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Haitong Bank in a report from 10th August (08:36) upgrades Bogdanka from NEUTRAL to BUY with a FV of PLN 66.29, reiterates recommendation for JSW with a BUY rating though trims FV to PLN 102.6 and reiterates BUY recommendation for Stalprodukt and trims FV to PLN 611 per share.

**Valuation Methodology**

**Bogdanka**: Analysts valuation approach for LW Bogdanka uses two methods, discounted cash flow (DCF) and peer valuation models. They calculate the final share valuation as the weighted average of the two results with 90% and 10% weights for DCF and relative valuation, respectively. Given the long-term character of Bogdanka's price contracts covering the vast majority of the company's production, its exposition to spot or even one-month forward international price indices such as ARA is limited. Hence comparing Bogdanka to other thermal coal miners may be difficult. Analysts stress that the latter valuation method may not cover the full commodity cycle as it is calculated on 2018-2020 results forecasts hence they believe it is not appropriate to treat the abovementioned methods as equal. On the flipside they believe that including a peer valuation is essential even for cyclical businesses since investors tend to extrapolate current prices on long-term profit estimates. All in all, business cyclicality is mostly accounted for in a lower than market average multiples level.

**JSW**: Analysts valuation approach for JSW uses two methods: a discounted cash flow (DCF) and a peer valuation. They calculate the final FV as the weighted average of the two results with 90% and 10% weights for DCF and relative valuation, respectively. They stress that the latter may not cover the full commodity cycle since it is made on 2018-2020 results forecasts hence analysts believe it is not appropriate to treat the abovementioned methods as equal. On the flipside they believe that including the peer valuation is essential even for cyclical businesses since investors tend to extrapolate current prices on long-term profit estimates. All in all, business cyclicality is mostly accounted for by lower multiples.

**Stalprodukt**: Analysts valuation approach for Stalprodukt uses two methods: a discount cash flow (DCF) and peer valuation. They calculate the final FV as the average of the two results with equal weightings. Analysts also take into account minorities and associates.

**Risks to Fair Value**

**Bogdanka**

Risk associated with the economic policy of the State regarding the hard coal mining sector

The plans of the Ministry of Economy and the Ministry of State Treasury concerning enterprises operating in the hard coal mining and power sector have a significant influence on the market position of the LW Bogdanka Group. If politicians favour Silesian mines at the expense of other mines in the country, Bogdanka's coal sales might decrease, making room for sales of PGG.

Power production in Poland and the world

The levels of prices of raw materials for power production are mainly affected by:

- the price of thermal coal; and
- raw material alternatives to thermal coal (crude oil, natural gas, renewable sources) in global markets and, consequently, in the domestic market.

Nonetheless, the correlation between global and Polish coal prices is rather weak and thus we do not see it as a key risk for Bogdanka's activities.

Risk associated with the levying of a coal excise tax

The provisions of the Excise Tax Act came into force on 2 January 2012. Pursuant to said provisions, coal products sold for heating purposes are effectively taxed with an excise duty. The Act provides for an extensive range of excise tax exemptions which cover, among other things, electrical power generation. However, the act has also resulted in a greater number of formal requirements as regards documenting the sale of excise tax-exempt coal. Nevertheless, the risk to the Group is limited, because the Parent (Enea) sells most of its coal volumes for electrical power generation purposes.

Risk associated with the specific nature of mining sector operations and the possibility of unforeseen events
Extracting coal from underground seams is a complex process which is subject to strict technical and technological requirements. During such operations, various stoppages can occur due to planned and unplanned technical interruptions (e.g. malfunctions). In this group of risks, there is also a risk of unexpected, usually local, deterioration of the quality of the deposit. The operating activities of the LW Bogdanka Group are exposed to risks and dangers resulting from the specific nature of conducting activities in the mining industry. These include:

- events associated with the environment (e.g. industrial and technological malfunctions)
- extraordinary events, e.g. geotechnical phenomena, mining disasters, fires or flooding of excavations with mine waters
- mining damage.
- The consequences may include:
- temporary suspension of operating activities, losses relating to property or financial assets
- work accidents, including fatal accidents
- potential of the Company being held legally liable for mining events' countermeasures.

Risk of restrictive EU climate policy also with respect to CO2 emissions
The European Commission requires limiting CO2 emissions at the level of EU member states by 20% until 2020, in accordance with the so-called "Europe 2020 strategy", as well as reducing greenhouse gas emissions by 20%, raising the share of energy consumption produced from renewable sources to 20%, and improving energy efficiency by 20%, in accordance with the so-called "20-20-20" targets. In the Polish energy sector, more than 90% of electricity is generated from coal combustion (hard coal and lignite). The production of electricity from coal is connected with significant CO2 emissions. These limitations may cause significant difficulties with competitiveness and investments in new production capacity. As a consequence, the difficulties of the power sector may result in a decrease in demand for coal in general, or for coal of lower quality. It may have a negative impact on the sales of coal by the LW Bogdanka Group and in consequence may have a negative impact on its financial results. Nonetheless, it is very unlikely that heavy reliance on coal combustion regarding electricity consumption in Poland will end in the next 5-10 years. Any changes to the production mix would have to be preceded by vast investment outlays, which take at least 2-3 years.

Risk associated with the launch of the extraction of new deposits at Parent company
A material aspect of the operations conducted by the Group is the necessity to secure future extraction possibilities by providing access to new coal resources. Restriction of mining capacity may:

- shorten the life of the mining plant and/or;
- reduce the assumed level of extraction of hard coal; and therefore
- decrease future financial results of LW Bogdanka S.A.

At the moment the Company is undertaking activities with the aim of obtaining new licences in order to double its resources and secure a raw material base for a further 50 years of activity.

**JSW**
Risk associated with the health of the global economy and steel industry – The slowdown in global economic activity, especially in the steel industry, along with a decline in demand for coking coal and coke might have an adverse impact on the Group's results. In particular we turn our attention to the Chinese real-estate market and fixed asset investment. In tandem with iron ore coking, coal is an essential ingredient for primary steel production. Assuming that around 20% of global steel consumption comes from the Chinese construction market, its prosperity is vital for coking coal demand.

Risk of blast furnace pig iron production capacity reduction in Europe – There is a risk that European steel capacity might experience further capacity closures as a result of environmental issues. The BF-BOF method produces up to two tonnes of CO2 for every tonne of steel, twice as much as power plants emit with one MWh of production. Currently, the European power industry is on the verge of passing a Market Stability Reserve Reform to lend support to stagnant CO2 prices. Without deductions or allowances for CO2 and with prices soaring fuelled by measures introduced by the abovementioned reform, BF-BOF might turn out to be unviable and replaced by the environmentallyfriendly EAF. Demand for coke and coking coal may also be affected by planned overhauls of blast furnaces as well as sudden and unplanned outages resulting from failures or accidents.

Risk of volatility of coal and coke prices – in the past coal prices experienced significant volatility due to supply constraints, i.e. insufficient coal extraction, decline in inventories as well as abnormal weather phenomena especially cyclones and heavy rains in Australia. Historically prices changed by as much as several dozen percent qoq.

Operational risks that may contribute to lower output or higher costs – The Group's coal production volume is subject to operational factors and events beyond its control, which may disrupt its operations and affect production volumes in the various mines at different times. The Group's mining activity is above all subject to the influence exerted by mining factors, which include, among others:

- difficult geological conditions such as disruptions to the continuity of deposits characterized by volatility and irregularity that may curtail the effectiveness of mining longwall parcels to a greater extent than anticipated;
- a higher than forecast level of natural hazards which may lessen the ability to mine individual longwalls;
- mine accidents, fires, explosions and methane combustion, coal dust explosions, methane and rock outbursts and rock falls and collapses;
- failure of machinery and equipment used in mining and processing.

Even though the Group has taken a large number of measures to enhance safety, these risks may grow, in particular in conjunction with mining at deeper levels in the Group's mines. Moreover, the events and factors that may affect production volumes and in particular cost growth include changes to the legal regulations governing the coal industry.

Risk that the volume and quality of estimated recoverable coal reserves may be lower than expected by buyers – Estimates concerning coal resources inevitably entail a certain amount of uncertainty and to some extent depend on the geological criteria used, which may ultimately prove to be imprecise. In addition, limited technical and organizational capabilities, including the use of inadequate production technologies, incorrect specification of the time of delivery of materials, equipment and spare parts and an inadequate level of employee skills may impact the quantity and quality of produced coal. The risk of a methane leak remains the predominant hazard in the Group's mines. Given the fact that the Group's mining activity will continue to be largely conducted in the existing area, it is assumed that the level of mining hazards will be similar to existing ones and will impact the production volume and shape of the operated longwalls.

Risk that the performance of a mining front may be worse than expected – In the process of planning the mining of a longwall, it is impossible to ascertain the actual mining or geological conditions – such conditions are eventually discovered in the course of mining operations and have a significant impact on the performance of the mining front. Cooperation with external forwarding and transport companies - Some of the contracts entered into by the Group for the sale of coal and coke provide for the delivery of merchandise to a specific place. In the areas of transport and forwarding, the Group works with external companies which generates the following risks:

- unavailability of rolling stock, which may result in a limited ability to deliver merchandise and thus may entail contractual penalties,
- Infrastructure repairs may result in curtailing the throughput of railway routes and, as a consequence, affect the ability of the timely delivery of merchandise,
- various kinds of failures and constraints in logistics processes may generate additional costs.

In order to mitigate this risk, the Group works with a number of carriers, constantly monitors logistics companies and actively seeks the most efficient logistics solutions in consultation with its customers.

Risk associated with relations with trade unions and collective labour disputes – In the bituminous coal sector, trade unions play an important role in shaping the remuneration policy. The position held by trade unions is particularly strong on account of the headcount in the sector and its strategic influence on the functioning of the economy. The Group's failure to maintain proper employee relations may exert a material and adverse impact on the Group's operational outlook, results and financial position. There are 125 trade union organizations operating in the Group. The total number of trade union members, since an employee may be affiliated to several unions, exceeds the number of the Group's employees and as at 31 December 2016 was

34,908, which means that the union membership ratio in the Group is 127.6% (compared to 147.5% in the Parent Company).

**Stalprodukt**

Macroeconomic Environment

The results of the Group, and especially of the Profile Segment's activities, are heavily dependent on general economic conditions and in particular on the development of the general and road construction industry. The GDP growth rate is a good indicator of general economic conditions. We think that exposure to highly cyclical industries poses a threat in the event of an unexpected economy slowdown. We believe a weaker macroeconomic environment would result in volumes and price drops, especially in the steel profiles segment.

High Competition between Producers of Cold-Formed Profiles and Companies Running Steel Service Centers

Competition among the producers of cold formed profiles and companies running steel service centers is an important risk factor affecting the fulfilment of the sales targets adopted by the Group. The Group also has to compete with imports of finished products based on cheap charge materials. In this context it worth pointing out that the total import volumes of cold formed profiles in 2016 year reached 222,000 tons, which is an increase of 23.9% compared to 2015. As the company sells commodity products, imports of cheaper substitutes may negatively affect sales volumes.

Consequences of the EcoDesign Directive

The Tier 2 EcoDesign Directive, which takes effect in 2021, will compel transformer producers to purchase the highest grades of electrical steel sheets, i.e. the ones with the lowest core loss levels. If STP does not adjust its product offer to the new market requirements it may face the risk of lost sales volumes in the electrical steel segment.

Risks Related to Zinc Segment Activities

- FX risk
- risk from fluctuating prices of energy source materials,
- risk from fluctuating prices of $CO_2$ emission rights,
- approaching liquidation of the ”Olkusz-Pomorzany” mine (possibility of flooding),
- fluctuating prices of zinc concentrates and limited access to raw materials resulting from increased global demand,
- equity consolidation in the zinc sector in the mining and metallurgical areas.
- risk in relation to coke and electricity prices