

Zespół Elektrowni Patnow Adamow Konin SA is a Poland-based company engaged in the electricity sector. It operates four old lignite power plants:

- Patnow I Power Plant with six lignite powered units and a total capacity of 1,244 MWe<sup>1</sup> built in the years 1967-1969<sup>2</sup> with thermal efficiency 32,9% and emission factor (ef) of CO<sub>2</sub> of 1,17 Mg/MWh for units 3-6 and 1,05Mg/MWh for units 1 and 2

- Konin Power Plant, with a capacity of 248MWe+336MWt from 1958 with the thermal efficiency of 45,6% and ef of 1,41Mg/Mwh (planned to be retired by 31.12.2017<sup>3</sup>)

- Adamow Power Plant, a lignite-fired utility TPP with a capacity of 600 MWe build in the years 1964-1967 with the thermal efficiency of 33,6% and ef of 1,18 Mg/MWh. Adamów power plant is due to be shut in 2017<sup>4</sup>.

- Patnow II Power Plant with a capacity of 474 MWe from 2008 with thermal efficiency of 42,6% and ef of 0,94%.

Its total installed generating capacity of 2566 MWe covers approximately 8.5% of the Polish electricity market while emitting 12,69 mln tonnes of CO<sub>2</sub> per year<sup>5</sup>.

ZE PAK is responsible for 13,7 of tonnes of lignite mined each year, which constitutes 21% of lignite extraction in Poland (64 mln tonnes in 2014)<sup>6</sup>.

The company owns the following lignite open-pit mines:

- a) **Adamów and Koźmin** from which 4,4 mln tonnes of lignite is extracted each year leading to 32-34 mln m<sup>3</sup> of earth surface to be removed in order to get to the lignite deposit and 92 mln m<sup>3</sup> of water are being pumped out.<sup>7</sup>
- b) **Pątnów IV** (5,3 mln tonnes per year) and **Drzewce** (1,9 mln tonnes a year)
- c) **Tomisławice** (2,12 mln tonnes per year).

Koźmin open-pit mine will close in summer 2016, Adamów lignite open-pit mine will be closed by 2018<sup>8</sup>, Drzewce by 2022, Pątnów IV open-pit mine will exhaust its lignite industrial reserves by 2019. According to the CEO of Adamów Mine subsidiary of ZE PAK Koźmin open-pit mine is the most water-filled lignite mine in Poland and every extracted tone of lignite is mined with a loss.

Only in the Tomisławice open-pit mins there will is enough lignite to keep exploitation running until 2033. However this open-pit mines is plagued with ongoing legal challenge.

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<sup>1</sup>[http://zepak.com.pl/upload/aggregate/REMIT\\_PAK\\_EPII\\_03\\_02-04\\_02\\_2016\\_V1.pdf](http://zepak.com.pl/upload/aggregate/REMIT_PAK_EPII_03_02-04_02_2016_V1.pdf)

<sup>2</sup>[http://zepak.com.pl/upload/autofiles/prospect/ZE\\_PAK\\_2012\\_10\\_08\\_prospekt.pdf](http://zepak.com.pl/upload/autofiles/prospect/ZE_PAK_2012_10_08_prospekt.pdf) p. 161

<sup>3</sup>Does not meet neither LCPD ELV nor IED NO<sub>x</sub>, SO<sub>2</sub> and dust requirements

<sup>4</sup><http://wysokienapiecie.pl/prawo-energetyczne/2-glowna/910-w-polsce-konczy-sie-wegiel-analiza>

<sup>5</sup>Company data from the consolidated report for the period 01.01.2015-30.09.2015.

<sup>6</sup>WYKAZ ZŁÓŻ WĘGLA BRUNATNEGO, Polish Geological Institute (PIG) 2015, table 3.

<sup>7</sup><http://www.kwbadamow.com.pl/dzialalnosc.asp>

<sup>8</sup>[http://www.lm.pl/aktualnosci/informacja/102935/zamkna\\_odkrywke\\_kopalnia\\_adamow\\_zakonczy\\_prace\\_za\\_2\\_lata](http://www.lm.pl/aktualnosci/informacja/102935/zamkna_odkrywke_kopalnia_adamow_zakonczy_prace_za_2_lata)

ZE PAK's capitalization as of the 31.01.2016 of PLN 396 423 666,6 (EUR 89 015 957.83 EUR)<sup>9</sup> and as of 09.03.2016 of PLN 350 174 238 (EUR 79 595 054).

		IPO	High share price	Price March 16'
		30.10.2012	24.10.2014	7.06.2016
<b>ZE PAK</b>	Price	25,9	33,75	13,42
	Multiplier	1	1,30	0,52
<b>WIG</b>	Index indicator	43240	53320	46 365,7
	Multiplier	1	1,23	1,07
<b>WIG Energia</b>	Index indicator	3645	4804	2884,97
	Multiplier	1	1,32	0,79

During the raise of both indexes -the main Warsaw Stock Exchange Index WIG and the energy specific index – WIG Energia (WIG Energy) the share price of ZE PAK has been shadowing the index indicator of WIG Energia while remaining over the growth of WIG index. Since the trend changed as of end of October 2014 share price of ZE PAK is falling much faster WIG Energia Index. In this time the general WSE index WIG has returned slightly above the level from October 2012.

In fact the company's share price has dropped almost 50 % since the IPO at the end of October 2012 and over 60% since the highest share price at the end of October 2014.

On the 17th of October 2012 CEE Bankwatch Network together with Greenpeace have advised the investors to stay away from the secondary IPO.<sup>10</sup> The reasons exposed by the two organisations that hold even more true today have been the following:

1. Analysts have already expressed concerns about "the company's ageing assets, high capex needs and trailing financial margins".
2. ZE PAK already suffers financially from significant constraints on its coal supply. The company's proposed mine expansions face strong resistance both locally. An un-finalised EU Commission infringement procedure has found breaches of environment law at the Tomislawice mine.
3. ZE PAK power plants are substantially overvalued given their large environmental costs and liabilities, their low and decreasing capacity factors and high capex needs.
4. ZE PAK air pollution emissions are estimated to be responsible for 258 deaths every year. ZE PAK's high CO2 emissions put it at a competitive disadvantage in the European electricity market. The annual economic impact of emissions is estimated to be €993 million, more than 11 times the capitalisation of the company at the end of January 2016.
5. ZE PAK's plans are unclear for raising the necessary capital for the substantial investments it says it will make to extend the life of its lignite plants and to expand its mines.

As previously explained ZE PAK relies on local lignite mines for its operations since lignite cannot be economically transported over large distances. The lignite production from its KWBA mine is declining, one of the mines – Koźmin is to be closed by the end of 3Qer 2016 and the other by 2018. The reduction in output from the company's mines is already constraining electricity production, with the result that revenues and operating profits are reduced. 90% of EBITDA of ZE PAK is generated on

<sup>9</sup>Exchange rate for 02.2016 after:

[http://ec.europa.eu/budget/contracts\\_grants/info\\_contracts/inforeuro/inforeuro\\_en.cfm](http://ec.europa.eu/budget/contracts_grants/info_contracts/inforeuro/inforeuro_en.cfm)

<sup>10</sup><http://bankwatch.org/sites/default/files/briefing-ZE-PAK-investor-risks-17Oct2012.pdf>

the basis of lignite combustion<sup>11</sup>. Lignite combustion is pushed towards the end of the merit order and thus curtailing the revenues and operating profits of the company. The net profits on the main activity of ZE PAK have been eroded from PLN 402,8 mln (EUR 178 mln) in 2012 via PLN 231,5 mln (EUR 102, 4 mln) in 2013 to PLN 78,48 mln (EUR 34,7 mln) in 2014<sup>12</sup>. They are further projected to decrease to PLN 26 mln (EUR 11,5mln) in 2015<sup>13</sup> and are further projected to decrease to PLN -10 mln in 2016. At the same time the debt of the company has increase from PLN 2,7 bln (EUR 1,19 bln) in 2012 to PLN 3 bln (EUR 1,3 bln) in 2014 and is expected to raise to further.

ZE PAK needs new open-pit mines and expansion of the current ones for its continued operations.

Currently ZE PAK is in the process of obtaining an Environmental Decision for „Ościszowo” open-pit mine in Kujawsko-Pomorskie Voivodship with geological reserves of 38 mln tonnes and the Regional Environmental Protection Authority has informed that the decision has been postponed to again to 08.2016. In the IPO prospectus ZE PAK estimated the cost of opening new open-pit lignite mines at between PLN 200 mln and PLN 350 mln<sup>14</sup>. Both of the mining subsidiaries of ZE PAK – KWBA and KWBK have closed the first three quarters of 2015 with a loss. For KWBA it was PLN 12 mln (EUR 5.3) and for KWBK PLN 16,68 mln (EUR 7,38 mln). The company's CEO said on 22<sup>nd</sup> of March 2016 that Ościszowo EIA permit will be obtained by the end of May 2016 yet it is most likely that it will take many month to finalise the procedure<sup>15</sup>.

The approval of new coal mines has significant regulatory and approval hurdles which means the lignite supply the company needs cannot be guaranteed. The ZE PAK's open-pit mines and planned expansions are already causing wide-scale public protests, including from the Association Nasz Dom in Wielkopolska, Association Przyjezierze<sup>16</sup> in Kujawsko-Pomorskie and the Coalition Development YES-Open-Pit Mines NO (DY-OPMN)<sup>17</sup> members including its legal representation Foundation Development YES- Open-Pit Mines NO<sup>18</sup>. The expansion plans have also been criticized by the ex-Agriculture Minister for the negative environmental impacts they will have on the region's agricultural activities and by the current President of Poland for the lack of dialogue with the local community representatives. The expanded mines would effect the areas with the best soil in Poland.

ZE PAK also has a major unresolved court case concerning its Tomisławice open-pit mine. The EU Commission is running an infringement procedure against the Tomisławice mining project, which has found it is in breach of the EU environmental legislation and the jurisprudence of the European Court of Justice in Luxembourg (due to threats to the EU Natura 2000 protected sites, breach of the EU Habitat Directive etc). The EU Commission has sent a letter of formal notice and the Reasoned Opinion to Poland urging the state to comply with the EU legislation. The ex-EU environmental commissioner Janez Potocnik has also confirmed the breach of law.

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<sup>11</sup>Analysis by BZ WBK brokerage house from 21.01.2016

<sup>12</sup><http://ri.zepak.com.pl/pl/informacje-finansowe/wybrane-dane-finansowe.html>

<sup>13</sup>Estimated base on the analysis quoted above.

<sup>14</sup>IPO prospect [http://zepak.com.pl/upload/autofiles/prospect/ZE\\_PAK\\_2012\\_10\\_08\\_prospekt.pdf](http://zepak.com.pl/upload/autofiles/prospect/ZE_PAK_2012_10_08_prospekt.pdf) p. 156

<sup>15</sup>The Regional Directorate of Environmental Protection in Poznań responsible for the EIA procedure for Ościszowo mine has announced in June 2016 that the procedure is prolonged again by two more months until August 2016 <http://bip.poznan.rdos.gov.pl/zawiadomienie-regionalnego-dyrektora-ochrony-srodowiska-w-poznaniu-z-dnia-2-czerwca-2016-znak-woo-ii-4235-9-2015-wm-39>

<sup>16</sup><http://przyjezierze.org/>

<sup>17</sup><http://rozwojtak-odkrywkinie.pl/index.php/en/rt-on-en/koalycja-en>

<sup>18</sup><http://rozwojtak-odkrywkinie.pl/index.php/en/>

The company is heavily exposed to the risks of carbon pricing. The combined CO2 emissions of its plants in 2015 were 12,69 million tonnes. This equates to approximately 1 000g CO2/kWh one of the highest rates in the European Union. This is not a favourable competitive position on the European electricity market. The emission factor is also significantly higher than the limits referenced in The Climate Principles guidance on financing new coal-fired power plants and the policies of individual banks, including HSBC and BNP Paribas. The costs of CO2 EUA certificates in from 01.01.2015 to 30.09.2015 was PLN 232,5 mln (EUR 102,8 mln) and will increase in the following years due to the decreasing amount of emissions allowances handed out to the company as the result of Art. 10c and Art. 10a derogation from the EU ETS rules that ZE PAK's non-Polish competitors are falling under.

The annual air pollution from the three plants is estimated to result in 258 deaths, 118 cases of chronic bronchitis, 76 hospital admissions and over 267 000 lost working days from sickness<sup>19</sup> The annual economic impact of air pollution and CO2 emissions from the three plants is estimated to be €993 million more than 11 times the capitalisation of the company at the end of January 2016. These large health and economic impacts can create substantial financial liabilities for the company.

Despite operating as baseload generation outlets, the plants have rather low capacity utilisation factors. This may further shrink with the fast expansion of renewable electricity in Poland and the neighbouring markets. The Fraunhofer Institute has shown how the expansion of renewable energy will diminish the requirements for baseload electricity in Germany, projecting a decline from 44GW in 2011 to 25 GW in 2020<sup>20</sup>. These calculations are based on Germany's earlier renewable targets that are lower than the current target of 40% renewable energy by 2020.

The main shareholders of ZE PAK S.A. are Zygmunt Solorz-Żak<sup>21</sup> who counting together with the Investment Funds he controls (Argumentol Investment Company Ltd (23.63%), Trigon XIX FIZ (19.72%) i Ipopema 116 FIZAN (17,7%)) owns 51,55% of the shares (as of 31.12.2015).

As of 31.12.2015 10 of the 12 pension funds operating in Poland (OFE) owned jointly 31,91% of ZE PAK S.A. shares (two of the pension funds – MetLife OFE and AEGON OFE do not have any shares of ZE PAK S.A.) in ZE PAK.

Name of the shareholder:	Percent of shares owned:	Number of shares (total 50 823 547)
Zygmunt Solorz-Żak	51,55% (29.01.2016)	26 200 867
Argumentol Investment Company	22.63% <sup>22</sup> (14.08.2015 <sup>23</sup> )	11 500 306
Trigon TFI SA, Kraków	19,72% <sup>24</sup> (17.08.2015)	10 021 732

<sup>19</sup><http://bankwatch.org/sites/default/files/briefing-ZE-PAK-investor-risks-17Oct2012.pdf>

<sup>20</sup>Fraunhofer: Dynamische Simulation der Stromversorgung in Deutschland nach dem Ausbauszenario der Erneuerbaren-Energien-Branche, December 2009: [http://www.beeev.de/\\_downloads/publikationen/studien/2010/100119\\_BEE\\_IWESSimulation\\_Stromversorgung2020\\_Endbericht.pdf](http://www.beeev.de/_downloads/publikationen/studien/2010/100119_BEE_IWESSimulation_Stromversorgung2020_Endbericht.pdf)

<sup>21</sup>Shares owned by Zygmunt Solorz-Żak are valued at PLN 8,89 bln (EUR 2 bln) (source: <http://www.stockwatch.pl/inwestor/Zygmunt-Solorz-Zak.aspx>) and his personal worth at PLN 11.9 bln (EUR 2,67bln) (<http://ktojestkim.forbes.pl/zygmunt-solorz-zak,sylwetka,139413,1,1.html>) In 2015 Forbes Magazine listing of the richest Polish citizens he ranked 2nd after Jan Kulczyk who died in August 2015.

<sup>22</sup>[http://ri.zepak.com.pl/upload/aggregate/Notification\\_2015-08-24\\_IB8\\_FIZ.pdf](http://ri.zepak.com.pl/upload/aggregate/Notification_2015-08-24_IB8_FIZ.pdf) Argumentol Investment Company is registered in Nikosia, Cyprus and is a company owned indirectly by Zygmunt Solorz-Żak.

<sup>23</sup>Closed investment funds do not publish information about their current percentage of shares held until the annual reports (next one to be published in April 2016).

Ipopema TFI SA <sup>25</sup>	17,7% (18.09.2015)	9 000 000
Trigon TFI S.A. and Ipopema TFI S.A. hold together 60,05% of shares meaning that 8,5% are additional to the shares owned by or in effective decision-making power of Zygmunt Solorz-Zak.		
NN(ING)	9,97% (31.12.2015)	5 068 410
OFE PZU "Złota Jesień"	4,93% (31.12.2015)	2 503 203
Aviva OFE BZ WBK(Banco Santander)	4,93% (31.12.2015)	2 503 131
AXA OFE	3,75% (31.12.2015)	1 905 338
Allianz Polska OFE	2,47% (31.12.2015)	1 254 835
PKO BP Bankowy OFE	2,30% (31.12.2015)	1 170 785
Nordea OFE	1,88% (31.12.2015)	957 600
Generali OFE	1,66% (31.12.2015)	843 346
Pekao OFE (Uni Credit)	0,54% (31.12.2015)	275 359
OFE Pocztylion Arka	0,52% (31.12.2015)	266 538
In total pension funds:	31,91% (31.12.2015)	
Other shareholders:	8,04%	

For the involved banks section:

**In March 2014 ZE PAK has obtained a loan agreement with a bank consortium (mBank owned by Commerzbank, BGK, Millennium owned by Banco Comercial Português, Pekao SA owned by UniCredit and PKO BP) for PLN 1,2 bln (EUR 530 mln). As ZE PAK has breached the loan agreement the bank consortium and the company will reach a decision to either postpone the disbursement schedule for the modernisation of units 3 and 4 at the Patnow TPP or to limit the scope of the**

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<sup>24</sup><http://www.reuters.com/article/idUSL5N10T0FX20150818>

<sup>25</sup> IPOPEMA 116 FIZAN's assets have been worth PLN 74,2 mln (EUR 16,7 mln) as of 30.11.2015

**modernisation and thus limit the loan amount. The above mentioned agreement will be reached by 30 of June 2016<sup>26</sup>.**

**At the end of June 2016 ZE PAK has signed an agreement with the bank consortium and returned the amount borrowed for modernisation of units 3 and 4 without banks considering it as a breaking of the contract. This means these units will not be modernised.**

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<sup>26</sup><http://www.bankier.pl/wiadomosc/ZE-PAK-nie-dotrzyma-terminow-inwestycji-ale-kredytodawcy-nie-wyciagna-konsekwencji-3453809.html>