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## Transparency in extractive industry as a driver for circular economy implementation – case of Poland

### Introduction

In pursuit of the United Nations 2030 Agenda and the Sustainable Development Goals, as well as the other priorities announced in the European Union (EU) political guidelines, in December 2019 the European Commission (EC) adopted the European Green Deal COM 640. It is a new development strategy that aims to “transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use” (EC 2019). In early 2020 A New Industrial Strategy for Europe COM 102 (EC 2020) was launched to support the aims of the European Green Deal. According to the

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Industrial Strategy the projected demand for raw materials will double by 2050, therefore the effective use and diversification of raw material sourcing will be of key importance. The pursuit of the longest possible maintenance of the resources used in the EU economy is one of the objectives of the initiative announced in the new Circular Economy Action Plan throughout the product life cycle, together with their eco-design, promotion of circular economy processes and sustainable consumption.

Securing a sustainable supply of raw materials through increased recycling and the use of secondary sources will be fundamental, but primary resources will remain crucial in many local economies. Therefore, improving the extractive sector in terms of accountability and sustainable development is a very important goal both for industry and for the national and European policy. An extensive literature review on the social effects of mining industry was carried out by Mancini and Sala 2018, identifying environmental problems resulting from land use and affecting health and human rights as the most relevant social aspect in the mining sector, on the other hand, as the main positive results pointing to the benefits of income and employment. This was the result of a review of 50 studies from the literature describing the most common social effects occurring in mining. Most often, the analyzes concerned activities carried out in Australia (11) and African countries (10), only 4 of them concerned European countries (2 Greece, 1 Sweden and 1 Serbia).

Laws and policies implemented at national and EU level can contribute to mitigating negative environmental and social effects, but the accountability of mining companies and greater transparency of information about public payments to governments and Corporate Social Responsibility (CSR) or ESG (Environmental, Social and Governance) activities are essential for a better understanding and improvement of natural resource management. It is particularly important for the new EU policy promoting a holistic approach and circularity, as the extractive industries are at the very beginning of the supply chain and generate significant amounts of waste that can be effectively reused.

The transparency of the extractive industry is a main way to report on efforts made by companies to citizens and investors, especially that trust by general public in the sector is low. Social acceptance was indicated by almost half of the management of mining companies as the top business risk (Mitchell 2019). Reports should be available to all interested parties and the information should be published on company and government websites, as well as other communication channels directed to various stakeholder groups. One of the companies that reports non-financial performance and its contribution to socio-economic development thanks to amounts paid to central and local government is KGHM.

## 1. Materials and methods

The study analyzed the initiatives promoting transparency in the extractive industries globally and in EU policy. In addition, it assessed the availability of data regarding the environmental aspects and public payments related to mining and non-financial activities.

They are most often presented in CSR or corporate sustainability reports as well as in circular economy strategies, including the use of secondary raw materials and recycling.

The design stage was identified as requiring the presentation of the latest EU goals and publications presenting characteristics of European countries in relation to activities undertaken worldwide. The analysis of data, with a particular emphasis on Poland, has been based on regulations and publications, companies reports and the authors' experience in the field resulting from their scientific work and business background, as well as EU projects associated with natural resources. The Polish case study has also been founded on reports published by KGHM Polska Miedź S.A. (KGHM), the leading copper and silver company located in Poland.

### 1.1. Environmental and social responsibilities of mining companies

Corporate Social Responsibility (CSR) is a concept that has drawn the world's attention as a result of globalization, and business complexity created a demand for greater transparency and corporate citizenship. Financial profit is a key reason of CSR implementation, but the other benefits like reputation and public relations area also important (Jamali and Mirshak 2007). The ISO 26000 – Guidance on social responsibility (ISO 26000) provides instructions on how to identify social responsibility, engage stakeholders and integrate relevant behavior into the organization. Accountability and transparency are among seven key underlying principles of social responsibility.

CSR strategies define companies' activities in environmental and social areas. They are also created in the extractive sector and include environmental impact and activities, workers and human rights in general, as well as corporate governance and transparency. Taking the CSR strategic approach mining companies can maximize the impact of their operations on local communities to earn social license to operate (SLO) from workers, their families and other stakeholders (Dhawan 2014). Countries such as South Africa and India have demanded social investment initiatives, including infrastructure, education, health care and recreation. Other countries are followed. One of the good practices is reporting of real time data on air and water quality by a mine in Chile, which also makes initiatives aiming at being close to community to determine what happens after mine closure. By supporting transparency and community involvement, the company has introduced a high level of environmental achievement and can further enhance its social license to operate. This was presented during the second annual International Mines Ministers Summit (IMMS) among other case studies presenting best practices and policies supporting innovations in the mining sector and included in the IGF report Innovation in Mining (IGF 2018).

Community relations and a social license to operate have been pointed by KPMG as one of the key risks for the global mining industry along with commodity price, permitting risk and access to capital (KPMG 2020). Respondents emphasized the necessity to redefine the success of the industry using more comprehensive measures including social benefits and

long-term development. The evidence of such an approach can be also seen in the recent need to increase transparency and accountability connected to sustainable and responsible mining. The extent to which the industry is able to limit its impact on the environment will also determine its success and prosperity.

Due to transparency in monitoring the degree of implementation of environmental and social aspects by mining companies, new investments can be supported by local communities. This may result from a more detailed monitoring and assessment of mineral policy indicators at EU and country level, especially in terms of their impact on sustainable development (Janikowska and Kulczycka 2021), as well as improvement of reporting of waste from extractive industry (Kulczycka et al. 2020).

### 1.2. Public payments approach and initiatives supporting data transparency for sustainable development

Publications and specialized reports concerning the evaluation and comparison of the amount of taxes and other financial charges, as well as their effects on the competitiveness and profitability of mining in different countries have been prepared by the consulting companies for many years (Otto et al. 2000). Increased transparency and the disclosure of relevant tax information have been the subject of many debates and are becoming new standards for business. The demand for greater transparency is reflected in the programs and action plans of the Organization for Economic Cooperation and Development (OECD), G20, the European Union and the United Nations.

The European Commission (EC) announced in 2015 an extensive list of initiatives in its Action Plan on a Fairer Corporate Tax System (EC 2015) setting out a more comprehensive European approach to corporate taxation, building on the OECD Base Erosion and Profit Shifting (BEPS). The aim is to provide greater transparency and to build a new approach to public payments promoting development of a fairer and more efficient tax system.

Reporting country-by-country initiatives and their frameworks being in place or under implementation was analyzed and presented by PwC (2016), including EITI.

Works are conducted on the EU taxonomy regulation, the result of which is a unified system of classification of economic activities that can be considered environmentally sustainable. In 2019 the EU Technical Expert Group (TEG) on Sustainable Finance prepared the report Taxonomy: Final report of the Technical Expert Group on Sustainable Finance (EU Technical Expert Group of Sustainable Finance 2019), laid the foundations for the EU Taxonomy as a tool to support investors and companies in the transition to a low-carbon and resource-efficient economy. In 2020, the Taxonomy Regulations were approved by the European Parliament (EU 2020) to support investments in green and sustainable projects. The widespread favorable use of the Taxonomy will require transparency by investors and companies. Further development of the EU Taxonomy is planned through a new Platform on Sustainable Finance, which was launched at the end of 2020. The first company reports and

investor disclosures are planned at the beginning of 2022. Unfortunately, work for the mining sector has not been completed and was recommended for further work. The role of the sector in growing demand for key raw materials needed for existing and new technologies is crucial but has to consider climate goals, as well as a circular and resource efficient economy.

The global standards for tax sustainability reporting were prepared by the Global Reporting Initiative, an independent international organization dealing with sustainability reporting since 1997 (GRI 2019). It supports companies and governments in understanding and communicating their impact on climate, human rights and health, as well as social-well-being. GRI standards can have a crucial role in encouraging more voluntary disclosure of corporate information.

Public tax reporting expands transparency and develops trust and credibility in the tax practices of companies and institutions and in the tax systems. It enables stakeholders to make an informed assessment of the tax situation of the organization. Tax transparency also forms the basis of public debate and helps create a socially desirable tax policy.

Due to the development of CSR along with the other initiatives, the transparency and availability of data on the amount of taxes paid is also growing in the literature. In their article Van der Zwan and Nel (Van der Zwan and Nel 2010) analyzed the impact of implementing a tax on mineral extraction and the fuel mining industry in the Republic of South Africa. They concentrated mainly on the effects of the additional burden on corporate profits. The reduction in profits limits the prospects of exploration works for companies. A similar analysis in the context of tax in Republic of South Africa was carried out by Cawood (Cawood 2011). He analyzed additional budget revenues, which may be even greater than one might think judging from the principles of fair distribution. It should also be considered that almost every country has specific taxes and duties on mining.

Some countries introduced economic instruments like landfill and incineration taxes to promote recycling and recovery. Even with the improvements noticed in the recent years Poland still, remains reliant on coal resulting in being one of the more resource-intensive countries in the OECD. Different disposal taxes depending on the environmental harm can be introduced for different types of waste (OECD 2019). As for Polish sources, it can be stated that the extraction tax negatively affects the financial position of the companies concerned. An example is the copper-producing company KGHM. In his article Połczyński (Połczyński 2014) does not question the legitimacy of the tax and its positive impact on public finances, but points to the fact that it undoubtedly limits the company's investment capacity.

There is growing transparency and accountability in the extractive industry, also resulting from global initiatives, examples of which are presented in Table 1.

One of the most important is the Extractive Industries Transparency Initiative (EITI), launched in 2003 “the global standard to promote the open and accountable management of oil, gas and mineral resources” (EITI 2009). The EITI standard requires disclosure of information along the entire value chain, from extraction to income contributing to community development through taxes and charges paid to governments. The EITI was adopted by 53 countries mostly from low-income and aid-dependent African countries, but only

Table 1. Examples of initiatives supporting sustainable development, impact on environment and society  
 Tabela 1. Przykłady inicjatyw wspierających zrównoważony rozwój, wpływ na środowisko i społeczeństwo

International Initiative	Subject of activity	Number of countries/entities	Number of European countries/entities
Extractive Industries Transparency Initiative (EITI)	Providing the global standard of transparency in extractive sector (oil, gas and mineral resources)	53 countries	3 countries: Germany, Netherlands, Norway
International Council of Mining and Metal (ICMM)	Organisation focused on a safe, fair and sustainable mining and metals industry	27 of the world's leading mining and metals companies and 36 associations	6 companies: 3 – UK, 1 – France 1 – Norway, 1 – Switzerland 16 associations: 10 – UK, 5 – Belgium, 1 – France
Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF)	Voluntary initiative supporting more than 70 countries involving in the use of mining for sustainable development to ensure the reduction of negative impacts and the sharing of financial benefits	76 countries	6 countries: France, Germany, Romania, Netherlands, Sweden, UK
OECD Responsible Business Conduct (RBC)	Integrating within the core of businesses the management of risks to the environment, people and society	48 National Contact Points	28 National Contact Points: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia Republic, Slovenia, Spain, Sweden, Switzerland, Ukraine, UK
Responsible Business Alliance and the Global e-Sustainability Initiative, Responsible Minerals Initiative (RMI)	Providing Responsible Minerals Assurance Process that offers companies and their suppliers an independent, third-party audit to determine which smelters and refineries can be verified as having responsible mineral sourcing systems in line with current global standards; Conflict Minerals Reporting Templates helping companies disclose and communicate information about smelters in their supply chains; white papers and guidance for responsible mineral sourcing and regular reporting	more than 380 companies and associations from 10 industries 15 associations 375 companies	4 associations: 2 – Germany, 2 – Belgium Verband der Automobilindustrie (VDA) (Germany) Global E-Sustainability Initiative (GeSI) (Belgium) 66 companies: 15 – Germany, 11 – UK, 10 – Sweden, 9 – Netherlands, 7 – Switzerland, 6 – France, 4 – Ireland, 1 – Italy, 1 – Luxembourg, 1 – Finland, 1 – Switzerland
Global Reporting Initiative (GRI)	Helping companies and governments around the world understand and communicate their impact on key sustainability issues such as climate change, human rights, governance and social well-being	more than 600 organizations from 66 countries and 35 industries	no data

Source: own table based on initiatives' web pages (EITI 2009; International Council of Mining and Metals; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development; <https://www.oecd.org/investment/toolkit/policyareas/responsiblebusinessconduct/>; Responsible Business Alliance and the Global e-Sustainability Initiative).

a few from the EU (Germany, the Netherlands, Norway). Being supported by a coalition of governments, companies and societies from many resource dependent countries, the EITI is generally considered as a success story (Rustad et al. 2017). However, there are also critical comments on EITI activity. After an analysis of viewpoints and research publications Van Alstine (Van Alstine 2017) evaluates the activity of EITI and reports the need to improve the adequacy of disclosure to communities and transparency policies in the field of resource management, taking target groups for which policies are established and various activities are undertaken into consideration.

The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) supports 75 countries involved in the use of mining for sustainable development to ensure that the negative effects are reduced and the financial benefits shared. IGF focuses on improving resource management and governments' decisions in the field of mining. From 76 countries that joined IGF only 6 represented Europe (France, Germany, Romania, the Netherlands, United Kingdom).

The other worldwide organization strengthen environmental and social performance of mining companies, devoted to safe, fair and sustainable mining and metals sectors is the International Council of Mining and Metals (ICMM) associating 27 world's leading mining and metals companies and 36 regional and commodities associations.

In order to support companies in reporting non-financial factors, the world's largest companies agreed at the Annual Meeting of the World Economic Forum to develop common metrics for sustainable value creation. The conclusions of consultation process have been presented in the report titled Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation (World Economic Forum 2020) and include uniform non-financial reporting framework covering environmental, social and corporate governance issues. A standard set of indicators can be important in encouraging more companies to expose information in order to properly understand the industry limitations and its activities for the benefit of local communities and the environment. This is important not only for variety groups of stakeholders but also shareholders from the point of view of sustainable development to allocate capital efficiently.

## **2. Examples of economic instruments imposed the promotion of secondary raw materials and recycling on the extractive industry**

There are many economic instruments supporting the objectives of a circular economy and promoting the more efficient use of natural resources. Out of the ones introduced within activities aiming at encouraging the use of secondary resources, the main ones are presented below after OECD (OECD 2019):

- ◆ Taxes increasing the cost of polluting activities (e.g. landfill and incineration taxes) and thus discouraging such production and resulting in the development of less harm-



ful processes and technologies including waste recovery and recycling and leading to a circular economy model; to reduce the amount of waste, different taxes can be imposed on the disposal of different types of waste, depending on environmental damage.

- ◆ Fees and commissions used to recover the costs of providing goods and services, including utility services or waste storage fees.
- ◆ Deposit-refund system imposing an additional fee on the product that may have a negative impact on the environment, including special recycling fees and extended producer responsibility measures.
- ◆ Subsidies or tax exemptions used as a support to better waste management.
- ◆ Tradable permit schemes that can be used to allocate emissions or rights to exploit resources to reduce exploitation of natural resource.

Various European countries impose taxes or duties on primary materials, which have effect on prices and profitability of companies and investments, as well as the raw material consumption and usage of secondary resources and recycling having positive effects on the environment and the innovation efforts. On the other hand, environmental payments by mining companies often represent significant financial revenues for local (and national) budgets (Pietrzyk-Sokulska et al. 2015).

Resource taxes should promote resource efficiency, but in some cases national mineral strategies assume a different approach. The example is the Swedish metal sector analyzed by Johansson et al. (Johansson et al. 2014). It has shown that despite all the activities undertaken towards the circular economy model, the metal mining sector was subsidized much more than the metal recycling sector (EUR 40 million vs. EUR 0.6 million respectively in 2010). If the landfill tax exemption is considered a subsidy, its level for the metal mining sector will increase to around EUR 4.000 million. Several years later, in 2019 the OECD presented its review on waste management and circular economy in selected countries in which gave the example of Sweden as a country with progressive increasing of the tax rate for virgin aggregates (rare natural gravel) to encourage substitute usage.

In Estonia companies from mining industry pay a tax for the extraction and use of resources, and given the amount of the oil shale resources it could be a significant source of income. However, the OECD review noticed that the amount of tax is connected to the estimated value of resources, thus has recently been reduced because of the lower price of oil helping the industry, weakening the effectiveness of such a tax in promoting resource efficiency. The mining fee has also been imposed on the extraction of primary building materials in Hungary, but the reason of its implementation was not the protection of the environment and therefore was set up on too low level to encourage usage of secondary resources.

In Poland, where copper mining has taken place, the tax on the extraction of certain minerals was introduced in 2012 to enhance material productivity (Act of March 2, 2012 on the Tax on the Extraction of Certain Minerals). It is calculated on the basis of the amount of copper and silver contained in the produced concentrate and its amount depends on the prices of these metals and the USD/PLN exchange rate.



An EY analysis conducted in 2012 showed that the introduction of the mineral tax resulted in increasing effective tax rate (ETR) for new copper mining projects up to 89% and extending the payback period by 11 years, thus such investments in Poland has been not profitable anymore. At the same time in other countries the ETR was usually between 40% and 55% (EY 2019). Currently, there is a trend of the rationalization of the introduced taxation systems for the extraction of raw materials in order to strengthen the country's competitiveness in the field of mining investments. For this reason, different types of investment incentives are introduced to reduce the tax burden to support the investor having to incur significant expenses in the first years of investment. This can be in a form of the right to deduct royalty from the tax base of CIT or referential settlement of expenses incurred in the pre-production search phase. Both of them were introduced among others in Australia, Canada, Chile, China, Russia and USA, none of them in Poland (EY 2019).

The role of tax in mining investment decision, optimal level of taxes and effective tax administration was presented by EITI 2009. This is the reason for reforming the tax system to encourage larger mining investments and participate in mining revenues.

Tax avoidance, as a CSR issue of utmost importance to the long-term viability of companies and the government's ability to function, has been described by Stephenson and Vracheva (Stephenson and Vracheva 2015). The paper presents the results of a CSR literature study in the field of tax avoidance, pointing to different opinions about the proper management of tax liabilities, including in favor of reducing the tax burden, as well as in favor of paying statutory taxes.

Tax avoidance issues in Finland were also presented by Finéra and Ylönen (Finéra and Ylönen 2017). Based on numerous case studies, the key strategies adopted by Finnish mining companies to reduce the tax burden are presented, focusing on three mineral ore mining companies operated by two Canadian enterprises. They applied thin capitalization, financing investment under an intra-group debt arrangement from a low-tax jurisdiction, un-capitalized Finnish subsidiaries with a holding company that used intra-group debt to purchase shares in mining activities and shifted profits abroad by using a Finnish holding company to invest separately in a mine in another country.

As stated in the report titled *Aligning Fiscal Policy with the Circular Roadmap in Finland* (Green Budget Europe 2018) policy measures can be defined to decrease final energy consumption and negative emissions, stimulating the national economy and creating jobs at the same time. The report includes a tax shift scenario and other instruments to promote the Finnish carbon neutral goals, also including environmentally harmful subsidies and social benefits. The key issue is to use the revenues from the extraction of raw materials for the benefit of the whole society.

On the other hand, governments continue to support mining. Only for coal production and consumption G20 Governments allocated funds in the amount of at least USD 63.9 billion per year in 2016–2017 through tax support, public finance and investments of state-owned companies, spending relatively small amount of support for the transition from

coal mining to site reclamation and support for employees and the community (Gençsü et al. 2019).

Subsidies and fiscal incentives can be introduced to support the transition to a circular economy by supporting material substitution and solutions that reduce material consumption and develop services, promoting business models that do not degrade ecological processes, and so on.

### 3. Polish case study – KGHM

According to Pactwa et al. (Pactwa et al. 2018) municipalities in which mining activities are conducted, contributing to their budgets, can operate in line with the sustainable development goals. This improves the living conditions of local communities, thus giving the chance for the future development of areas that may be intended for exploitation.

Table 2. KGHM payments to Polish governments in 2019 (in PLN millions)

Tabela 2. Płatności KGHM na rzecz polskich rządów w 2019 r. [mln zł]

Payments to governments – breakdown by level of government	Taxes	Concession payments, discovery and production bonuses	Other payments and considerations for concessions	Payments to governments – total
Government administration authorities	1 527	81	–	1 608
♦ Central	–	81	–	81
♦ Ministry of Environment	–	38	–	38
♦ National Fund for Environmental Protection and Water Management	–	43	–	43
♦ Local	1 527	–	–	1 527
♦ Regional State Forests Directorate	–	–	(11)	(11)
♦ Tax Offices	1 527	–	–	1 527
♦ Forests Districts	–	–	11	11
Local government authorities	109	65	6	180
♦ Marshal's Office	–	–	1	1
♦ Local county offices	–	–	5	5
♦ Towns and municipalities	109	65	–	174
Total	1 636	146	6	1 788

Source: consolidated report on payments to governments (KGHM 2020).

Growing transparency in CSR activities and payments from the extractive industry to governments is visible at the level of companies. Polish company KGHM – a leader in copper and silver production, as a modern and global organization set up an environmental policy which reflects the company's concern for the natural environments in which it operates. For many years KGHM undertakes actions to reduce its negative impact on the natural environment to the lowest possible degree. At the same time KGHM takes into consideration the necessity of minimize its impact on local communities.

In the middle of 2018, KGHM adopting the Code of Ethics (KGHM 2018) declared its focus on development in a sustainable manner, respecting the principles of ethics, transparency and considering good industry practices in the field of being a socially and environmentally responsible enterprise, relying on the Code of Ethics of the KGHM Capital Group in this matter.

Information about taxes paid by KGHM is presented in reports on payments to governments published every year. Reports show taxes imposed on the income, production or profits of the KGHM (mainly the mineral extraction tax), excluding taxes on consumption.

Almost all charges (above 91%) were paid to local authorities, more than 85% were taxes directed to local tax offices.

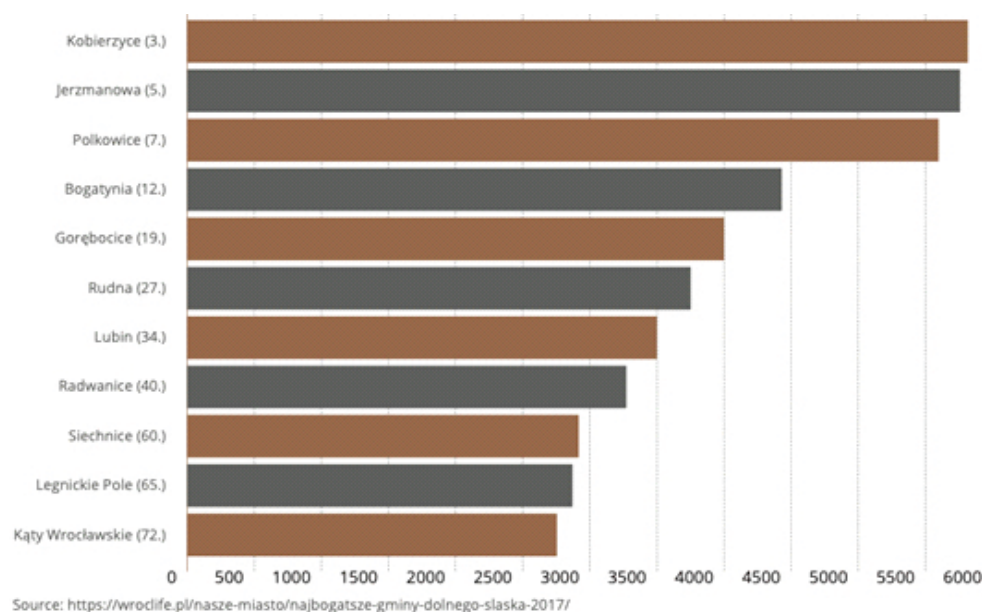


Fig. 1. The richest municipalities of Lower Silesia  
(ranking according to tax income per capita in PLN, ranking in Poland given in brackets)  
Source: KGHM 2019

Rys. 1. Najbogatsze gminy Dolnego Śląska  
(ranking według dochodu podatkowego na mieszkańca w zł, ranking w Polsce podany w nawiasach)

The task policy and possible changes in the royalty formula (the minerals extraction tax) was indicated as one of the key risks in KGHM activity. The minerals extraction task is the largest burden for the company, i.e. more than 80% of all taxes and charges and 12% of total expenses by nature (KGHM 2019). This is the result of the copper and silver tax introduced in Poland in 2012. For comparison, before introducing the copper and silver tax, taxes and charges accounted for 3% of total costs (KGHM 2011). It can be stated that the extraction tax is a factor negatively affecting the financial position of the company and limiting the company's balance resources and investment capacity.

On the other hand, the taxes paid by KGHM have a positive impact on public finances, giving the possibility of local investments, which increase employment, acting in favor of social development and the environment. The KGHM approach to cooperation with local communities has been defined in the CSR strategy. The company collaborates with the municipalities of the Copper Basin (esp. Głogów, Polkowice, Rudna, Gorebocice) in many areas, including development strategies resulting in increasing the wealth of local communities.

## Conclusions

The responsible development and the safe supply of raw materials have been a high-priority topic on the EU's political agenda for years. To ensure resource efficiency and obtain a SLO, companies demonstrate that raw materials are used effectively and that social initiatives have a positive impact on the community. This mainly applies to sectors with a significant environmental impact, such as the extractive industry, where the transparency of payment information to governments can reduce the negative social attitude, increase their credibility and allow for further development. At the very beginning of the supply chain, the extractive industry is very important for CE model of many products. Therefore, the latest EU policy takes the holistic approach to the upstream activities into account.

Along with the ambitious program of actions for growth, stimulating investment and deepening the integration of economies, the European Commission (EC) strives to meet the demand for social justice and economic growth also through fair and effective tax coordination. The EU needs a tax system that meets the challenges of the modern economy and supports the broader political goals of the Union. The European Commission and the Member States of the European Union are working to make tax systems more transparent, accountable and more effective in all areas.

Countries are also working on environmental fiscal reform better aligning taxes and tax-like instruments with environmental damage, and combined with socially productive uses of generated revenues. An important aspect of this is the transparency of income flows to central and local budget from taxes and financial charges. Governments should also be transparent about the use of revenues from mining companies for the community directly affected by mining effects. Increasing transparency for European businesses and governments can lead to a proper understanding of the industry's limitations and actions towards

local communities and the environment. It can also increase social acceptance and public confidence in mining activities and support sustainable approach.

What is the most important is that companies recognize the value of innovative collaboration with communities to their performance and the social license to operate, and communities increasingly expect it, given their positive relationship to environmental and social performance, transparency and accountability. Sustainability reporting is a necessary tool to transfer information from mining companies to their stakeholders.

The example of the Polish company promoting transparency and sharing information on payments to local and national budgets, as well as presenting its environmental policy, is KGHM. KGHM takes actions to limit its negative impact of the company's operations on the environment, with simultaneous support of local communities.

Unpredictable events such as the COVID-19 pandemic further demonstrate the need for targeted and systematic communication by mining companies, not only with local communities, but also with their suppliers and customers. Unified sustainability reporting frameworks and standards can play an important role in encouraging companies to report. Various reporting initiatives, and the lack of a unified approach and target audience have contributed to confusion among mining companies and their stakeholders. In addition, the lack of national legislation on sustainability reporting in the extractive industry and the resulting great freedom in deciding by mining companies what to disclose, could have played a role in the perceived lack of quality in reporting. In the countries where mining sustainability reporting regulations exist, they are often limited to a specific impact such as GHG emissions or waste. Despite the presented barriers, the disclosure of an increasing amount of non-financial information has continued. Furthermore, there have been some recent developments that give hope for a step towards better disclosure of sustainability information.

The work is underway to develop EU guidelines on Social License to Operate (SLO) and an accompanying toolkit that will increase public awareness of mining at national, regional and public levels, developing European standards of social responsibility, redefine the role of regional regulators in promoting SLO and provide all stakeholders with concrete tools to improve transparency and communication to build trust. Such information should be available to all stakeholders in published reports and on company and government websites. The social acceptance of mining activities can be increased by making tax systems more transparent, accountable and more effective in all areas. The EU and individual Member States are working on that to support European goals and include in new standards for business. Environmental fiscal reform, understood here as the improved alignment of taxes and tax-like instruments with environmental damages coupled with socially productive ways of using revenues raised, has already been implemented to varying degrees in some countries.

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**TRANSPARENCY IN EXTRACTIVE INDUSTRY AS A DRIVER  
FOR CIRCULAR ECONOMY IMPLEMENTATION – CASE OF POLAND****Key words**

extractive industry, sustainable mining, data transparency,  
environmental and social factors, financial burdens

**Abstract**

The Green Deal and the New Industrial Strategy for Europe recognize the access to raw materials and the security of supply from secondary and primary sources as essential for Europe's transition to sustainability. It can be expected that with the development of the circular economy approach, the extraction of primary resources would be diminished, but it is emphasized that a circular economy may need a wider range of metals and other raw materials critical to the new environmentally friendly technology, especially in renewable energy and mobility. Therefore, the latest global initiatives and EU policies focus on ensuring resource efficiency in a holistic manner, from the extraction of raw materials to the re-use of the end products, which requires data transparency not only on material and waste flows, but also on financial and economic burdens including incentives and subsidies. In addition, for sectors with significant environmental impacts, the transparency of information on payments to central governments and local authorities can increase social acceptance and accountability and allow for further development. The paper analyzes regulations and initiatives supporting the disclosure of wider data than required in financial and corporate social responsibility reporting related to the implementation of a circular economy. As circular economy indicators take upstream resource flows into account, the transparency of environmental and economic data in the value chain is required, for example for the calculation of the environmental footprint. Moreover, transparency is important for mining companies' stakeholders to increase social acceptance of mining activities and facilitate the transition to a circular economy.

**TRANSPARENTNOŚĆ W PRZEMYSŁE WYDOBYWCZYM JAKO SIŁA NAPEŁDOWA  
WDRAŻANIA GOSPODARKI O OBIEGU ZAMKNIĘTYM – PRZYPADK POLSKI****Słowa kluczowe**

przemysł wydobywczy, zrównoważone wydobywanie, transparentność danych,  
czynniki środowiskowe i społeczne, obciążenia finansowe

**Streszczenie**

Zielony Ład i Nowa Strategia Przemysłowa dla Europy uznają dostęp do surowców i bezpieczeństwo dostaw ze źródeł wtórnych i pierwotnych za kluczowe elementy przejścia Europy na zrównoważony rozwój. Można się spodziewać, że wraz z rozwojem idei gospodarki o obiegu zamkniętym wydobywanie surowców pierwotnych zostanie zmniejszone. Podkreśla się jednocześnie, że gospodarka

o obiegu zamkniętym może wymagać szerszego zakresu metali i innych surowców krytycznych dla nowej, przyjaznej dla środowiska technologii, zwłaszcza w dziedzinie energii odnawialnej i mobilności. Dlatego najnowsze globalne inicjatywy i polityki UE koncentrują się na zapewnieniu efektywnego gospodarowania zasobami w sposób holistyczny, od wydobycia surowców po ponowne wykorzystanie produktów końcowych. Wymaga to przejrzystości danych nie tylko dotyczących przepływów materiałów i odpadów, ale także obciążeń finansowych i ekonomicznych, w tym zachęt i dotacji. Ponadto w przypadku sektorów o znaczącym wpływie na środowisko, przejrzystość informacji o płatnościach na rzecz rządów centralnych i władz lokalnych może zwiększyć akceptację i odpowiedzialność społeczną oraz umożliwić dalszy rozwój. Artykuł analizuje regulacje i inicjatywy wspierające ujawnianie szerszych danych niż wymagane w raportach finansowych i społecznej odpowiedzialności biznesu, związanych z wdrażaniem gospodarki o obiegu zamkniętym. Ponieważ wskaźniki gospodarki o obiegu zamkniętym uwzględniają przepływy zasobów, wymagana jest przejrzystość danych środowiskowych i ekonomicznych w łańcuchu wartości, na przykład do obliczania śladu środowiskowego. Ponadto przejrzystość jest ważna dla interesariuszy przedsiębiorstw górniczych, aby zwiększyć społeczną akceptację działalności górniczej i ułatwić przejście na gospodarkę o obiegu zamkniętym.

