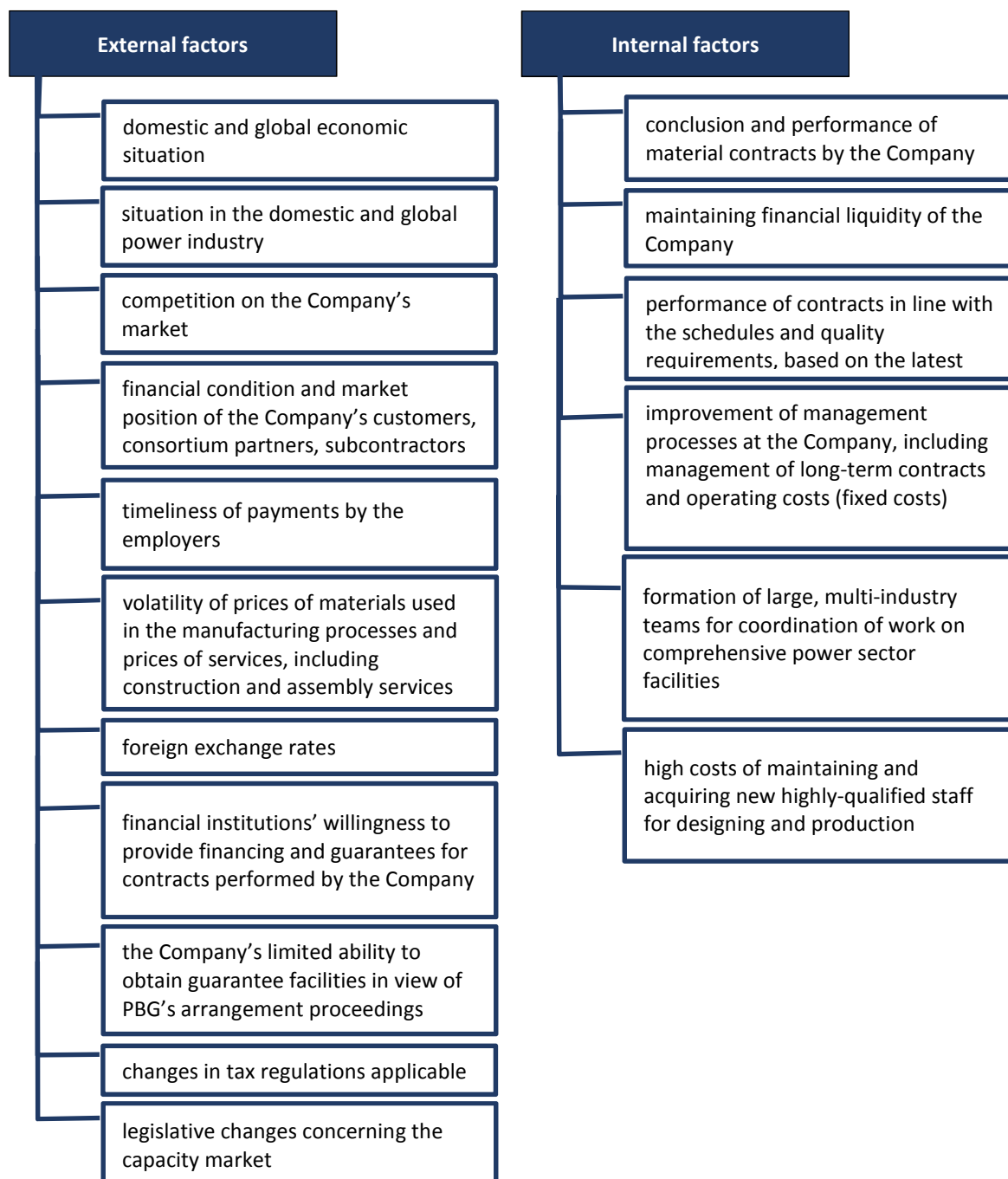
As at the date of this Directors' Report on the operations of the RAFAKO Group, the composition of the management body of RAFAKO S.A. was as follows:

Jerzy Wiśniewski	– President of the Management Board
Jarosław Dusiło	– Vice President of the Management Board
Agnieszka Wasilewska-Semail	– Vice President of the Management Board



### III. Economic and financial condition

#### 1. External and internal factors relevant to the RAFAKO Group's financial performance and development prospects





## 2. Key risks and threats

The RAFAKO Group has identified the following risks and threats to the Group's operations:

### Risks relating to macroeconomic conditions and the sector in which the RAFAKO Group operates:

Risk factors relating to the macroeconomic situation, including the GDP growth rate, unemployment rate, salaries and wages, growth of the industrial and construction output, and capital expenditure;

Risk relating to political environment, as well as energy policy and uncertainty over its future directions

Currency risk

Interest rate risk

Competition risk

Risk of an increase in market prices of subcontractors' services and materials

Risk of the EU reducing subsidies in areas of the Group's principal business activity

### Risks specific to the Group

Risk of delays in or improper performance of contracts by the Group companies

Risk of non-payment or delayed payment of amounts due under contracts performed by the Group companies

Risk associated with performance of high-value contracts and with the limited number of potential customers for the Group's products and services

Risk of increase in operating expenses resulting from higher prices of supplies and services and growing employee benefits expense

Risk of failure to correctly estimate project costs

Risk related to short tender submission deadlines

Risk inherent in acquisition and execution of projects in cooperation with suppliers and subcontractors

Risk inherent in execution of certain projects as part of consortia

Risk related to non-payment or partial repayment of arrangement receivables by PBG



- Risk of failure to secure sufficient external financing on terms expected by the Group (insufficient liquidity may result in less favourable financing and business terms)
- Risk of failure to implement the Group's strategy
- Reputational risk
- Risk related to the use by the Group companies of complex and innovative manufacturing technologies
- Lack of specialist qualifications and execution credentials
- The Company's day-to-day operations and growth depend on its senior management and ability to hire and retain highly-qualified personnel, particularly specialist production staff and engineers
- Risk of insufficient insurance cover
- Risk of consequences of accidents at work and occupational diseases
- Risk related to plant failure or to destruction or loss of the Group companies' assets.
- Risk of failure or security breach relating to the Group's IT systems
- Risk associated with potential differences in building and facility measurements between working documentation and construction plan
- Risk of restricted access to guarantee facilities in sufficient amounts limiting the ability to sign and perform contracts

### Regulatory risks

- Risk of changes in regulations in the power sector
- Risk related to changes in environmental laws
- Risk of changes in tax laws or their interpretation
- Risk inherent in related-party transactions
- Risk related to European Union requirements for coal policy

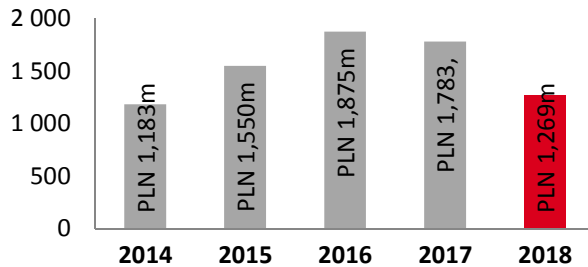
For information on the objectives and rules of financial risk management, including the specification of the most material risks, see Note 45 to the consolidated financial statements.



### 3. Analysis of key financial and economic data

#### 3.1 2018 highlights (compared with previous years)

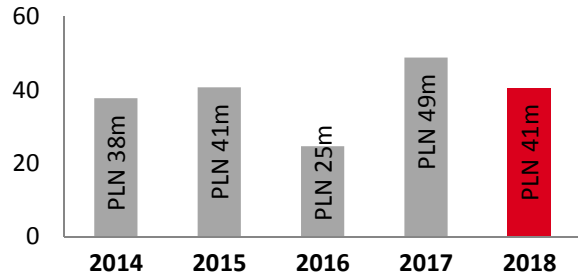
Revenue  
PLN 1,269m



**Definition:** Total revenue, net of VAT

**Relative to 2017:** Revenue decreased by 28.8%, mainly on lower sales under the Jaworzno 910 MW project.

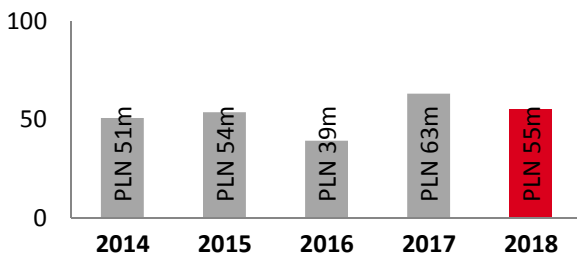
EBIT  
PLN 41m



**Definition:** Operating profit/(loss)

**Relative to 2017:** Profit from continuing operations amounted to PLN 41m, which is PLN 8m less than in the previous year, mainly as a result of lower revenue.

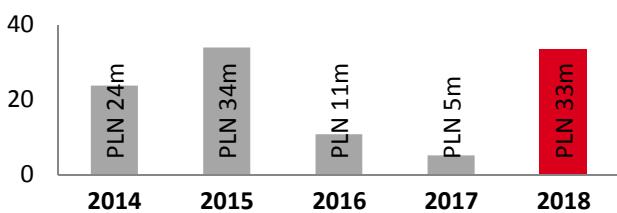
EBITDA  
PLN 55m



**Definition:** Total of profit/(loss) from continuing operations, depreciation and amortisation

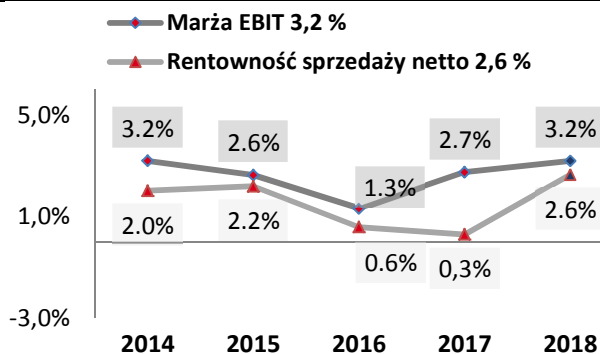
**Relative to 2017:** EBITDA declined from PLN 63m to PLN 55m.

Net profit  
PLN 33m



**Definition:** Excess that remains after deducting all costs. Difference between revenue and total costs.

**Relative to 2017:** In 2018, the Group generated net profit of PLN 33m, compared with PLN 5m in 2017.

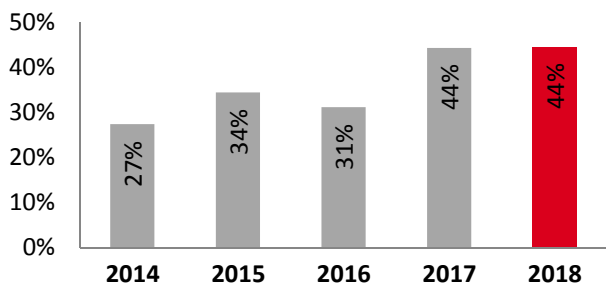


**Definition:** EBIT margin: operating profit/(loss) / net revenue; Net margin: net profit/(loss) / net revenue.

**Relative to 2017:** EBIT margin went up by 0.5%, and sales margin grew 2.2%, mainly driven by a higher gross margin and lower distribution costs and administrative expenses.

Marża EBIT 3,2%	EBIT margin of 3.2%
Rentowność sprzedaży netto 2,6%	Net margin of 2.6%

Share of equity in financing 44%



**Definition:** Equity / total assets.

**Relative to 2017:** The share of equity in the total financing of assets remained flat, at 44%.

RAFAKO GROUP



### 3.2 Revenue: amount and structure

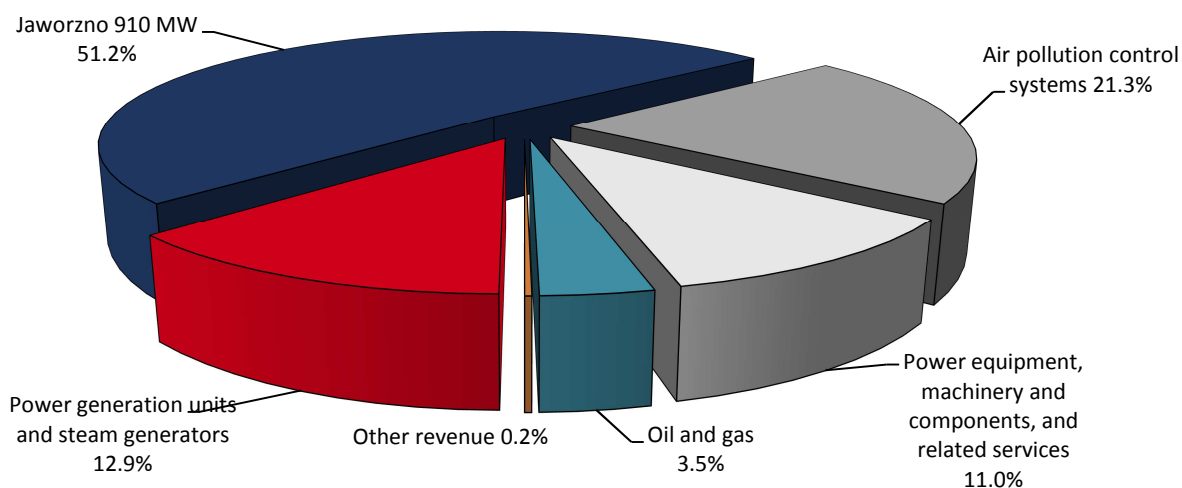
In 2018, revenue from sales of products, merchandise and materials was PLN 1,268,818 thousand, having decreased year on year by PLN 513,776 thousand (or 28.8%). Revenue from sale of products and services amounted to PLN 1,266,400 thousand, while revenue from sale of materials was PLN 2,418 thousand. The decrease in revenue in 2018 was mainly due to lower revenue from the Jaworzno 910 MW project, which went down by 47.3%, from PLN 1,232,078 thousand in 2017 to PLN 649,235 thousand in 2018. Sales grew in several product lines. The segment of power generation units and steam generators (excluding the Jaworzno 910 MW Project) delivered a sales growth of PLN 79,551 thousand (95%). A strong increase was also reported in sales of power equipment, machinery, components and related services, which rose from PLN 109,774 thousand in 2017 to PLN 139,146 thousand in 2018.

Due to much lower revenue from the Jaworzno 910 MW project, domestic sales dropped 39.2%, to PLN 987,689 thousand. In 2018, sales related to the Jaworzno 910 MW project accounted for 65.7% of revenue earned in Poland. With the 910 MW Jaworzno Project excluded, sales of power generation units and steam generators on the domestic market amounted to PLN 16,781 thousand, down 72% year on year. Sales of air pollution control systems in Poland amounted to PLN 269,038 thousand, up 5.7% year on year (from PLN 254,622 thousand in 2017). Sales of the oil and gas segment in Poland also went up, to PLN 20,782 thousand. The strong sales of air pollution control systems followed mainly from the performance of contracts signed by the parent with Enea Wytwarzanie Sp. z o.o. (construction of an SCR unit at the Kozienice Power Plant) and ENERGA Elektrownie Ostrołęka (FGD unit).

In 2018, export sales amounted to PLN 281,129 thousand, up PLN 122,469 thousand year on year. The share of export sales in total sales was 22.2%, having increased year on year by 13.3pp.

All product lines except for other revenue contributed to the stronger export sales. Sales of power generation units and steam generators amounted to PLN 146,480 thousand (PLN 23,674 thousand in 2017). The sales growth in this product category was mainly attributable to the contract for the construction of a biomass-fired co-generation unit for UAB VILNIAUS KOGENERACINE JEGAINE of Lithuania. Revenue from sales of power equipment, machinery, components and associated services totalled PLN 107,962 thousand and was 47.3% higher year on year. Sales in the natural gas and crude oil segment were PLN 23,452 thousand in 2018.

**In 2018, the Group's sales structure was as follows:**

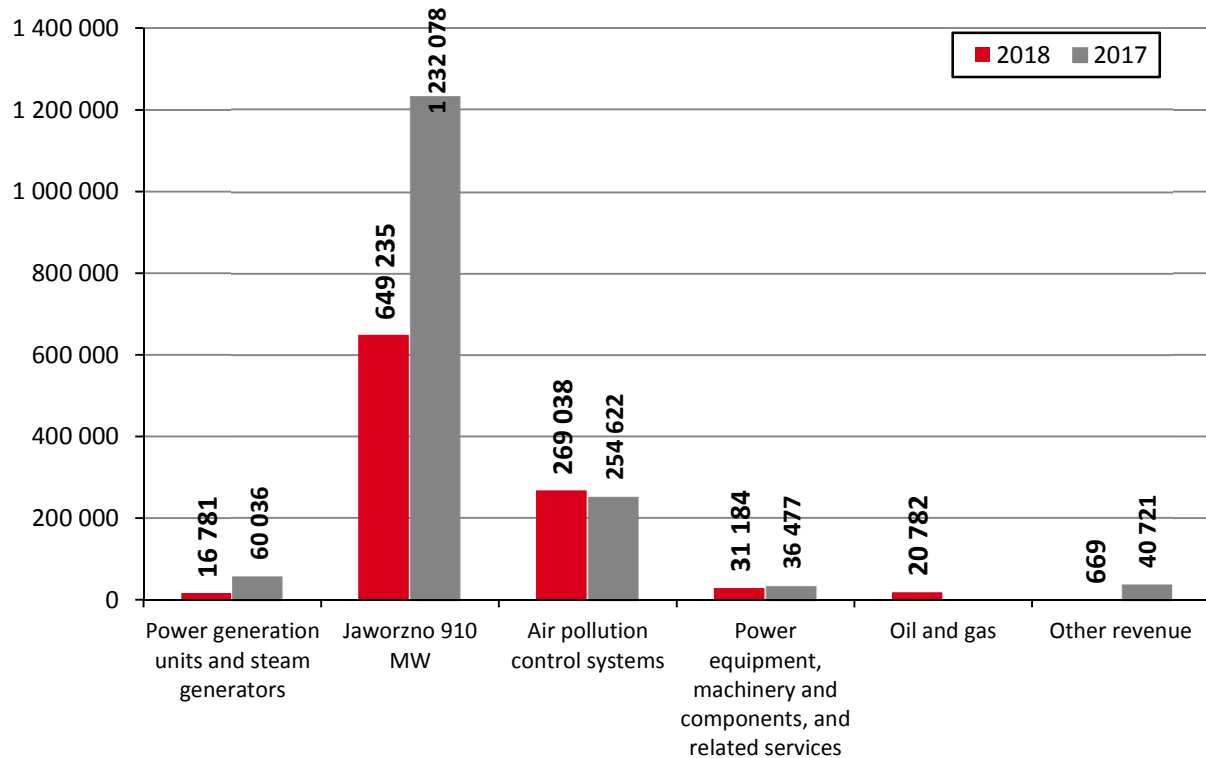




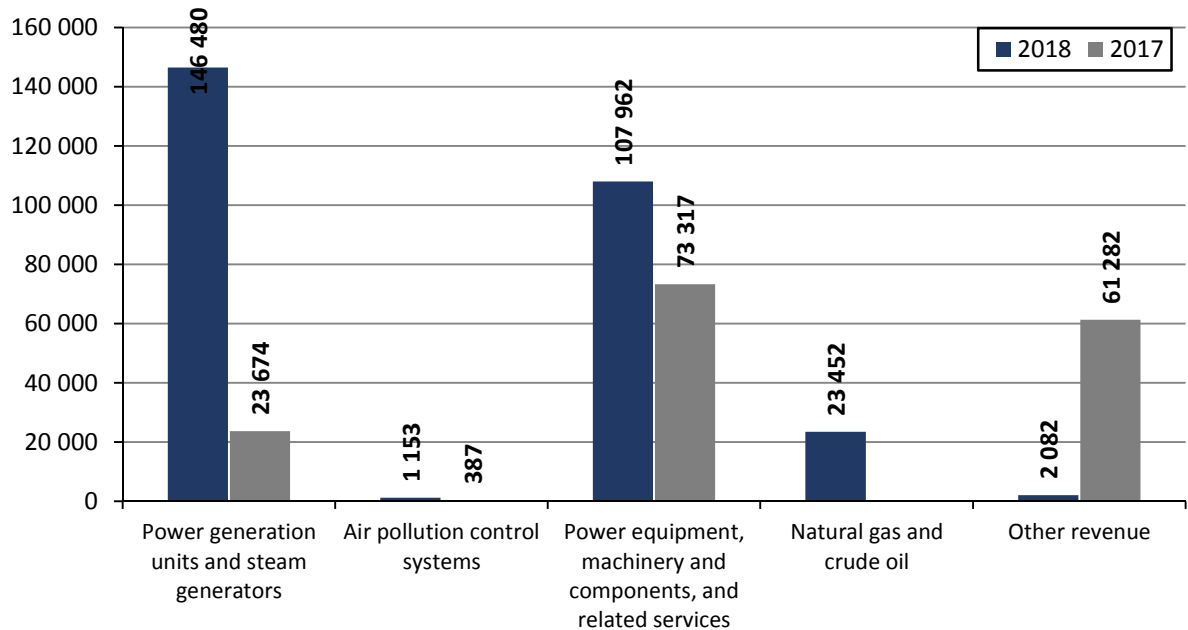


## Sales by market:

Domestic market (2018: PLN 987,689 thousand; 2017: PLN 1,623,934 thousand)



Foreign markets (2018: PLN 281,129 thousand; 2017: PLN 158,660 thousand)

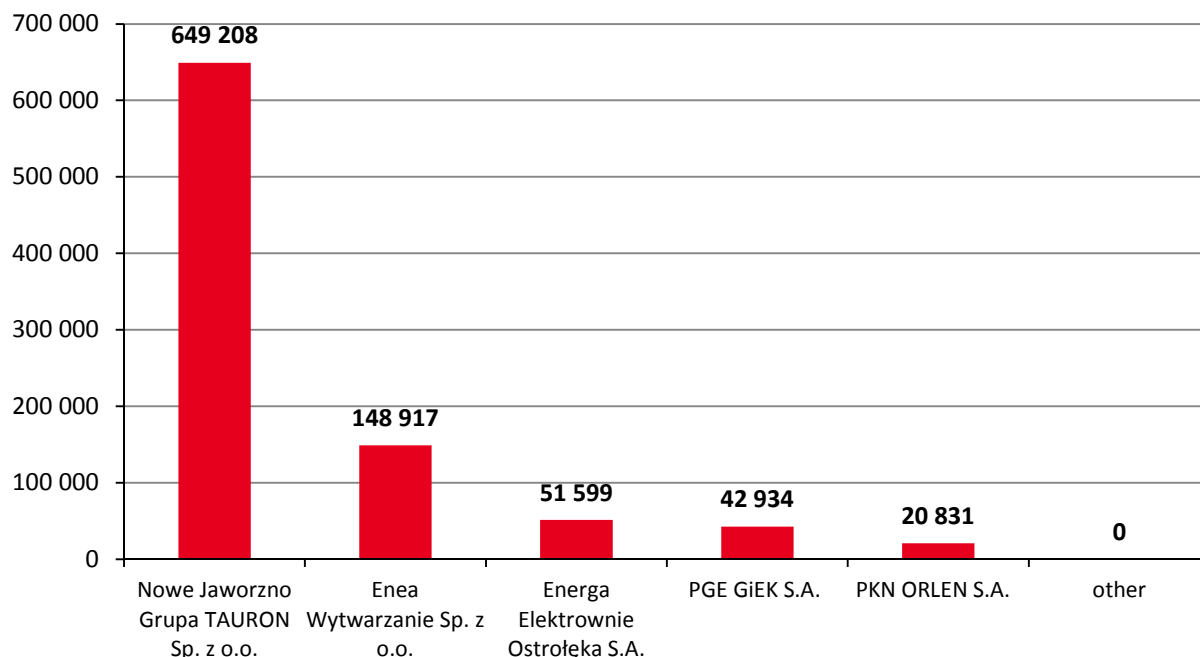


RAFAKO GROUP



In 2018, the RAFAKO Group's major customers included:

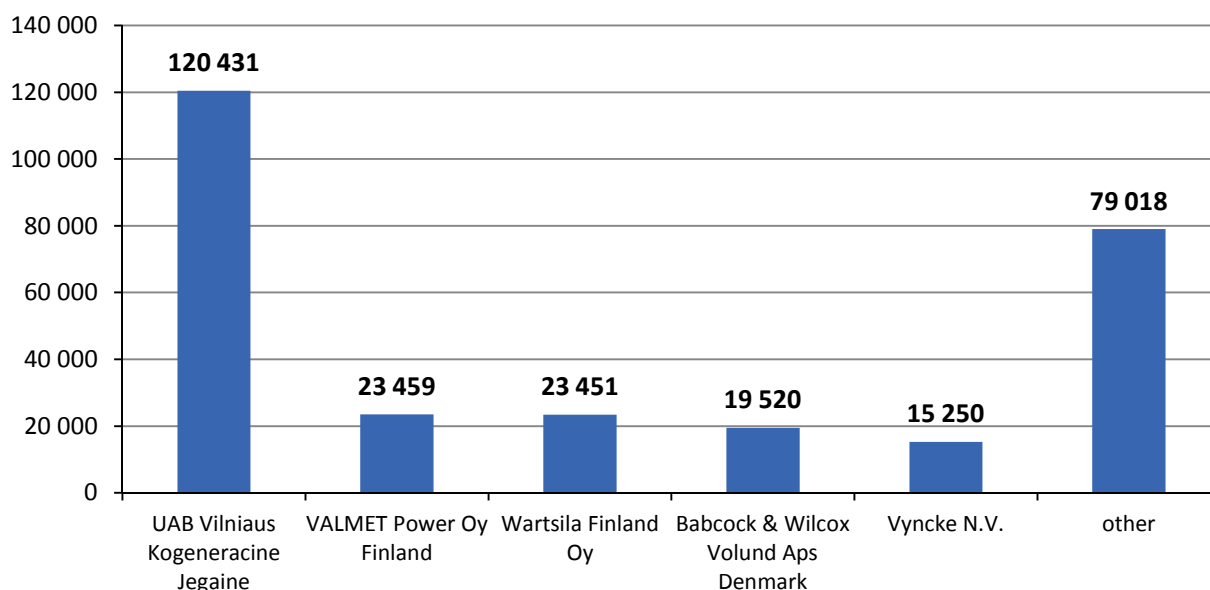
on the domestic market (PLN 987,689 thousand in total):



In 2018, the RAFAKO Group's main customer was Tauron Wytwarzanie Nowe Jaworzno, which accounted for 51.2% of total sales (69.2% in 2017). Revenue attributable to this customer was generated mostly in connection with the construction of a 910MW supercritical power generating unit at the Jaworzno Power Plant.

Also Enea Wytwarzanie Sp. z o.o. had a significant share in sales, at 11.7% of total sales in 2018 (9.4% in 2017). Revenue from sales to this customer was generated mainly on the construction of an SCR unit at the Koźienice Power Plant. Other significant customers were Energa Elektrownie Ostrołęka S.A. and PGE GiEK S.A., which accounted for, respectively, 4.1% and 3.4% of total revenue.

on foreign markets (PLN 281,129 thousand in total):



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The Group's key export customer was UAB Vilniaus Kogeneracine Jegaime based in Vilnius, with a 9.5% share in total sales. Sales to this customer involve the construction of a biofuel CHP plant unit made up of fluidised-bed boilers and a biofuel transport and feeding system (PLN 120,431 thousand in 2018).

Other significant export customers were Valmet Power OY of Finland and Wartsila Finland Oy, which accounted for, respectively, 1.8% and 1.8% of total revenue.

The Company delivers high value contracts, which may significantly increase the share of sales to a particular customer in total revenue.

The presented revenue data includes construction contract revenue accounted for using the percentage of completion method.

### 3.3 Deliveries, procurement and purchase of production materials

In 2018, the Group's main supply sources included:

Source	PLN '000			
	2018		2017	
	Value	Share in total purchases	Value	Share in total purchases
Domestic suppliers	805,361	91.2%	1,173,813	79.8%
Foreign suppliers	77,590	8.8%	296,685	20.2%
<b>TOTAL</b>	<b>882,951</b>	<b>100.0%</b>	<b>1,470,497</b>	<b>100.0%</b>

In 2018, the Company's supplier structure was highly fragmented as none of the suppliers represented more than 10% of the total value of purchases.

The Group relies on external suppliers for various services, delivery and assembly of machines and equipment, construction and installation services and transport, as well as pipes, metal sheets, shaped materials, welding materials and specialist equipment. The range of purchases depends heavily on the nature and requirements of the Group's projects. The availability of production materials, supplies or procurement services is not a significant limiting factor for the Group's business. Suppliers are chosen based on their ability to provide materials and equipment that meet the relevant technical and quality standards by specified deadlines and in the most cost-effective manner. The procurement process is based on market analysis, with the pool of suppliers including only manufacturers recognised for the quality of their products and compliance with the safety, environmental and other relevant standards.

With some contracts, the list of potential manufacturers and service providers must be approved by the Group's employers.

### 3.4 Related-party transactions

In 2018, the parent and its subsidiaries did not enter into any material related-party transactions on non-arm's length terms.

For a detailed list of related-party transactions in 2018, see Note 42 to the consolidated financial statements for 2018.

### 3.5 Amount and structure of operating expenses and gross profit/(loss)

In 2018, the cost of sales of products, services and materials totalled PLN 1,150,103 thousand which, on revenue of PLN 1,268,818 thousand, translated into a gross profit of PLN 118,715 thousand (down 25.5% year on year). Gross profit fell mainly due to lower sales.



The gross profit margin rose to 9.4%, from 8.9% in 2017.

Administrative expenses totalled PLN 51,903 thousand, having decreased by PLN 9,232 thousand year on year, mainly as a result of lower costs of external services performed at Group companies' request, as well as reduced personnel costs.

In 2018, distribution costs were PLN 24,413 thousand, having decreased by PLN 8,191 thousand year on year. The main reasons behind this decline were lower costs of bid preparation, lower costs of promotion and advertising, and lower salaries and wages.

After accounting for distribution costs and administrative expenses, the Group generated profit on sales of PLN 42,399 thousand in 2018, compared with PLN 65,573 thousand in 2017.

### 3.6 Other income and expenses and net finance income/costs

#### 3.6.1 Net other income/(expenses)

In 2018, the Group recorded net other income of PLN 4,283 thousand (2017: net other expenses of PLN 9,835 thousand), attributable to:

		<i>PLN '000</i>
1.	reversal of restructuring provision and provision for voluntary redundancy programme	5,857
2.	reversal of provision for other costs	2,813
3.	received grants	1,291
4.	sale of property, plant and equipment	914
5.	other income	1,857
6.	impairment losses on trade receivables	<i>(3,189)</i>
7.	repairs of property, plant and equipment	<i>(726)</i>
8.	cost of scrapping	<i>(569)</i>
9.	other expenses	<i>(3,965)</i>

Income from reversal of the restructuring provision is attributable to the completion of the reorganisation process.

#### 3.6.2 Research and development costs

In 2018, research and development costs were PLN 6,151 thousand, PLN 775 thousand less than in 2017. For a description of research and development projects, see section IV.5.

#### 3.6.3 Net finance income/costs

In 2018, the Group posted net finance income of PLN 2,645 thousand (2017: net finance costs of PLN 9,474 thousand), attributable to:

		<i>PLN '000</i>
1.	interest on financial instruments	6,871
2.	foreign exchange gains	1,054
3.	other finance income	545
4.	interest on financial instruments	<i>(4,387)</i>



5.	interest on employee benefits	(741)
6.	other finance costs	(697)

### 3.7 Income: amount and structure

In 2018, the RAFAKO Group recorded positive performance across all levels of the statement of profit or loss:

- gross profit was PLN 118,715 thousand, compared with PLN 159,312 thousand in 2017,
- operating profit amounted to PLN 40,531 thousand relative to PLN 48,812 thousand in 2017,
- net profit stood at PLN 33,469 thousand, compared with PLN 5,140 thousand in 2017.

The Group did not publish any financial forecasts or profit guidance for 2018.

*For the structure and change of consolidated pre-tax profit (loss) in 2018 and 2017, see Appendix 4.*

### 3.8 Margins and ROE

In 2018, the Group reported an improvement in its margins compared with a year earlier. Gross margin rose to 9.4% and was 0.5pp higher than in 2017, while operating profit margin amounted to 3.2% (compared with 2.7% in 2017).

With its net profit at PLN 33,469 thousand, the Group's return on equity (ROE) amounted to 5.6% (in 2017: 0.9%).

*The 2018 and 2017 profitability ratios are presented in Appendix 1.*

### 3.9 Financial liquidity

As at the end of 2018, the current ratio (current assets to current liabilities) decreased to 1.56, from 1.59 at the end of 2017. The current ratio is considered safe when it ranges between 1.2 and 2.0. The quick ratio (current assets net of inventories to current liabilities) also decreased, to 1.51, from 1.54 at the end of 2017.

Relative to 2017, in 2018 the average collection period for trade receivables lengthened by 12 days (to 82 days), while the average collection period for amounts due from customers for construction contract work was 57 days longer (108 days). The inventory turnover ratio rose from 6 days in 2017 to 11 days in 2018. The average payment period for trade payables was 26 days longer (96 days). The average payment period for amounts due to customers for construction contract work also lengthened, by 45 days (to 54 days).

The parent was able to maintain its financial liquidity chiefly due to the rigorous and consistent application of its rules of payment to subcontractors and efficient collection of receivables from customers.

The parent continued its multi-purpose credit facility agreement with PKO BP S.A., whereby the bank granted the Company a multi-purpose credit facility for the financing of its day-to-day operations. In June 2018, an annex to the credit facility agreement was signed, extending the availability period of the facility. For detailed information on the amendments, see section IV.3 'Other material events'.

The use of a bank credit facility and long-term lease contracts with interest rates based on the 1M WIBOR reference rate plus margin (the parent did not have any commercial borrowings) affects the borrowing costs. Any potential changes in interest rates on such instruments, or higher margins on credit instruments offered by banks, affect the level of the Group's finance costs, but did not pose any threat to its business in that period.

In terms of financial liquidity, the need to engage substantial cash to secure contract bonds (performance bonds and advance payment guarantees), provided mainly by financial institutions, is a significant burden on the parent.



Ultimately, the Group seeks to have all of its contractual obligations secured exclusively with financial guarantees (with assignment of receivables under the contract as security in respect of the Group's obligations towards financial institutions). Such security arrangements will allow the Group to freely manage its own financial resources and avoid using these resources directly as security, which will improve the Group's financial liquidity.

Access to new bank/insurance guarantees will be of paramount importance for the Group to be able to maintain liquidity. Unavailability of sufficient guarantee limits may restrict the Group's ability to win new revenue-generating contracts. In 2018, RAFAKO S.A. secured new guarantee limits totalling approximately PLN 110m.

The Group is also exposed to currency risk. Changes in PLN exchange rates, especially if frequent and significant, may materially affect both the profitability of contracts and the amount of currency translation differences on assets and liabilities denominated in foreign currencies and translated into PLN.

The strategy of currency risk management followed by the parent is to use natural hedging to the extent possible. The parent seeks to achieve the highest possible level of structural matching of income and expenses denominated in the same currency and related to running contracts. Apart from natural hedging, the parent may hedge between 30% and 70% of its net exposure to foreign exchange risk by means of approved derivative instruments (e.g. FX forwards) available on the market. In the second half of 2017, the parent entered into futures/forward transactions to hedge the USD/PLN exchange rate risk. As at December 31st 2017, the parent had open hedging positions for a total amount of USD 4m. The transactions were accounted for in the first half of 2018. In 2018, the parent did not enter into any new transactions hedging foreign exchange risk. As at December 31st 2018, none of the Group companies had any open hedging positions. The Group does not apply hedge accounting.

For the objectives and rules of financial risk management, see Note 45 to the RAFAKO Group's consolidated financial statements for 2018.

### 3.10 Debt

In 2018, the RAFAKO Group's liabilities towards its creditors increased by PLN 45,892 thousand. As at December 31st 2018, total non-current and current liabilities were PLN 760,186 thousand, compared with PLN 714,294 thousand as at December 31st 2017.

Under current liabilities, the greatest increase was recorded in amounts due to customers for construction contract work, which came at PLN 173,499 thousand (end of 2017: PLN 42,823 thousand). Trade and other payables fell from PLN 390,018 thousand in 2017 to PLN 342,508 thousand in 2018 and other short-term provisions decreased by PLN 20,644 thousand to PLN 15,151 thousand.

Non-current liabilities went down by PLN 22,100 thousand to PLN 69,531 thousand.

As at December 31st 2017, the Group's assets not encumbered with on-balance-sheet (non-current and current) liabilities amounted to PLN 597,335 thousand and were higher by 5.4% year on year (December 31st 2017: PLN 566,959 thousand).

The debt (non-current and current liabilities) to assets ratio, measuring the Group's ability to pay its debts with its assets, fell slightly, by 0.3pp year on year, to 56%.

The ratio does not take into account the Group's liabilities under bank and insurance guarantees provided on the Group's instruction (mainly performance bonds and advance payment guarantees, which are customarily used in the Group's operations and by manufacturers of power generation equipment), letters of credit and promissory notes issued as security.

*The 2018 and 2017 liquidity and debt ratios are presented in Appendix 1.*

### 3.11 Off-balance-sheet items

In the 12 months of 2018, the RAFAKO Group's contingent liabilities grew by PLN 59,733 thousand, which resulted from an increase in guarantees granted and promissory notes issued.

In the 12 months of 2018, a number of guarantees were issued by banks and insurance companies to trading partners upon the Group's instruction, including performance bonds of PLN 76,985 thousand, advance payment

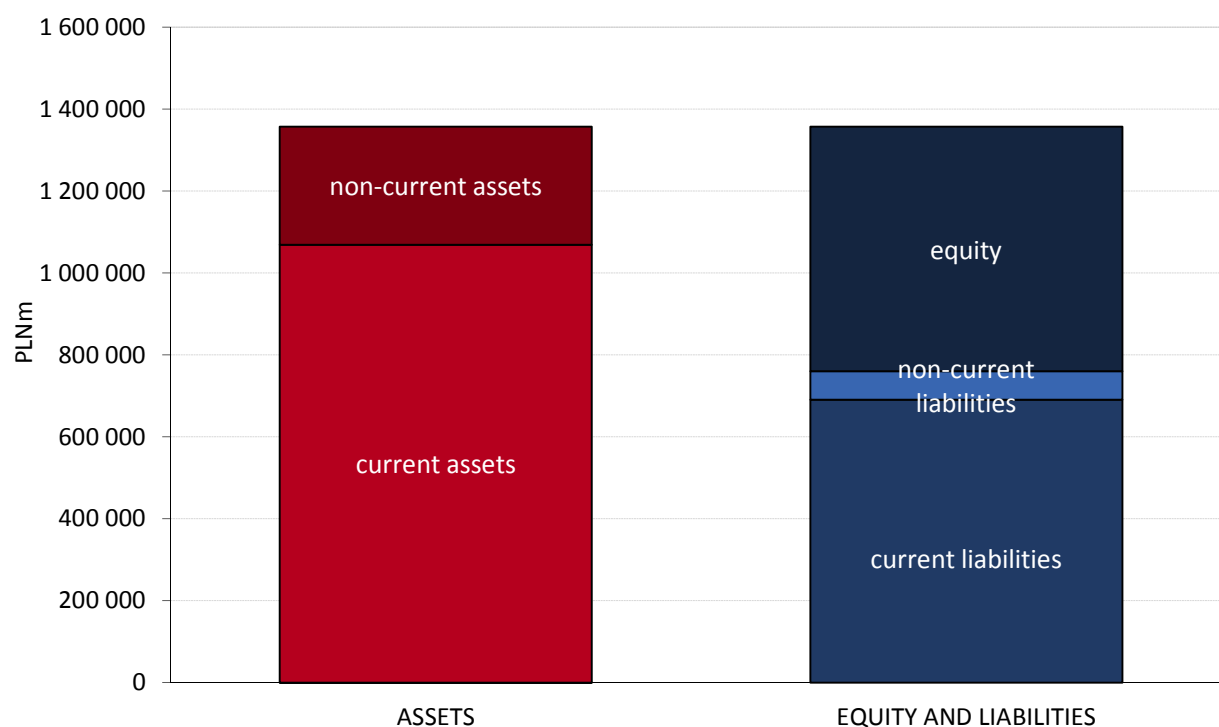


guarantees of PLN 68,569 thousand and bid bonds of PLN 64,405 thousand. The largest item of contingent liabilities was an advance payment guarantee of EUR 10,326 thousand issued in December 2018. As at the end of December 2018, liabilities under sureties were PLN 1,237,935 thousand. In this category of liabilities, the largest item was the sureties covering E003B7 Sp. z o.o.'s liabilities, issued by RAFAKO S.A. on April 16th 2014 and February 24th 2016 and valid until April 17th 2028, in connection with the project to develop new coal-fired generation capacities at TAURON Wytwarzanie S.A. – construction of supercritical 910 MW generating unit at the Jaworzno III Power Plant – Power Plant II. The largest item of guarantees which expired in the first twelve months of 2018 was a PLN 9,000 thousand bid bond.

In 2018, the Group's contingent receivables (mainly under performance bonds and advance payment guarantees) rose by PLN 84,168 thousand, including an increase of PLN 51,477 thousand in receivables under bank and insurance guarantees and an increase of PLN 32,691 thousand in receivables under promissory notes. The largest item of guarantees received in the 12 months of 2018 was a EUR 2,520 thousand advance payment guarantee. The largest guarantee which expired in the first twelve months of 2018 was a EUR 431 thousand advance payment guarantee.

For details of changes in contingent receivables and liabilities, see Note 38 to the consolidated financial statements for 2018.

### 3.12 Assets financing structure



As at December 31st 2018, total assets stood at PLN 1,357,521 thousand, having grown by PLN 76,268 thousand (6%) on December 31st 2017. The change was mainly driven by an increase of PLN 130,069 thousand in amounts due from customers for construction contract work, an increase of PLN 93,661 thousand in receivables under prepayments and advance payments, and an increase of PLN 26,351 thousand in retentions.

Cash and cash equivalents fell by PLN 91,599 thousand, to PLN 88,692 thousand, and trade receivables declined by PLN 59,806 thousand to PLN 289,027 thousand.

The share of equity in the financing of assets decreased slightly, by 0.3pp, relative to December 31st 2017, to 44%.



Long-term capital (equity plus non-current liabilities) covered the full amount of non-current assets (excluding assets held for sale) and 35.8% of current assets.

As at December 31st 2018, the assets financing structure was as follows:

1. non-current assets of PLN 282,022 thousand were fully financed with long-term capital,
2. current assets (and non-current assets held for sale) of PLN 1,075,499 thousand were financed with:

long-term capital	35.8%
trade payables	28.5%
short-term borrowings	9.6%
amounts due to customers for construction contract work	5.7%
other current liabilities	20.4%

### 3.13 Non-current assets

#### 3.13.1 Structure of non-current assets

The structure of non-current assets changed as a result of execution of investment projects, sale of assets, retirement or disposal of redundant property, plant and equipment, remeasurement of assets, and changes in the deferred tax asset. As at December 31st 2018 and December 31st 2017, it was as follows:

	Dec 31 2018	Dec 31 2017
1. Property, plant and equipment, including:	57.2%	58.8%
• land and buildings	38.4%	38.4%
• plant and equipment	15.8%	17.2%
• vehicles	2.6%	2.8%
• property, plant and equipment under construction	0.4%	0.1%
2. Intangible assets	6.1%	6.2%
3. Trade and other receivables	14.3%	13.6%
4. Shares	0.5%	0.1%
5. Other financial assets	5.0%	6.1%
6. Long-term accruals and deferrals	2.0%	0.6%
7. Deferred tax assets	14.9%	14.6%

The most important item of non-current assets was represented by land and buildings, which accounted for 38.4% of non-current assets and about 8.0% of total assets. Other significant items included plant and equipment, trade and other receivables and deferred tax assets. As at the end of 2018, they accounted for 15.8%, 14.3% and 14.9% of total non-current assets, respectively. Plant and equipment include mostly machinery, equipment and apparatuses used in manufacturing processes, as well as computer hardware.

In 2018, non-current assets fell slightly (by 2.9%) year on year, to PLN 282,022 thousand. The main item to record a decrease was property, plant and equipment, which went down by PLN 9,684 thousand to PLN 161,250 thousand at the end of 2018. Non-current prepayments and accrued income rose by PLN 4,054 thousand, to PLN 5,743 thousand.





### 3.13.2 Key investments in property, plant and equipment

In 2018, the parent incurred capital expenditure on non-financial non-current assets of PLN 5,294 thousand, including:

- PLN 4,578 thousand on property, plant and equipment,
- PLN 716 thousand on intangible assets.

Capital expenditure on property, plant and equipment primarily involved purchase of vehicles, plant and equipment and upgrades to buildings and structures.

Capital expenditure on intangible assets mainly involved purchase of new software for the Group's needs.

The expenditure was financed with internally generated funds and through leases.

### 3.14 Current assets

In 2018, current assets rose by PLN 84,759 thousand, to PLN 1,075,324 thousand. The change resulted mainly from an increase of PLN 130,069 thousand in amounts due from customers for construction contract work (primarily amounts due from customers for contract work), to PLN 381,352 thousand.

Receivables under prepayments and advance payments rose considerably, by PLN 93,661 thousand year on year, to PLN 125,618 thousand.

Cash and cash equivalents decreased by PLN 91,599 thousand, to PLN 88,692 thousand at the end of 2018 (end of 2017: PLN 180,291 thousand).

*For the list of loans advanced in 2018, see Appendix 7.*

### 3.15 Equity amount and structure

As at December 31st 2018, the RAFAKO Group's equity (including equity attributable to non-controlling interests) was PLN 597,335 thousand, up PLN 30,376 thousand year on year. Equity comprised:

1. Share capital of PLN 254,864 thousand, comprising 127,431,998 Series A, B, C, D, E, F, G, H, I, J and K ordinary shares. The share capital of RAFAKO S.A. remained unchanged in the 12 months of 2018;
2. Share premium of PLN 165,119 thousand (down PLN 8,589 thousand following transfer of net loss for 2017 to reduce share premium);
3. Statutory reserve funds of PLN 191,580 thousand;
4. Accumulated losses of PLN (-)22,642 thousand;
5. Exchange differences on translating foreign operations of PLN (-)73 thousand;
6. Equity attributable to non-controlling interests of PLN 8,520 thousand.

In 2018, the Group companies did not acquire their own shares.

### 3.16 Use of proceeds from the issue of Series K shares

In 2017, based on a resolution passed by the Extraordinary General Meeting of RAFAKO S.A. of September 12th 2017, the parent carried out a new share issue. Following the issue of 42,500,000 Series K ordinary bearer shares with a par value of PLN 2 per share, the parent's share capital increased by PLN 85,000 thousand.

Proceeds from the issue of Series K shares, totalling PLN 163,368 thousand, were used as follows:

- PLN 110,925 thousand – to finance contracts,



- PLN 41,081 thousand – to finance projects related to putting new products, including polygeneration islands, into production, and to finance projects related to gasification of waste and biomass,
- PLN 11,362 thousand – to finance R&D projects.

A total of PLN 163,368 thousand was used from the issue proceeds. Thus, the share issue of 2017 was accounted for in full.

#### 4. Human resources and workforce at the RAFAKO Group

In 2018, the average workforce at the Group was 2,025 employees, down 185 on 2017. The decrease occurred mainly at the parent and followed from the restructuring programme in place at RAFAKO S.A. The programme aims to adapt the level and costs of employment at the parent to the conditions prevailing on the parent's markets.

	Dec 31 2018	Dec 31 2017
<b>Employment structure at end of period</b>	<b>1,958</b>	<b>2,151</b>
production	781	854
design and engineering office	406	382
quality control	93	108
maintenance	71	73
other employees (financial and accounting, sales and procurement staff)	607	670

As at December 31st 2018, the Group's employees with university degree or secondary school diploma accounted for 72.3% of the personnel (December 31st 2017: 72.2%). The parent's Management Board recognises the importance of recruiting new, well-educated employees. As more than 90% of job positions at the Company require specialist knowledge, persons with specialist university degrees are given priority in the recruitment process. As at December 31st 2018, university graduates accounted for 48.9% of the personnel (up by 1.47% on December 31st 2017).

Employment structure at the Group at end of period	1,958
RAFAKO S.A.	1530
RAFAKO Engineering Sp. z o.o.	157
E003B7 Sp. z o.o.	126
Energotechnika Engineering Sp. z o.o.	100
Przedsiębiorstwo Gospodarki Lokalami PGL-DOM Sp. z o.o.	23
RAFAKO Engineering Solution doo.	10
RAFAKO Hungary Kft.	7
RENG – NANO Sp. z o.o.	3



The employee age structure slightly changed: The share of employees aged 30 or below was 11.8%, down 2.1% on 2017. Employees aged between 31 and 40 represented 23.8% (2017: 25.6%) of the total workforce, while the share of those aged between 41 and 50 increased by 1.0% to 27.4%. The share of employees aged 51 or more was 37.0% (2017: 33.9%).

In 2018, minor changes were observed in the workforce structure in terms of the length of service. Employees with a length of service of up to 10 years represented 23.2% of the entire personnel (27.1% in 2017), while 23.1% of employees had worked for 11–20 years (up by 3.0% on 2017). The proportion of employees with 21–30 years of service decreased slightly, to 16.6%. 37.1% of employees had been employed at the Group for more than 31 years. The Group's workforce has a long-standing and unique professional experience.

## 5. Other information

For the statement of compliance with corporate governance rules by the parent in 2018, see Appendix 9.

The parent took advantage of the exemption from the obligation to prepare a non-financial statement or non-financial report pursuant to Art. 49b.11 of the Accounting Act of September 29th 1994 (Dz.U. of 1994, No. 121, item 591, as amended). PBG S.A. of Wysogotowo, the parent of RAFAKO S.A., will publish a Group-wide non-financial report, which will include non-financial information of RAFAKO S.A. and its subsidiaries. The non-financial report of the PBG Group will be published on the website of RAFAKO S.A.

For information on the amount of remuneration, awards and benefits for members of the Management and Supervisory Boards, see Note 42.3 to the financial statements of the RAFAKO Group.

The parent has entered into a management contract with each member of the Management Board, which includes provisions on compensation in the event of dismissal or resignation.

A member of the Management Board who is for any reason removed from office during their contract term (except where such removal is caused by the member's failure to properly discharge their duties under the contract, or by wilful or negligent conduct adversely affecting the parent's business), or whose contract has been terminated or expired, is entitled to a one-off termination payment equal to their six months' remuneration.

Additionally, the parent will pay non-compete compensation to members of the Management Board, equal to 50% of their monthly remuneration, for six months following the date of removal, expiry of mandate or end of the notice period.

For information on the number of shares in the parent and related entities of the RAFAKO Group held by members of the Management and Supervisory Boards, see Note 42.4 to the financial statements of the RAFAKO Group.



#### IV. Key events and developments in 2018 and in the period from the end of the financial year to the date of the report

The key events and developments related to the activities of the RAFAKO Group are presented below.

##### 1. Contract with TAURON (Jaworzno Power Plant)

On April 17th 2014, RAFAKO S.A., acting as the leader of a consortium with Mostostal Warszawa S.A., executed a contract with Tauron Wytwarzanie S.A. for the construction of a power generating unit at the Jaworzno III Power Plant - Power Plant II. The value of the contract is PLN 4.5bn, VAT exclusive. The contract provides for the design and delivery, on a turn-key basis, of a supercritical 910 MW power generating unit consisting of a steam generator, turbine generator set, main building, and electrical and I&C systems.

The coal-fired unit will be one of the most advanced facilities of this kind.

Key parameters	Unit's components
<p>Supercritical pulverised-fuel, tower-type, once-through steam generator,</p> <p>Unit's nominal output (gross) – 910 MW,</p> <p>Generator's rated thermal input – 1,832 MWt,</p> <p>Rated capacity – 2,390 t/h,</p> <p>Temperature of steam at outlet (live/superheated) – 603/621°C,</p> <p>Pressure of live steam at outlet – 28.5 MPa,</p> <p>Pressure of superheated steam at outlet – 6.2 MPa,</p> <p>Efficiency in standard conditions &gt;95%,</p> <p>Availability &gt; 95%,</p> <p>Net generation efficiency &gt; 45.91 %.</p>	<p>Superheated steam generator,</p> <p>Steam turbine powering the electricity generator,</p> <p>Feed water pump system,</p> <p>Systems designed to meet the sulfur dioxide, nitric oxide and dust emission standards specified in the Industrial Emissions Directive (IED),</p> <p>Systems for disposal of combustion waste, as well as for delivery and preparation of various auxiliary media.</p>

The Jaworzno unit will be a high-efficiency base-load electricity generation facility operating within the power system. The operating life of the unit will be at least 200 thousand hours or 30 years.

##### Environmental implications:

According to the project owner's estimates, once the project is complete, sulfur dioxide emissions will be sixteen times lower than from the 120 MW units which are to be decommissioned, nitric oxide emissions will be more than five times lower, and dust emissions will be reduced eleven times. Carbon dioxide emissions will be cut by nearly two million tonnes a year.



## Key events in 2018 and 2019

2018	
March	Completion of installation of the membrane walls of the steam generator (to the extent necessary for hydraulic test of the generator).
April	Hydraulic testing of the generator and pipelines
June	Completion of installation of steam system and feedwater piping
July	Completion of installation of an Ionite Regeneration Station with a Condensate Treatment Unit
November	Completion of installation of a cooling tower with related equipment
December	Completion of installation of a turbine generator set and delivery of transformers
2019	
February	Completion of installation of an FGD unit

In its separate financial statements, RAFAKO S.A. recognises only revenue and expenses related to its own scope of work, i.e. 11.3% of the total scope of work to be performed on the Jaworzno 910 MW Project. In its separate financial statements, the Company does not recognise revenue and expenses related to the portion of work performed by E003B7 Sp. z o.o. The entire project is presented in the consolidated financial statements of the RAFAKO Group. By December 31st 2018, 86.5% of the Jaworzno Project's total value had been invoiced. For rules of accounting for the contract, see Note 10.1.1 to the consolidated financial statements.



## RAFAKO GROUP



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## 2. Contract with PGE Elektrownia Opole

In February 2012, RAFAKO S.A., acting as the leader of a consortium comprising RAFAKO S.A., Polimex-Mostostal S.A. and Mostostal Warszawa S.A. executed a PLN 9.4bn (VAT-exclusive) contract with PGE Elektrownia Opole S.A. (currently PGE Górnictwo i Energetyka Konwencjonalna S.A. – the “employer”) for turn-key design, delivery, construction, assembly, start-up and performance of all related services with respect to a facility consisting of power unit No. 5 and power unit No. 6 at PGE Elektrownia Opole S.A., together with equipment and devices as well as all related buildings and structures. The units, each with a capacity of 900 MW, will be fired with hard coal.

The subsidiary E001RK Sp. z o.o. (“SPV-Rafako”) was appointed by the parent as its subcontractor in charge of the entire scope of work and services related to the construction of the power generating units at Elektrownia Opole. SPV-RAFAKO’s consideration for the performance of the work and services is PLN 3.96bn (VAT exclusive).

On October 26th 2013, E001RK Sp. z o.o. (a company dedicated to the Opole Project, wholly-owned by RAFAKO S.A.) entered into a subcontractor agreement with GE Power (Ge Power Sp. z o.o; previously Alstom Sp. z o.o.). Under the agreement, E001RK Sp. z o.o. appointed GE Power as its subcontractor responsible for 100% of the work and services making up RAFAKO S.A.’s scope of work under the Opole Project.

Presentation of revenue and expenses under the contract has no effect on the amounts disclosed in the Group’s statement of comprehensive income.

For rules of accounting for the contract, see Note 10.1.2 to the consolidated financial statements.

On January 31st 2014, the consortium received from the employer a notice to proceed with the project execution.

On October 10th 2018, RAFAKO S.A., Polimex-Mostostal S.A., Mostostal Warszawa S.A., and GE Power signed with PGE Górnictwo i Energetyka Konwencjonalna S.A. annex No. 9 (the “Annex”) to the contract for the construction of power generating units No. 5 and No. 6 at the Opole Power Plant of PGE GiEK S.A. (the “Project”), performed by the Consortium and GE Power sp. z o.o., the general designer and consortium leader managing the execution of the Project.

Under the Annex, the deadlines for commissioning units No. 5 and No. 6 were changed to June 15th 2019 and September 30th 2019, respectively.

As part of subcontracting E001RK Sp. z o.o.’s scope of work, all legal consequences of the contract between RAFAKO S.A. and the employer, in particular those relating to performance bonds and, consequently, any potential contractual penalties resulting from, inter alia, failure to comply with the project schedule, passed to GE Power.

By December 31st 2018, 90.6% of Opole Project’s total value had been invoiced.



### 3. Other significant contracts

**April 11th 2018**

- A consortium of RAFAKO S.A. and PT. Rekalasa Industri (consortium leader) received a notice to proceed (NTP) from its Indonesian customer PLN PERSERO under a contract for the construction of two 50 MW coal-fired steam units on Lombok Island, Indonesia. RAFAKO S.A.'s contract is valued at EUR 70.28m (VAT exclusive). Commissioning is scheduled for April 2021.

**May 30th 2018**

- RAFAKO S.A. signed a contract with Operator Gazociągów Przesyłowych GAZ- SYSTEM S.A. for construction work under the project to construct the Goleniów-Płoty section of the DN 700 Szczecin-Gdańsk gas pipeline with auxiliary facilities and infrastructure necessary for its operation. The VAT-exclusive value of the contract is PLN 124.9m. The project completion deadline is 24 months from the contract date.

**July 24th 2018**

- RAFAKO S.A. signed a contract for the construction of flue gas desulfurization unit II at Ostrołęka Power Plant B by a consortium comprising RAFAKO S.A. (consortium leader) and ENERGA Serwis Sp. (consortium member). The consortium contract is worth PLN 199.25m (VAT exclusive), with RAFAKO S.A.'s VAT-exclusive share of PLN 126.25m. The project completion deadline is set at the earlier of 24 months from the contract date and June 30th 2020.

**July 31st 2018**

- RAFAKO S.A. and PGE GiEK S.A. signed a contract for comprehensive upgrade of the flue gas desulfurization systems at units No. 3, 4, 5 and 6 at the Bełchatów Power Plant of PGE GiEK S.A. The contract is valued at PLN 181.6m (VAT exclusive). The project completion deadline is scheduled for May 31st 2021.

**February 15th 2019**

- A consortium comprising RAFAKO S.A. PBG oil and gas Sp. z o.o. (consortium member) signed a contract with Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. of Warsaw for construction work under the project to build the Kędzierzyn Compressor Station. The VAT-exclusive value of the contract is PLN 168.7m, with the Company's share accounting for 95% of this amount. The time for performing the Contract is 25 months from its date.

**April 16th 2019**

- RAFAKO S.A. signed a contract for the construction of St. John Paul II MEMORY AND IDENTITY Museum in Toruń. The Company's bid is valued at PLN 117.7 (VAT exclusive). The project completion deadline is 100 weeks from the contract date.

**April 19th 2019**

- RAFAKO S.A. announced that the employer JWS KOKS S.A. had selected the Company's bid as the best bid in the tender procedure for the construction of a coke gas-fired power generating unit at JSW KOKS S.A.'s Radlin Coking Plant Branch under JSW KOKS S.A.'s energy efficiency improvement programme.



#### 4. Other material events

##### January 18th 2018

- Series K shares issued in November 2017 were registered by the Central Securities Depository of Poland (Krajowy Depozyt Papierów Wartościowych S.A.) and floated on the WSE main market (42,500,000 shares with a par value of PLN 2 and issue price of PLN 4.00 per share were issued).

##### April 27th 2019

- RAFAKO S.A. and HSBC Bank Polska S.A. of Warsaw (the Bank) executed a bank guarantee facility agreement. As of the date of the agreement, the Bank provided a bank guarantee facility, under which RAFAKO may instruct the Bank to issue guarantees up to the facility limit of EUR 20m. The facility may only be used to finance's day-to-day operations related to the performance of contracts by RAFAKO, in the form of guarantees issued upon RAFAKO's instructions.
- The following types of guarantees may be issued under the facility: bid bonds, advance payment bonds, performance bonds and warranty bonds.
- RAFAKO may use the facility only after it has meet all contractual requirements, including the requirement to create security interests that are customary for agreements of such type. The facility is a revolving facility, which means that whenever a guarantee issued by the Bank expires, the available facility amount is increased by the amount of the expired guarantee. The expiry date of a guarantee issued by the Bank must be a date falling on or before April 24th 2024.

##### June 29th 2018

- RAFAKO S.A. executed an annex to a credit facility agreement with Powszechna Kasa Oszczędności Bank Polski S.A. of Warsaw. The annex provides for the multi-purpose credit facility amount of up to PLN 200m, including an overdraft facility of up to PLN 70m, a working capital facility of up to PLN 80m, bank guarantees available on the terms laid down in the agreement, and a revolving working capital facility up to PLN 150m to finance payments (if any) under exercised bank guarantees issued by PKO BP. The annex extended the facility's term and maturity date until June 30th 2019.
- The annex includes a condition that if in 2018 RAFAKO S.A. does not add PLN 900m net of VAT in new contracts to its order book, to be reviewed as at January 31st 2019, PKO BP will be entitled to reduce the amount of the overdraft facility by the percentage by which the new order book falls short of the assumed value, rounded to the nearest million.
- The other terms and conditions of the credit facility agreement were not materially amended under the annex.
- For more details on the credit facility agreement, see Note 31 to the financial statements.

##### July 31st 2018

- Another stage of the Company's reorganisation, aimed at building a flexible and more cost-effective organisation, adapted to current market condition, was completed. As part of the reorganisation, employment was reduced and optimisation measures were taken covering the operations of the entire organisation.
- The staff reduction implemented as part of the reorganisation process did not exceed 276 FTEs, as previously agreed with the trade unions.
- The costs of the reorganisation did not exceed the additional provision recognised for this purpose.

##### December 4th 2018

- RAFAKO S.A. signed an annex with HSBC Bank Polska S.A. of Warsaw, increasing the limit on bank guarantees to EUR 24.5m (by EUR 4m).





## 5. Research & development and quality improvement projects

In the course of its R&D activity, the Group companies cooperate with institutions of science education, especially with the Wrocław University of Technology, Silesian University of Technology, Cracow University of Technology, AGH University of Science and Technology, Institute of Fluid-Flow Machinery of the Polish Academy of Sciences, Stanislaw Staszic Institute for Ferrous Metallurgy, the Polish Institute of Welding, and other research and scientific institutions. Key initiatives in this area rely on cooperation with a number of entities as part of projects commissioned by the National Centre for Research and Development and by InnoEnergy – Knowledge & Innovation Community.

The Company's research and development activity has two directions: improvement of the products in the current offering and search for completely new products for new markets.

The former seeks to ensure that the Company keeps pace with emission reduction requirements. Design methodologies for NO<sub>x</sub> reduction units and a technology for revamping 200 and 360 MWe units were developed in 2018 with a view to creating innovative low-emission coal-fired plants as a source of standby capacity.

The research and science projects aimed at developing new products include:

- CO<sub>2</sub>-SNG – CO<sub>2</sub> methanation for storage of cheap, surplus energy through SNG production (with InnoEnergy's co-financing);
- Polygen – a municipal polygeneration system fired with biomass and refuse-derived fuel (financed by InnoEnergy);
- 200+ units programme – an innovative technology changing the operational regime of 200 MWe power generating units;
- Shockwave – shockwave technology (low input, comprehensive technology for removing components covered by emission restrictions from flue gas produced by steam generators);
- Mercury concentration in flue gas treatment media – examination of the degree of mercury precipitation in flue gas treatment systems;
- E-bus – an innovative small urban electric bus.

The technologies available to RAFAKO S.A. allow it to continuously increase production capacities and the range of services provided, improve the quality of its products, and reduce the costs of operations.

## 6. Other information

The Group companies did not launch any employee share option schemes.

On March 27th 2018, the parent's Management Board resolved to commence the liquidation of RAFAKO S.A.'s Branch in Turkey. The Branch was struck off the Turkish Business Register on December 14th 2018.

In 2018, there were no changes in the basic management policies applicable at the RAFAKO Group.

For information on the agreement with the qualified auditor of financials statements, see Note 44 to the consolidated financial statements.

## 7. Disputes, pending litigation, arbitration or administrative proceedings

For information on material disputes and litigation, see Note 37 to the consolidated financial statements for 2018.




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## V Growth prospects

### 1. Energy policy

#### The energy market

The Group's core market is the domestic and international energy market.

This market, and its commercial segment in particular, are heavily regulated in terms of their current organisation, future development and structure in the context of the increasingly stringent environmental protection standards. The regulated nature of the industry follows from the power market's strategic importance to the energy security of every country, with environmental protection and reduced CO<sub>2</sub> emissions becoming a global priority in international relations. Such regulations include both the legislative framework and general objectives of the national and EU-level energy policies in terms of environmental protection.

Because of the introduction of more stringent environmental protection standards, businesses generating flue gases, such as CHP plants and power plants, are required to upgrade their existing units and install new equipment to reduce air emissions. As a result, the number of new projects in the power segment is growing, including construction of low-emission, high-efficiency power plants and upgrades to the existing energy sources to ensure their compliance with the strict environmental requirements imposed under EU laws, which stimulates demand for the products and services offered by the RAFAKO Group.

The EU's energy policy is formulated by Member States as well as EU institutions. The legal basis for the energy policy is the Treaty on the Functioning of the European Union. Under the Treaty of Lisbon, key objectives of the EU's energy policy are to:

- Ensure the functioning of the energy market;
- Ensure security of energy supply in the Union;
- Promote energy efficiency and energy saving and the development of new and renewable forms of energy;
- Promote the interconnection of energy networks.

The current energy policy provides for a comprehensive and integrated approach to energy and climate policy. In 2014, the heads of EU Member States and governments set the following goals:

- Greenhouse gas emissions reduction by 2030 by at least 40% compared with 1990,
- Increasing the share of renewable energy to at least 27% of the EU's energy consumption,
- Increasing energy efficiency by at least 27% (indicative) in 2030.

In November 2016, the European Commission presented a package of measures (Winter Package) to keep the European Union competitive as the clean energy transition is changing the energy markets.

On July 31st 2017, the European Commission issued a communication on Best Available Techniques for large combustion plants (BAT LCP), i.e. those whose capacity is above or equal to 50 MW. BAT conclusions will be binding for a number of power plants and CHP plants in Europe, and thus in Poland. BAT conclusions provide a reference for setting emission and monitoring standards in integrated permits under which combustion plants operate. The deadline for ensuring compliance with the BAT conclusions is four years from the date of their publication in the Official Journal of the European Union, i.e. mid-2021.

The key legal act regulating the operation of the Polish energy sector is the Energy Law. It lays down the rules governing the development of the energy policy, the rules and conditions for the supply and use of fuels and energy, including heat, and operation of energy companies.

Poland's Energy Policy until 2040, prepared by the Ministry of Economy, plays a major role in setting the development directions for the energy sector. The objectives set out in the draft document include:

- 60% share of coal in electricity generation by 2030;



- 21% share of RES in final gross energy consumption by 2030;
- implementation of nuclear power generation by 2033;
- 30% reduction in CO2 emissions by 2030 (relative to the 1990 level);
- 23% increase in energy efficiency by 2030 (relative to the 2007 primary energy forecast).

The need to diversify the structure of electricity generation will contribute to reducing the share of coal in Poland's energy mix, but in absolute (quantitative) terms a major shift in the use of coal as a fuel by commercial power plants in the next decade or so is unlikely.

Utilisation of non-agricultural waste for energy generation should increase, with sludge, industrial waste meeting the statutory definition of hazardous waste (including hospital waste) and municipal waste offering the biggest potential.

At the beginning of January 2016, a Transitional National Plan (TNP) was introduced in Poland under a regulation of the Minister of Environment of July 2015. The Plan is designed to implement the provisions of the Industrial Emissions Directive of the European Parliament and of the Council of November 2010 (IED) into the Polish legal system. The Directive introduces mechanisms that make it possible to postpone compliance with the obligation to apply new emission limits for sulfur dioxide, nitrogen oxides and dust (derogations). Derogations provide the operators of energy installations with time to complete investment projects designed to technically adapt them to the more stringent emission requirements. One of the mechanisms introduced by the IED is the Transitional National Plan, applicable in the period from January 1st 2016 to June 30th 2020. During that period, the installations covered by the Plan will have to meet the relevant emission ceilings set for each year.

In 2016, the President of Poland signed the Energy Efficiency Act, which implements EU regulations into Polish law to further improve the energy efficiency of the Polish economy. The Act came into force on October 1st 2016. Under the Act, certain entities are required to conduct an energy efficiency audit every four years. The energy efficiency audit is a procedure whose purpose is to carry out detailed and validated calculations with regard to proposed implementation of projects contributing to an improvement in energy efficiency and to provide information on potential energy savings.

On December 6th 2017, the Sejm (lower house of the Polish Parliament) enacted the Capacity Market Act. The capacity market is expected to guarantee the availability of sufficient demand-driven capacities of electricity-generating sources. The purpose of the new legislation is to address the generation capacity shortages resulting from an expected increase in peak demand for capacity and electricity on the one hand, and from considerable number of generating units scheduled for decommissioning on the other hand. The Act introduces a new model for a centralised capacity market. In this model, a central buyer (the transmission system operator) acquires an obligation from capacity providers to provide, and keep ready to provide the system with sufficient capacity in certain situations. This capacity obligation is offered by capacity providers: generators, energy storage facilities and some electricity consumers, as well as entities representing groups of generators or consumers (so-called aggregators), in auctions.

On June 29th 2018, the President of Poland signed a government bill to amend the Renewable Energy Sources Act. The new provisions regulations are expected to enable a more effective utilisation of renewable energy sources and meeting of international obligations. The main objective of the amendment is to ensure full compatibility between the provisions of the Renewable Energy Sources Act of February 20th 2015 and the state aid legislation, to which Poland has committed itself to the European Commission in the notification procedure, and to bring the regulations in line with EU requirements.

### Oil and gas market

In line with its strategy adopted in early 2018, the Group also intends to focus on the oil and gas sector, both in Poland and on an international scale. This is seen as a promising market in view of the expected multi-billion investments in this sector, mainly relating to the implementation of Poland's energy policy objectives. The projects include but are not limited to the construction of gas stations, transmission pipelines, underground gas storage facilities, and gas compressor stations for the construction of natural gas and oil production facilities.



The demand for natural gas will be growing as it can be used as fuel in power plants and generates lower emissions relative to other fossil fuels.

The gas market in Poland is regulated by the Energy Regulatory Office. In line with its decision, Gaz-System S.A. has been and will be the Transmission System Operator in Poland from October 2010 until the end of 2030. Its main task is to develop the existing transmission system to ensure the long-term ability of the gas system to meet the legitimate needs for transmission of gas fuels in domestic and cross-border trade by expanding the system and, where applicable, by expanding interconnections with other gas systems.

Diversification of gas supply directions and sources is to be achieved through the following two key projects:

- construction of the Northern Gate,
- expansion of connections with the neighbouring countries.

This will create favourable conditions for developing a gas transmission and trade centre in Poland for CEE and Baltic countries.

An expansion of the national network and storage infrastructure is also necessary. The expansion of the national gas transmission system in the coming years (until 2022, with a perspective until 2027) focuses on developing the network:

- in the western, southern and south-eastern parts of Poland (from Świnoujście to connections with the Czech Republic, Slovakia and Ukraine),
- in the north-eastern part of Poland (to the connection with Lithuania).

Another aspect of the national network development is the expansion of distribution facilities. At present, Poland's gas grid coverage is 58%. The rate is planned to be increased to 61% by 2022. Particular emphasis has been placed on covering the areas which are currently off the gas grid. In the long term, the distribution network will be developed and upgraded in line with market needs. Where it would be unreasonable to lay a gas pipeline, LNG regasification stations will be used to supply gas to distribution zones off the grid.

Currently, seven underground gas storage facilities cooperating with the existing transmission system are used in Poland, Gas Storage Poland Sp. z o.o., wholly-owned by PGNiG S.A., acts as the storage system operator for all storage facilities.

Additionally, Gaz-System S.A. owns 15 gas compressor stations, which are linked to the transmission network and located all over Poland. Five more compressor stations are located on the Polish section of the Yamal pipeline and operated by EuRoPol GAZ S.A.

In the coming years, the infrastructure in this area is going to be expanded both in Poland and in Europe.

The oil market involves mostly crude oil transmission, storage, distribution and trading.

Most fuel pipelines in Poland are owned by PERN S.A., a state-owned joint-stock company. In the near future, further development of the pipeline network and expansion of crude oil storage capacities are to be expected.

## 2. Investment plans

According to the conclusions from forecast analyses performed for the purposes of Poland's Energy Policy until 2040, demand for electricity in Poland is expected to grow. Poland's economy consumes nearly 170 TWh of electricity, with imports and exports used for balancing purposes. The installed capacity in the National Power System exceeds 41 GW, of which more than 32 GW is attributable to main activity power plants (using mainly hard coal and lignite as fuel). More than 6.4 GW of the installed capacity is based on RES (mainly wind farms), with the balance (approximately 2.6 GW) attributable to autoproducer power plants (using various fuels). In the next dozen or so years (especially after 2029) a significant part of the currently operated generating units will be decommissioned. This process is driven by the wear and tear of power generating units and tightening of the EU



environmental standards. The increase in demand for electricity will be covered by sources other than conventional hard coal- and lignite-fired power plants. To meet the growing demand for electricity, in view of the significant decommissioning prospects, the capacity market has been implemented as an investment stimulus to ensure the stability of supplies.

Factoring in the phase-out of existing capacities in the Polish power system, the maximum net capacity of the country's generating units is expected to increase to 46.4 GW or so in 2030. A capacity decline is expected for coal-fired power plants, while the capacities of renewable energy power plants (mainly wind, biogas and biomass-fired power plants) and nuclear power plants are expected to increase.

The PGE Group is implementing two major investment projects: construction of new units at the Opole Power Plant (2x900MW), and construction of a 450 MW lignite-fired unit at the Turów Power Plant. In the longer term, the company is contemplating the construction of two new gas-fired 700 MW CCGT units at the Dolna Odra Power Plant.

The Tauron Group has been building a 910MW unit at the Jaworzno Power Plant and a 450MW combined-cycle unit at the Stalowa Wola CHP Plant. In addition, the company invests in distribution activities, connecting new customers and generating facilities to the network, And plans to implement projects involving improvements in safety and quality of electricity supply to customers.

The Enea Group and the Energa Group are building the 1,000 MW Ostrołęka C Power Plant. Moreover, Enea is carrying out a feasibility study for the construction of a 540 MW IGCC unit near Bogdanka. Enea is also working on a feasibility study for an RDF-fired power generation unit which would replace the existing 200 MW unit in Połaniec, for which derogation has been obtained. The Group's expenditure on upgrading production assets in 2019–2023 is projected to reach approximately PLN 1bn, of which approximately PLN 500m will be spent on harmonisation with BAT conclusions. In 2019–2023, power generating units with a total capacity of 4,700 MW are to be upgraded, of which 2,046 MW are to be upgraded in 2019–2021.

Apart from the construction of Unit C at the Ostrołęka power plant, the Energa Group announced an invitation to tender for the construction of a new 450–750 MW CCGT unit in Grudziądz.

The programme for construction of municipal waste incineration plants, launched in 2007 and included on the Indicative List of the Ministry of Regional Development under the Operational Programme Infrastructure and Environment, envisaged the construction of 12 municipal waste incineration plants: in Szczecin, Koszalin, Poznań, Gdańsk, Olsztyn, Białystok, Bydgoszcz, Łódź, Warsaw, Kraków and two facilities in Silesia. Currently, there are already 7 waste incineration plants in operation in Poland (in Warsaw, Białystok, Bydgoszcz, Konin, Kraków, Poznań, Szczecin). Further local governments (including but not limited to those in Gdańsk, Olsztyn, and Wrocław) are contemplating the construction of such facilities.

Also the PGNiG Group has plans to invest in generation capacity (through Polska Spółka Gazownictwa). Some of the funds will be allocated for the connection of new users, construction of new and upgrades of existing gas distribution networks, connection of new areas to the gas network, investments in infrastructure accompanying the development of gas distribution networks, such as communication, metering, ICT. The projects will include the construction of LNG regasification stations in the Grajewo, Mońki, Augustów, Czyżew and Hajnówka municipalities. Further, the Białystok gas pipeline will be redeveloped and a gas distribution network will be built in Bielsko Podlaskie.

Gaz-System plans capital expenditure of PLN 11bn in 2019–2022. In the 2020–2029 Development Plan, Gaz-System envisages more than 30 major projects, which will increase the length of the national transmission network from 11,000 km to approximately 14,800 km. The document sets two time horizons: until 2023 and until 2029. In the first one, the ongoing investment programmes defined in the previous plan for 2018–2027 are to be continued. The programmes include in particular those related to diversification of natural gas supplies to Poland, that is the Baltic Pipe programme, expansion of the LNG terminal in Świnoujście, construction of a connection with Lithuania, and construction of the North-South Corridor, which includes opening a connection with Slovakia. The second time horizon (until 2029) will be the time for carrying out investment projects whose implementation will depend on the development of gas markets in Poland and the region.



The PERN Group's business consists in the operation of the pipeline network, storage and distribution of crude oil and petroleum products, including fuels. In January 2019, the PERN General Meeting approved a Long-Term Strategic Plan for 2018–2022, which provides for the Group's capital expenditure of PLN 2.7bn. The strategy also provides for increasing the scale of PERN's operations and ensuring a stable increase in revenue and financial resources for the execution of key projects. The investment plan for the coming years envisages the construction of new storage tanks for fuels and crude oil, as well as new pipelines, including the second line of the Pomorski reverse pipeline with a length of over 240 km, transmitting crude oil along the Płock-Gdańsk-Płock route, and the Boronów-Trzebinia product pipeline with a length of almost 100 km from, supplying fuels to the Silesian Agglomeration.

Major growth projects have also been announced by the ORLEN Group, including the expansion of the Płock and Włocławek plants. The ORLEN Group's CAPEX budget for 2019–2020 will average PLN 6.8bn annually.

On February 22nd 2019, the Sejm (lower house of the Polish parliament) passed a special act on preparing and implementing strategic projects in the oil sector. The new act, which simplifies the procedures for obtaining the necessary administrative approvals, is designed to facilitate the preparation and, consequently, the implementation of the projects strategic to Poland's energy security, such as the construction and upgrade of oil and fuel pipelines.

### 3. Competitive environment

The RAFAKO Group operates on a market dominated by large, mainly international players. On this market, contracts are typically awarded through tenders announced by clients, and projects usually take several years to complete.

Given the significance of factors such as experience, credentials, technological capabilities and financial resources in bidding for new contracts, the parent faces a limited number of competitors, which are typically companies specialising in EPC projects. In line with market requirements, a majority of the Company's projects are also implemented under EPC contracts.

There is considerable competition in terms of the products and services which are part of EPC projects. Each company which the Company considers a significant competitor has proprietary energy generation technologies, extensive credentials and many years of experience in delivering EPC contracts. While some of them specialise in specific types of steam generators, others offer a comparable range of products and have access to technologies allowing them to bid for contracts within the same product scope as RAFAKO S.A. Complete generating units are constructed by: GE Power, Alstom Power Systems, Mitsubishi Hitachi Power Systems Europe, Doosan Power Systems, COVEC, CNEEC, Amec Foster Wheeler, CNIM, all of which have proprietary energy generation technologies, as well as organisational capacities necessary to carry out EPC projects. These companies, as well as RAFAKO S.A., offer products necessary to construct complete generating units that can run on any kind of fuel.

On the Polish market, there are several companies, such as Warbud, Budimex and Polimex Mostostal, which plan to enter the power construction industry by including EPC contracts into their offering or, at the very least, by offering assembly and construction services. Developing capabilities necessary to design and manufacture equipment for the power sector is complicated and requires considerable expenditures over long periods of time. They compete against RAFAKO S.A. relying solely on technologies and products supplied by the aforementioned direct competitors.

With respect to specific products, such as steam generators, desulfurization units, NOx reduction units and waste incineration facilities, main competitors of RAFAKO S.A. are again GE Power, Alstom Power Systems, Mitsubishi Hitachi Power Systems Europe, Doosan Power Systems, Amec Foster Wheeler, SES TImace, Hitachi Zosen Inova, and CNIM, as well as Andritz, Valmet and Strabag.

The market is also seeing a number of Chinese companies, whose competitive edge consists primarily in lower prices and different – uncertain in the Company's opinion – technical specifications. The RAFAKO Group believes that customers on the Polish and European markets, including Turkey, perceive the offering of Chinese companies as unreliable, but the situation may well change if the Chinese competitors are able to maintain low



prices while improving the technological quality of their products. Then those companies may become important players on the market of electricity generation technologies.

Furthermore, given the nature of large EPC contracts, it cannot be ruled out that RAFAKO S.A. will partner with the above-mentioned companies for certain projects, especially those consisting in the supply of steam generators, their pressurised components or flue gas desulfurization units.

#### 4. The RAFAKO Group's strategy

Considering the shifts and trends prevailing in the Company's core market, including declining investment in conventional energy projects (chiefly in new large generating units in Poland), including 2018 RAFAKO decided to update its strategy and expand its operations to include EPC and general contracting services for the gas and oil sector. This growth direction is to diversify revenue sources and ensure further development of the Group's business. Following this decision, the RAFAKO Group's core and strategic business segments comprise the power construction segment and the gas and oil segment.

**RAFAKO's strategy is to deliver long-term growth in the Company's value by building Poland's largest provider of specialised technological solutions to the power sector and the oil and gas industry in Poland and abroad.**

The Group conducts its business taking into account corporate social responsibility standards, with respect for the natural environment, in compliance with ethical principles, and with care for the employees' and customers' satisfaction.

The Group's strategic objectives are to:

- Strengthen its position in the domestic power construction market by delivering and participating in the largest capital investment projects in Poland, capturing a market share in the market for services related to the modernisation of heat and power infrastructure, and ensuring compliance with BAT regulations;
- Increase its share in the oil and gas market by participating in projects to construct transmission, production and processing infrastructure;
- Expand operations in foreign markets in both of the Group's strategic segments;
- Develop the technologies it applies, particularly its proprietary technologies;
- Improve profitability through control and mitigation of project risks;
- Achieve dividend distribution capacity in 2020.

These objectives are feasible provided the Group is properly organised and focused on the provision of EPC project management and general contracting services in both strategic business segments. Internal reorganisation of the Group will, on the one hand, involve acquisition of EPC capabilities in the oil and gas sector, and on the other – separation of services from the manufacturing operations through a spin-off of an organised part of the RAFAKO Group's business, namely the Steam Generator Plant. The acquisition of capabilities in the oil and gas sector will be effected by transferring to RAFAKO Engineering an organised part of business spun off from PBG (i.e. the entity surviving the planned merger of PBG with PBG Oil and Gas). The change in the previously announced structure of the planned transaction involving transfer of capabilities in the oil and gas sector to the RAFAKO Group has been made following a formal and legal analysis. This solution is optimal and beneficial to the surviving entity due to PBG Oil and Gas's existing obligations under the PBG restructuring documents to which PBG Oil and Gas is a party.

##### Power construction segment

RAFAKO has been operating in the power sector since 1949, designing, manufacturing and supplying steam generators and environmental protection facilities, including under EPC contracts, for this sector. RAFAKO owns end-to-end technology for the construction of traditional generating units and is among Europe's largest manufacturers of steam generators and environmental protection facilities for the power sector. RAFAKO is the undisputed leader of the Polish market for power generation equipment. In line with the adopted strategy, the



operations of the RAFAKO Group in the power sector are expected to significantly boost the Group's revenue. In the near future, the Group intends to focus on further developing and improving its capabilities relevant to EPC and general contracting services in the power sector through the participation in and execution of the largest projects in Poland, as well as participation in projects executed on foreign markets. Given the Group's experience as well as the solutions and technologies it offers, the Group also plans to actively participate in the market for modernisation of heat and power infrastructure, in particular 200 MW and smaller generating units, and in the market for modernisation of environmental protection facilities in accordance with the IED (Directive 2010/75/EU on industrial emissions) and BAT (Best Available Techniques). Given its proprietary technologies and credentials, RAFAKO is well prepared to take part in such tenders and meet market expectations.

In 2019, the RAFAKO Group plans to bid for power construction contracts with a total estimated value in excess of PLN 5bn. In these tenders, contracts are to be awarded for the construction of generating units and waste thermal treatment plants, construction and delivery or modernisation of steam generators and related facilities, as well as construction and upgrade of existing FGD, SCR and dust removal units.

### Oil and gas segment

The reasons for RAFAKO's entry into this strategic segment of the PBG Group's operations include primarily the market environment, growth prospects, and opportunities to use of the Group's potential. The experience, credentials and know-how acquired by PBG during more than 25 years of its operations in this specialist construction services market will be concentrated within the RAFAKO Group. Historically, the PBG Group was the leader of this market in Poland and the implementation of multi-billion projects enabled the Group to obtain unique credentials that can be now used in tenders and which represent an added value for the entire Group. The credentials include experience as a general contractor in turnkey projects covering the design, delivery, assembly, construction and commissioning of the complete LMG (Lubiatów-Międzychód-Grotów) oil and gas production facility, a power plant worth PLN 1,397m (VAT exclusive), and unique experience in implementing a turnkey project to construct an LNG terminal, with a value of PLN 2,368m (VAT exclusive). The Lubiatów-Międzychód-Grotów facility is the largest oil and gas production facility in Poland with production capacities reaching 1,300 tonnes of crude oil per day and 35,000 Nm<sup>3</sup> of gas per hour. Since 2013, PBG Oil and Gas has also been playing an important role in the PBG Group's operations in the oil and gas segment. In 2017, PBG Oil and Gas successfully completed the construction of the Radoszyn production facility. It is the third largest oil and gas production facility in Poland, with the production capacity reaching 80 tonnes of crude oil per day. Thanks to its active participation in the market and contract performance, PBG Oil and Gas has the competencies in managing projects at each stage of execution. These competences include planning of design, production and construction work necessary to execute an entire project, and comprehensive management of the supply chain and logistics to ensure timely delivery and high quality of products and services. The company also has the important experience and competencies related to the start-up and commissioning of projects. After the merger of PBG Oil and Gas with PBG, an organised part of business ("OPB") having the capabilities listed above will be spun off from the merged entity and included in the RAFAKO Group.

The RAFAKO Group intends to actively participate in the market of investment projects related to gas and oil production and to the development and modernisation of gas networks in Poland and abroad. The Group is interested in participating in projects of key importance to Poland's energy security, related to the expansion of underground gas and oil storage facilities and distribution infrastructure, including gas compressor stations.

In 2019, the Group plans to bid for contracts in the oil and gas segment with a total estimated value of PLN 2.7bn. Tenders in this segment mainly relate to installations for liquefying natural gas and LNG storage, compressor stations, gas pipelines, gas production facilities, and modernisation of existing installations and facilities.

**RAFAKO's objective for 2019 is to win new orders worth between PLN 800m and PLN 1bn in the two strategic business segments.**

**Development of the Group's solutions, especially proprietary technologies**





The RAFAKO Group's critical competitive edge lies in the wide array of technologies enabling it to flexibly respond to market expectations, including to developments in the power sector. The Group has engaged in a number of research and development projects designed to:

- Modify and enhance traditional products, such as steam generators and environmental protection equipment,
- Create new products and services. These projects include a programme to improve the operational flexibility of 200 MW units with a comprehensive range of upgrade services, polygeneration islands (POLYGEN Project), CO<sub>2</sub> methanation, heat storage (construction of industrial plant with a partner ENSOL), ELAGLOM (commercialisation of the patented solution for capturing submicron particles, including heavy metals, from flue gases) and electromobility (an innovative school/city bus project).

#### **Dividend policy**

The Company's objective is to regain its dividend payment capacity in 2020. The dividend policy will be defined following the completion of the project to construct the 910 MW supercritical power generating unit at the Jaworzno Power Plant.

### **5. Factors and developments relevant for the Group's prospects in 2019**

In 2019, the following factors and developments will have the greatest bearing on the RAFAKO Group's development and prospects:

- securing financial liquidity and obtaining access to new bank/insurance guarantees that will enable the Group to perform new contracts,
- making good progress on the construction of a 910 MW supercritical power generating unit at the Jaworzno Power Plant,
- making good progress on the construction of a biomass-fired co-generation unit in Vilnius (Lithuania),
- progress in the construction of two coal-fired steam units (2x50 MW) on Lombok Island, Indonesia
- performance of a large number of significant contracts in the Polish and European markets, including construction of modern steam generators, flue gas desulfurization and NO<sub>x</sub> reduction units, municipal waste treatment and incineration systems, as well as pressurised parts of supercritical boilers,
- performance of new contracts in the natural gas and oil segment, including fuel storage depots and gas transmission installations,
- acquisition of new material contracts.

The capital expenditure to be made in 2019 on property, plant and equipment will mainly be incurred to purchase or upgrade plant and equipment. Expenditure on intangible assets will involve the purchase of software and licences. The parent also plans substantial spending on research and development work, mainly the 'E-bus – an innovative small electric bus' project. The capex projects will be financed primarily with internally generated funds, and also through external means (e.g. leases).

### **6. RAFAKO Group's order book**

As at December 31st 2018, the value of the Group's order book was in excess of PLN 2,817m. The largest item is the Jaworzno 910 MW Project. The amount outstanding under the contract is PLN 881m, of which PLN 103m is attributable to RAFAKO S.A. and PLN 778m to SPV Jaworzno. The order book does not include the Opole contract (RAFAKO's outstanding share in the project, worth PLN 305m, was subcontracted outside the RAFAKO Group). At present, the order book comprises mostly power construction projects.



	ORDER BOOK (PLNm)		Due for execution in		
	as at Dec 31 2017	as at Dec 31 2018	2019	2020	after 2020
RAFAKO	1,717	1,978	1,520	412	46
SPV Jaworzno	1,377	778	765	13	0
Other	26	61	60	1	0
<b>TOTAL</b>	<b>3,120</b>	<b>2,817</b>	<b>2,345</b>	<b>426</b>	<b>46</b>

As regards the value of the RAFAKO Group's order book, data presented in this document is based on the following assumptions:

- the order book value is equal to the aggregate amount of remuneration under the individual contracts executed by the RAFAKO Group in the period to December 31st 2018; the figure does not take into account any planned contracts that have not yet been signed, but it does take into account the contracts signed conditionally.
- the order book value is disclosed as at December 31st 2018; actual revenue from contracts and completion periods depend on a number of factors, which may be outside the Group's control.

## Key contracts for power generating units, boilers, power equipment, machinery and components

### 1) Construction of a 910 MW supercritical power generating unit at the Jaworzno Power Plant

On April 17th 2014, RAFAKO S.A., acting as the leader of a consortium with Mostostal Warszawa S.A., executed a contract with Tauron Wytwarzanie S.A. for the construction of a 910 MW supercritical power generating unit at the Jaworzno III Power Plant - Power Plant II. The value of the contract is PLN 4.5bn.

The consortium will construct the unit together with a complete set of key facilities, installations and external equipment required for its safe and proper operation. The unit will be fitted with a coal-fired supercritical pulverised-fuel once-through steam generator and a condensing steam turbine coupled with the power generator. The unit will be connected to a new 400 kV substation supplying electricity to the National Power Grid. The unit's gross capacity will be 910 MWe, with a net efficiency of 45.91% and design coal consumption of ca. 345 t/h at nominal capacity.

The unit will be a high-efficiency base-load electricity generation facility operating within the power system. It will be fitted with systems enabling compliance with the NO<sub>x</sub>, SO<sub>2</sub> and dust emission standards, i.e. an SCR unit, an FGD unit and an electrostatic precipitator. The operating life of the unit will be at least 200 thousand hours or 30 years, and its output will increase the total capacities of the Polish electric utility sector by approximately 2.5%.

### 2) Construction of a biomass-fired co-generation unit in Vilnius

The contract provides for the construction of a biomass-fired co-generation unit consisting of boilers with fluidised beds, biomass storage and feeder systems, and a flue gas treatment system. The project will be executed as part of the process to construct a new CHP plant in Vilnius, Lithuania.



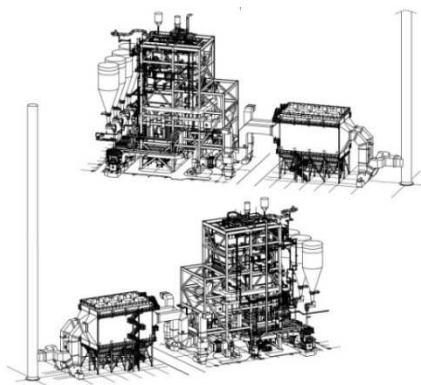


The contract was signed on September 29th 2016 with JSC Vilniaus Kogeneracinė Jėgainė. The notice to proceed (“NTP”) was set for June 1st 2017; the contract delivery period is 32 months from that date.

Currently, the contract is valued at EUR 148,325 thousand.

The award of this project is an important step towards one of the RAFAKO Group’s strategic objectives, which is to increase Group-wide export revenues.

### 3) Construction of two coal-fired steam units (2x50 MW) on Lombok Island, Indonesia



On December 28th 2017, a consortium comprising RAFAKO S.A. and PT. Rekayasa Industri of Indonesia, as the Consortium Leader, signed a conditional agreement with PT. PLN (PERSERO), INDONESIA for the construction of two coal-fired steam units (2x50 MW) on Lombok Island, Indonesia. The total value of the Consortium Agreement is EUR 70.3m, USD 18.9m, and IDR 1,590,700m (approximately PLN 850.3m in total, VAT exclusive), including the remuneration of RAFAKO S.A., amounting to EUR 70.3m (approximately PLN 295m), VAT exclusive, representing ca. 35% of the total value of the Consortium Agreement. The employer set the notice to proceed (“NTP”) at April 11th 2018. The contract delivery period is 36 months for the first unit and 39 months for the second unit.

## Key contracts for air pollution control systems

### 1) Installation of a catalytic flue gas NOx reduction unit at ENEA Wytwarzanie Sp. z o.o.

On September 30th 2016, the parent and ENEA Wytwarzanie Sp. z o.o. signed a contract for delivery and installation of a catalytic flue gas NOx reduction system for AP-1650 boilers No. 9 and 10 and for upgrade of the electrostatic precipitators at ENEA Wytwarzanie Sp. z o.o. for PLN 289,182.1 thousand.



### 2) Upgrade of 3-6” FGD unit for PGE Górnictwo i Energetyka Konwencjonalna S.A.

The project consists of a comprehensive upgrade of the flue gas desulfurization systems on units 3, 4, 5 and 6. The VAT-exclusive value of the order is PLN 181,600 thousand.

Work has been completed on units 3 and 4, with FGD absorbers placed in service. Work is under way on units 5 and 6.

The project completion date is scheduled for May 31st 2021.

### 3) Construction of flue gas desulfurization unit (FGD II) at Ostrołęka Power Plant B



On July 24th 2018, a contract was signed for the construction of a wet lime and gypsum flue gas desulfurization unit at Ostrołęka Power Plant B. The contract is performed by a consortium comprising RAFAKO and ENERGA Serwis Sp. z o.o. The value of the contract attributable to RAFAKO (consortium leader) is PLN 126,250 thousand.

The scheduled completion date is June 30th 2020.



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## Major contracts in the oil and gas segment:

### 1) Construction of the DN700 Szczecin-Gdańsk gas pipeline, section V Goleniów-Płoty

On May 30th 2018, a contract was signed between Operator Gazociągów Przemysłowych GAZ – SYSTEM S.A. and RAFAKO S.A. for general contractor services in the project to construct section V Goleniów-Płoty of the DN 700 Szczecin-Gdańsk pipeline with auxiliary facilities and the necessary infrastructure for its operation.

The total value of the contract as at the execution date is PLN 125m, and the completion deadline is scheduled 24 months after that date.

### 2) Construction of the Kędzierzyn Compressor Station

On February 15th 2019, a contract for the construction of a compressor station in Kędzierzyn-Koźle was signed between Operator Gazociągów Przemysłowych GAZ-SYSTEM S.A. and RAFAKO S.A.

The VAT-exclusive value of the contract is PLN 168m. The contract is to be completed within 25 months.



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## Management Board's statement

The Management Board of RAFAKO S.A., the parent of the RAFAKO Group, hereby represent that:

- 1) to the best of their knowledge, the consolidated financial statements for the year ended December 31st 2018, as well as comparative data for the year ended December 31st 2017, were drawn up in compliance with the applicable accounting standards and give a true, fair and clear view of the Group's assets, its financial condition and performance, and that the Directors' Report on the operations of the RAFAKO Group gives a true view of the Group's development, achievements and standing, including a description of key risks and threats;
- 2) the auditor of the full-year financial statements, being an entity qualified to audit financial statements, was appointed in compliance with the applicable laws, and the auditing firm and the auditors who conducted the audit satisfied the auditor independence criteria to deliver an unbiased and independent auditor's opinion on the audited full-year financial statements, in compliance with the applicable laws and professional standards.

Signatures of Management Board members

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Jerzy Wiśniewski  
*President of the Management Board  
of RAFAKO S.A.*

.....

Agnieszka Wasilewska-Semail  
*Vice President of RAFAKO S.A. Management Board*

.....

Jarosław Dusiło  
*Vice President of RAFAKO S.A. Management Board*

April 29th 2019



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