

CHALLENGES OF SUSTAINABLE DEVELOPMENT IN THE MINING AND METALLURGY SECTOR IN POLAND

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The purpose of this article is to present the degree of involvement of Polish companies from the mining and metallurgical industry in activities for sustainable development. Various initiatives, which aim to promote sustainable development and Corporate Social Responsibility (CSR) are discussed. ISO 26000 is the recognized international standard for CSR and it forms the basis for sustainable development. The paper also presents problems of integrated reporting of CSR activities and an index of socially responsible companies which is the Respect Index, introduced by the Warsaw Stock Exchange. Two presented companies from the analysed sector are listed by the Respect Index.

Key words: mining, metallurgy, sustainable development, CSR, Poland

INTRODUCTION

“Everything begins with mining”, the motto of World Mining Congress from 2000 seems to be the most accurate way of describing the importance of natural resources production for the economic development of society in the national and international sense. World’s forecasts show the continuously increasing demand for metals and mining fuels. Mining and metallurgy industries have and will have in the future a strategic importance for the economic development of the world. The economic crisis caused by the management of companies targeted primarily at maximizing profits for shareholders was a turning point in the theory and practice of management. P. F. Drucker’s words “free enterprise operating in conditions of economic freedom cannot exist just because it is good for business; the meaning of this existence lies in the fact that it is needed in society” indicate the need to balance the objectives of the company which should bring both economic and social benefits. The approach to the company management focused on the objectives of a wider group of stakeholders is the basis for the sustainable development paradigm. Climate changes, environmental degradation and the constantly increasing demand cause the depletion of natural resources and thus metallurgical and mining sector creates new challenges in terms of sustainable development, which must force the rational management of these resources.

The aim of the article is to answer the question to what extent Polish companies of mining and metallurgy industries follow actions for sustainable development,

what are the current requirements and what are the new challenges that the analysed companies have to meet. What are the opportunities and threats to the achievement of sustainable development in the resources sector in Poland and what are the prospects and directions for further developments in this area.

DESCRIPTION OF STUDIED COMPANIES IN MINING AND METALLURGY SECTOR IN POLAND

KGHM Polska Miedź S.A., a producer of copper and silver, was chosen as a leading representative of metallurgical sector. According to the analytical firm CRU International, global mine production in 2012 amounted to 16 555 000 Mg. The three largest producers of copper were the state-owned company Codelco in Chile (10,6 % market share), the American corporation Freeport-McMoRan (8,1 %) and the Australian group BHP Billiton (7,2 %). KGHM Polska Miedź S.A., with a 3,2 % market share, placed the seventh place among the largest mined copper producers in the world [1].

Table 1 **The largest global mined copper producers in 2012 [2]**

Company	Production /Mg	Global share of production / %
Codelco	1 750 000	10,6
Freeport-McMoRan	1 345 000	8,1
BHP Billiton	1 198 000	7,2
Grupo Mexico	669 000	4,0
Rio Tinto	583 000	3,5
Anglo American	554 000	3,3
KGHM	537 000	3,2

In 2012, according to GFMS Ltd. Estimates, mine production of silver in the world amounted to 24 478 Mg. The first place in the ranking of the largest silver

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producers is taken by KGHM Polska Miedź S.A. with the production of 1 275 Mg, taking 5,2 % of market share. The second place was taken by an Australian company BHP Billiton plc. with the production of 1 213 Mg. Fresnillo plc. took the third place in 2012 with production 1 147 Mg of silver [3]. See Tables 1, 2.

Table 2 **Worldwide producers of silver [3]**

Company	Production /Mg	Global share of production / %
KGHM Polska Miedź S.A.	1 275,0	5,2
BHP Billiton plc.	1 213,0	5,0
Fresnillo plc.	1 147,0	4,7

Companies that produce coal are also traded on the Warsaw Stock Exchange in the mining and metallurgy sector. The largest of them is Jastrzębska Spółka Węglowa (JSW SA). In Poland, coal is a key raw material for the economy and the dominant fuel in the production of electric energy. About 95 % of the produced electric energy comes from coal where 55 % is produced from hard coal and about 40 % from brown coal. In 2012, Poland ranked ninth in the production of coal in the world and second in Europe. The largest producers are shown in Table 3.

Table 3 **The largest producers of coal in the world / million Mg [4]**

	2011	2012	Change / %	Share of total in 2012 / %
China	3516,0	3650,0	3,5	47,5
US	993,9	922,1	-7,5	13,4
Australia	415,5	431,2	4,2	6,3
Russian Federation	335,1	354,8	6,1	4,4
South Africa	251,6	260,0	3,1	3,8
Germany	188,6	196,2	2,0	1,2
Poland	139,3	144,1	3,6	1,5

According to the International Energy Agency at least by 2030 coal will be the main resource used to produce electric energy.

The JSW Group is the largest producer of high quality type 35 (hard) coking coal and a significant coke producer in the European Union and is considered to be a leading representative of mining sector in Poland. JSW's coking coal is used mainly in the production of coke, which is - in addition to iron ore - the key ingredient of feedstock for manufacturing steel [5].

CHALLENGES TO SUSTAINABILITY REPORTING IN THE METALLURGICAL AND MINING SECTOR

Socio-economic development is one of the most important issues of current times. Held in 1992 in Rio de Janeiro, a UN conference called Earth Summit was a significant event creating ideas of sustainable development. At the conference 5 key documents were created,

namely: Agenda 21, Declaration from Rio on Environment and Development, United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and The Statement of Forest Principles. The most important one is Agenda 21 which is an action plan with regard to sustainable development and environment.

Sustainable development was recognized as the Constitutional Principle of Republic of Poland and defined in the Act on the Environmental Law as socio-economic development in which there is a process of integrating political, economic and social actions with regard to natural balance in order to satisfy the basic needs of societies or citizens of current and future generations.

Strategic objectives to be achieved in accordance with the principle of sustainable development have been identified in strategic documents such as: National Strategic Reference Framework 2007-2013, as well as Poland 2030 - The Challenge of Development.

Sustainable mining stands for metal ore and coal mining action, which prioritises:

- reducing the negative environmental effects of the exploitation of minerals,
- rational use of resources deposits,
- security for possible future use of mineral resources left in abandoned fields,
- striving for optimal and consistent with the preferences of local communities and the requirements of environmental protection post-mining land development,
- protection of geodiversity [6].

The three main pillars of sustainable development of mining consist of economic growth, protection of natural resources and natural environment as well as social responsibility [7]. According to the principles of sustainable mining and sustainable mineral resources economy, it is necessary to provide security in mineral resources – the strategic ones (i.e. energetic resources or minerals; its extraction constitutes a crucial source for the economy of a country), as well as those that seem to be widely available, i.e. clay minerals for building pottery, building and road aggregates. The need for sustainable management of mineral resources refers to all stages of mineral resources economy – from the phase of gathering all the documents, through the stage of exploitation, i.e. mining actions, ore processing and the use of raw materials finished and recycled [8].

One of the main challenges of sustainable development is the fact that it requires innovative approach in terms of making decisions and the way of thinking. While advances in knowledge and technology contribute to the economic growth, they have also the potential for both supporting the resolution of risk and threats to the stability of social relations, the environment and economies [9]. Companies should be assessed in a number of areas. They are diagnosis of legal framework, commercial, management, organization and human re-

sources, technique, technologies and exploitation, financial conditions and, what should be emphasized, in the area of sustainable development [10]. A tool for the implementation of sustainable development principles is CSR strategy (Corporate Social Responsibility).

In 2001, European Commission published the Green Paper that concerns corporate social responsibility. CSR is defined as a concept by which enterprises can voluntarily integrate social and environmental problems into a commercial action system and stakeholder interaction system [11].

The latest Commission Communication - A renewed EU strategy 2011-2014 for CSR appeared in October 2011. In the document the Commission proposed a new definition of CSR as: "the responsibility of enterprises for their impacts on society". In order to fulfil these commitments, companies should have a mechanism for the integration of social, environmental, ethical, and also those related to human rights, and consumer problems with its operations and core strategy in close cooperation with stakeholders [12].

Within the framework of the CSR idea, there have been created a lot of initiatives, codes of conduct and management standards that contain directives for the organisation that concern responsible activity in favour of the society [13]. The task is to simplify the implementation of CSR on the strategic and operational levels, as well as informing the stakeholders of the CSR strategy. All of the initiatives are voluntary. While being constantly improved and upgraded, they have been created as a result of numerous expert advice and wide agreement of various groups of the stakeholders. Guidelines of the Global Reporting Initiative, GRI, in the field of sustainability reporting contain 10 general reporting rules and recommendations regarding the content, including over 80 recommended operating quantitative and qualitative indicators (economic, environmental and social) aimed at depicting organizations results. ISO 26000 is a standard developed through extensive international consultations and published in 2010. Research conducted in Poland into the knowledge of norms and standards in the implementation of corporate social responsibility confirms the existence of con-

sciousness in this respect among senior managers. The results are shown in Figure 1.

Among the various recommendations and standards for the implementation of corporate social responsibility, by far the best known is ISO 14000 - more than half of the company representatives are aware of this standard. 30 % of the company representatives declare knowledge of the ISO 26000 standard.

Commitment to the sustainable development of enterprises in the metallurgical and mining sector is recognized by publishing reports in this regard. The aim of these reports is the measurement, disclosure and taking responsibility with respect to internal and external stakeholders for performance and efficiency in the implementation of the economic, environmental and social issues.

The first CSR indexes were created in the United States. Dow Jones, which in September 1999 began publishing the index SI (Sustainability Index) should be regarded the pioneer of this phenomenon. A year later, Calvert fund started publishing the index of CSR, and the English FTSE company published the first index (FTSE4Good) in July 2001.

CSR indices in addition to their primary role, which is providing information about the current economic situation of a given segment of companies, are becoming more frequent basis for the composition of the portfolios of investment funds [14]. The RESPECT Index, which was introduced in 2009 by the Stock Exchange in Warsaw is the only in Central Europe index of CSR. This concept is an acronym of the words that define pillars of CSR: Responsibility, Ecology, Sustainability, Participation, Environment, Community and Transparency. The eligibility criteria for companies for the RESPECT Index are consistent with the requirements of ISO 26000 in the field of corporate social responsibility. The standard specifies seven major areas of social responsibility and they are: human rights, employment practices, the environment, fair operating practices, consumer issues, community involvement and community development. Indexes of social responsibility are some kind of honour for the company, thus confirming the involvement of the companies, listed in this index, to the principles of corporate social responsibility and management in a responsible and sustainable way. Two companies – KGHM Miedź Polska and JSW S.A. - from the sector of metallurgy and mining are noted in the RESPECT Index. Table 4 shows the index values of selected companies on 9th May 2014.

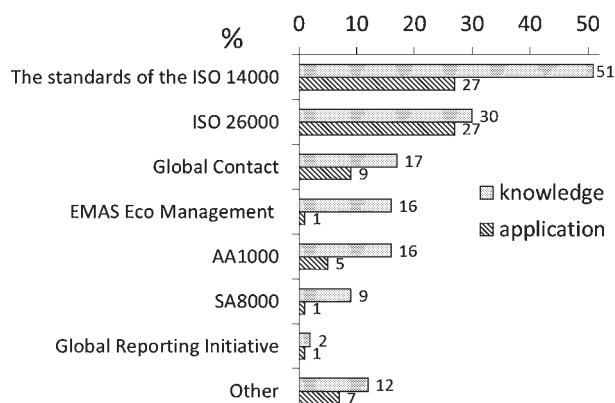


Figure 1 Knowledge and application of standards of CSR in Poland [12]

Table 4 Index values of KGHM and JSW [15]

	Package /qty	Market value of package / EUR	Share of the portfolio / %
KGHM	83 792 000	64 663 048	10
JSW	52 636 000	50 169 524	2,4

The implementation of social responsibility strategy in metallurgy and mining industry approved by listings these two companies in RESPECT Index among 23

noted companies, highlights the investment attractiveness of these companies, which consists of, among others, the quality of reporting, the level of investor relations and corporate information. The indexes confirm the involvement of the surveyed companies in Poland in the implementation of CSR principles.

SUMMARY

The subject taken in the article is for metallurgy and mining sector current and significant. Implementation of the goals and targets of three main pillars of sustainable development in the mining and metallurgy requires multiple actions with regard to both academic and practical research as well. The activities of management companies in the metallurgy and mining sector should be directed to regular updating, improvement and continuous commitment to dialogue with stakeholders documented in the form of corporate social responsibility reports.

Investigated listed companies are examples of such actions for other companies. Verification of the level of commitment of management boards in a responsible and sustainable business based on the main areas of ISO 26000 confirms the fact that these companies implement the principles of sustainable development. Strategic consideration of CSR activities of companies in the metallurgical and mining industry should influence their competitive advantage by strengthening relationships with stakeholders, improving reputation and building trust among investors and this, in turn, should offer real value of money.

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Note: The responsible translator for English language is Małgorzata Zyk-Golec, lecturer from The Silesian University of Technology, Poland