



# Alternative Ways of Financing in the Global Mining: ECA Export Credit Agencies

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## Abstract

Nowadays, mining enterprises are perceived through the prism of “the black PR, what causes the general reluctance of the financial market and the withdrawal of the traditional financial institutions from providing capital in the form of debt for the mining industry. “While spending from national budgets on coal fell, as did tax breaks for it, other forms of support - from development finance institutions, export-credit agencies – soared.” [1] This article analyses the possibilities of using these sources depending on the life cycle phase of a geological and mining project. In the following part of the article, the main attention is paid to ECAs, which offer much more opportunities than traditional banks, among others: chipper credits, longer terms of credits and tax exemptions. The article presents the largest Export Credit Agencies in the world and indicates their characteristic features compared to conventional sources of financing. The largest financing countries, as well as acquiring such capital in relation to the mining industry, were identified.

**Keywords:** alternative source of financing, ECA, mining financing

## 1. Introduction

The mining industry is dynamically changing, it must constantly respond to constant changes, such as: business cycles and changing trends in commodity markets. It has to react to the pressure and preferences of shareholders and capital markets. It has to face with environmental restrictions, which require constant improvement of the technologies and processes of the entire life cycle of the geological and mining projects. All of that causes that costs are increasing at every stage of operation of mining companies. The mining industry must constantly search various sources of financing. This task is not easy because of mining industry “black PR” which comes from global climate policy which is aimed at achieving climate neutrality by reducing CO<sub>2</sub> emissions. The “black PR” of mining causes the general reluctance of the financial market and the withdrawal of the traditional financial institutions from providing capital in the form of debt for the mining industry. Therefore, mining enterprises, out of concern for their existence, are looking for innovative sources of financing, that will be an alternative to traditional sources.

This article presents the essence of the Export Credit Agency (ECA) operation with the current characteristics of the ECAs’ market and the units operating on it. It shows the involvement of ECA financing in the mineral resources mining in the world and it indicates the advantages and disadvantages of such financing.

## 2. The problems of mining industry financing and the units operating on it

Mining enterprises are not able to function properly without adequate financing at the operating or investment level. Currently, one of the key challenges of the mining industry is to obtain the capital. They have to create an optimal structure of debts as well as appropriate financial leverage, which will allow for the effective implementation of geological and min-

ing projects, and thus to generate value for the owner.

From the traditional capital donors point of view, the mining industry is unattractive, in opposition to enterprises operating in a stable market environment. This perception is influenced by: price instability, the inelastic structure of assets and general formal, legal or political conditions. Therefore, mining companies cannot take full advantage of financial market opportunities. High costs, lack of capital for development and problems related to maintaining current financial liquidity lead to the rejection of prospective projects, the slowing down of already implemented projects, their closure during implementation, or abandonment at the planning stage.

The financing of particular problems of the coal mining and conventional energy industries became stronger about 10 years ago, when the anti-carbon policy was introduced. In 2013, U.S. President Obama announced his Climate Action Plan that included a commitment to end US support for the public financing of new coal plants overseas. The same did governments of the UK, Denmark, Finland, Norway, Sweden and Iceland.

In the same year The World Bank announced that it would limit funding for new coal-fired power plants in developing countries. The European Investment Bank has introduced Emissions Performance Standard, where it has been declared that the EIB will finance low-emission projects that have a limited negative impact on the environment. All of this was sealed by the OECD Secretary General Angel-Gurría, who called “every government” to reform fossil fuel subsidies and to address incoherent and inconsistent policies, both of which encourage harmful fossil fuel production and consumption. [2]

In 2014, IPCC in a new report on Climate Change claimed that in the nearest future the global temperature will increase by 2°C if the world does not reduce CO<sub>2</sub> emissions. This resulted in further cuts in financing for the hard coal mining and conventional energy industries.

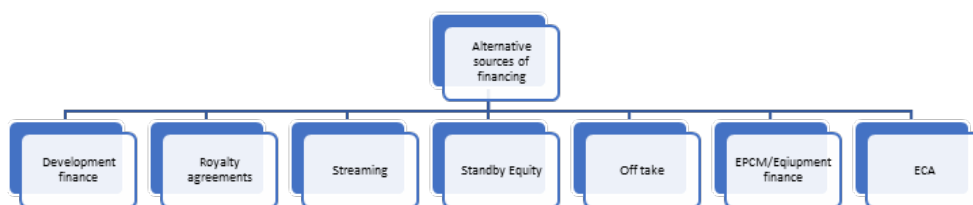


Fig. 1. Alternative forms of financing. Source: Own elaboration based on [5] [6]  
 Rys. 1 Alternatywne źródła finansowania. Źródło: Opracowanie własne na podstawie [5] [6]

In 2015, The ING Bank announced a funding reduction for coal mining entities and confirmed this non-involvement in new investments, the sales of which come at least in 50% from the coal mining segment. This policy is a complete change of the current strategy of ING Bank, under which it was one of the thirty largest and most committed entities financing the mining industry in the world. The financing was estimated at USD 4.5 billion in 2007-2015. Sixty percent of this amount was the bank's lending activity, and 40% was their equity involvement in shares or corporate securities of mining enterprises. [3]

Subsequently, the state-owned Norges Bank Investment Management, the largest investment fund in the world, withdrew from investments in mining and energy companies related to hard coal. The indicated financing limitations applied to over 50 companies in which over 30% of sales revenues came from coal mining or coal-based energy. However, Norges Bank did not withdraw from the largest three entities in the world that are coal producers, i.e. BHP Billiton, Rio Tinto and Glencore, because in their case the diversification and mass revenues from other mining business segments result in a lower share of revenues from coal sales. The funds cut concerned mainly American enterprises (e.g. Peabody Energy), Chinese (e.g. China Coal Energy), Indian (e.g., Tata Power), three Japanese and several European enterprises (e.g. Tauron, Bogdanka). [4]

The examples mentioned above, show the need of the alternative forms of financing implementation in mining enterprises, in that hard coal enterprises, which are strongly exposed to the lack of capital.

### 3. The alternative forms of mining financing

The facts indicated in the previous chapter resulted that mining enterprises have reached for alternative sources of financing, which were previously used as a form of monetization in geological and mining projects, but only for products which were accompanying the main mineral in the deposit.

The use of alternative sources ensures obtaining financing at specific stages of the life cycle of a geological and mining project, where the low value of the project results from the high risk of failure and financial losses for the capital donors.

A particular demand for such financing arises in the initial phases of the project life cycle, which are characterized by significant investment outlays and negative cash flows.

The Figure shows alternative forms of financing.

The sources of financing, which are shown above, due to their specificity, are used at specific phases of geological and mining projects' life cycle. The use of specific alternative financing is usually assigned to a specific phase during which

specific works are performed with a specific credit risk as well as the perspective of a potential investor (Table 1).

The phase of research work (exploration) is carried out after concessions and appropriate rights are obtained (although this is not always the determining factor). The research work is focused on areas with the highest mineralization of the deposit. From an investor's point of view the financing of this phase is very risky. Entrepreneurs in that phase can reach for alternative sources of financing such as: development finance, royalty agreement and standby equity.

The phase of development work (deposit estimation) relies on the identification of the individual, characteristic parameters of the deposit. That kind of works have to focus on establishing of the technical feasibility and commercial viability of extracting the mineral resources, as well as on determining the expenditure incurred for the preparation and providing access to the deposit. This phase is completed when the mineral deposit is identified and the decision to build a mine is made. In that phase there still is a high risk for the investors. Mining entrepreneurs can reach for alternative sources such as: development finance, royalty agreement or off take financing.

The construction phase of geological and mining projects is one of the most capital-intensive phase. At that phase, the deposit is made available for exploitation. In that time the mining entrepreneur has to obtain many permits, which often extends this phase. From an investor's point of view it is still high risk to invest in that project. However, at this phase there appears to be more options of alternative forms of financing such as: development finance, streaming, off take, EPCM/equipment finance and ECA.

The last stage where alternative sources of mining financing are needed is production. This stage consists of two phases: production indication and production. The difference between them is that in the first phase we deal with setting up the production process and when this is done then follows full production (extraction). Extraction can last many years (depending on the deposit, resources owned and the extraction techniques and the technologies used). During this time, there may be changes in the estimation of resources from a technical and economic point of view. These changes are the primary assumptions of the geological and mining project. Other differences between the two phases are in the area of the risk. The phase of production initiation is medium risky for the investor and full production is low risky. In both phases mining entrepreneurs can reach for streaming financing as an alternative to traditional financing sources.

Summing up, the possibility of using alternative sources of financing is the most important in the early and initial phases

Tab. 1. The risk and investor's perspective at various phases of geological and mining projects depending on the source of alternative financing.  
Source: Own elaboration based on [5] [6]

Tab. 1. Ryzyko i perspektywa inwestora na różnych etapach cyklu życia projektów górniczych w zależności od alternatywnego źródła finansowania.  
Źródło: Opracowanie własne na podstawie [5] [6]

Phase	Research works- exploration	Development works – estimation	Construction	Production indication	Production
Risk class	No rating	No rating	No rating/high yield	high yield	Investment
Investor's perspective	High/ unacceptable risk	High risk	High risk	Medium risk	Low risk
Development finance	✓	✓	✓		
Royalty agreement	✓	✓			
Streaming			✓	✓	✓
Standby Equity	✓				
Off take		✓	✓		
EPCM/Equipment finance			✓		
ECA			✓		

of the life cycle of a geological and mining project, where the investor's perspective is associated with high investment and credit risks. When the project enters the next phases leading to the launch of production and achieving maximum production capacity, the mining corporation can reach for traditional forms of financing through external capital, such as loans, corporate bonds, convertible bonds, etc., which will be more achievable at this point.

#### 4. Export credit agencies

The first export credit agency, the Export Credits Guarantee Department (ECGD) of the United Kingdom, was established in 1919. ECGD was established to support the export of domestic products (initially to Russia), as well as to support the labour market. The ECA has established British exporters in competition on foreign markets through loans, taking on cross-border risks, insurances and guarantees.

In 1933, another ECA Export-Import Bank of the United States (US Exim bank) was established. For few decades there was a stagnation period in the raising of export credits agencies, until after the Second World War. [7]

The ECAs were limited to the role of a lender of last resort, they were used only in the case of a lack of commercial appetite in the private financial sector [8]. In 1980s the ECAs began to decline, but it changed in 2008 in the time of the world financial crisis. During that time banks retreated from export financing and the ECAs provided the necessary liquidity to support the international trading system. [9] Official export credit agencies were critical 'shock absorbers', supporting the survival of the international trading system. [10]

The newest EXIM's report sum up that now exist more than 1 hundred of national ECAs, which deliver \$215 billion in form of export support in loans, guarantees, and insurance to domestic firms' exports of goods, services, and investments. [11]

The ECAs are financed by state funds, which means that they are not affected by problems with market liquidity. At the same time, they constitute indirect support of the state in financing domestic enterprises on foreign markets, as part of their capital investments or sale of their products, services or intangible assets in the form of the technology. The ECAs also ensure coverage for political risks, which in emerging markets can be particularly high and costly in commercial banks. To

reduce exposure to foreign exchange risk the export agencies provide financing in the local currency in which an entity generates revenues on the foreign market (Figure 2).

Export agencies are able to extend the debt repayment to around twelve years, while in developed countries, according to the OECD, this period usually does not exceed ten years. By offering longer payback periods, the ECAs are a serious competition for commercial banks. In addition, the financial costs of the financing granted under the ECAs are much lower than in the case of commercial banks.

ECAs have a much greater creditworthiness than banks and other financial institutions, which means that they can support the financing of projects up to several billion USD. The financing often reaches to 85% of an eligible contract value and covers the agency's risk and 30% of the local costs of the export value. As a result, the obtained financing may significantly exceed the equity of the project, and therefore it may be characterized by a high degree of financial leverage. That is impossible to achieve in terms of bank financing. ECAs also has tax advantages, this financing is exempt from withholding taxes. Thus, it is an attractive property that determines the profitability of projects in countries with restrictive tax policies.

The opponents of the ECA point to hidden mechanisms of supporting and financing activities, especially in developing countries, for economic entities from developed countries, which naturally strive to expand sales markets and ensure additional revenues for themselves. At the same time, it is believed that ECAs are state-owned vehicles that ensure the functioning of domestic entrepreneurs, who are allowed to expand internationally, outside their domestic markets, where they are unable to function effectively.

At present, the model of ECA functioning in the world has significantly changed and is evolving under the direction of China, Japan and Korea's agencies. The Asian model is characterized by a specialization, in one country operates two kinds of agencies. One of them acts as a lender and insurer in short-term transactions, while the other acts as a lender in medium and long-term projects, offering a wide range of additional services in addition to core financing. The second one does not necessarily offer services along a common value chain for a specific economic entity.

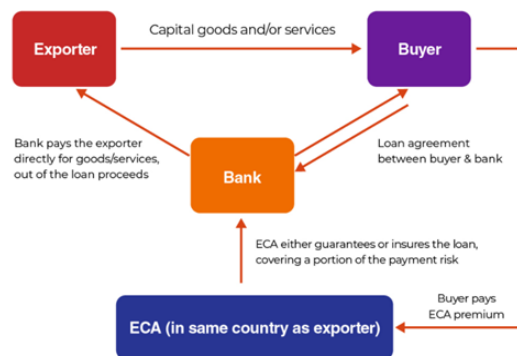


Fig. 2. How ECA works. Source: [12]  
Rys. 2. Schemat działania ECA. Źródło: [12]

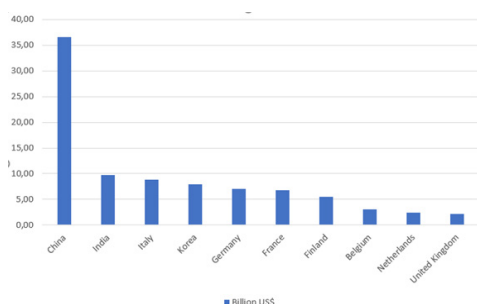


Fig. 3. Top 10 ECA providers 2017. Source: Own elaboration based on [14]  
Rys. 3. 10 największych Agencji Kredytów Eksportowych. Źródło: Opracowanie własne na podstawie [14]

In the European market, short-term transactions are handled by private entities in the form of commercial banks or providers offering trade credit. In some European Union countries it is forbidden to involve ECA agencies as a support for short-term transactions.

In Table 2 is presented a list of the largest export credit agencies in the world, including their market specialization based on lending and financing insurance.

Short-term transactions are financed by Asian ECAs, as: Chinese Sinosure, Korean K-sure and Japanese NEXI. This is due to the previously described model of evolution and the resulting market specialization.

In the case of the medium and long-term market, financial involvement through the ECA agencies was shown by China, which in 2016 provided capital in the amount of USD 34 billion. Russia, South Africa and India have showed the highest dynamics of this type of financing. Overall, the BRICS countries involved USD 51 billion in the international financing of their entities in 2016.

In 2017 capital provided by China was more than USD 36 billion and the top ten ECAs all together have spent USD 90 billion for export transactions financing (Figure 3).

In the case of OECD countries, the total value of financing provided in 2016 was approximately USD 66 billion. The largest share in this financing was held by Italy (USD 10.3 billion), Germany (USD 9.7 billion), France (USD 9.4 billion) and Korea (USD 7.4 billion).

The share in financing export transactions of individual countries through the ECA agencies operating on their territory is shown in Figure 4.

In the chart above (Figure 4) it is visible that the highest level of export financing took place in 2012 (over 120 billion). Since this year, the value of transactions has been systematically declining, but still is at a level over USD 60 billion. The countries most involved in supporting exports are Germany, France, Italy, Korea, Japan and the USA. The chart shows also that US involvement in export financing has significantly decreased since 2012.

## 5. The possibilities of alternative financing in the mining industry

The figure below (Figure 5) shows outflows of ECAs' funds in OECD countries in years 2009-2018. As it is visible in OECD countries mining has only 9% the expenditure structure of ECAs' funds. That number would be higher if we took into account world data.

However, ECAs are an important source of financing for mining projects, sometimes even the only one possible, especially for projects in the construction phase, where there are high financial costs on loans granted for capital-intensive investments.

If hard coal mining was taken into consideration then the strongest involvement in mining financing would be as follows: Japan, South Korea, China and Germany (Figure 6).

In the case of Japan, the largest beneficiaries of mining financing are domestic companies related to the mining industry, such as Hitachi, Toshiba and Mitsubishi. For example, in 2014 Mitsubishi obtained financing in the amount of USD 1.4 billion from JBIC (Japan Bank for International Co-operation) for the purchase of shares of the Caval Ridge - coal project in Queensland, Australia.

Tab. 2. The largest ECAs operating in the world. Source: Own elaboration based on [13]  
 Tab. 2. Największe ECA, które istnieją na świecie. Źródło: Opracowanie własne na podstawie [13]

No.	Country	Name of ECA	Specialization
1	China	China Export and Credit Insurance Corporation <b>Sinosure</b>	I
		The Export-Import Bank of China <b>CHEXIM</b>	F
2	Italy	Servizi Assicurativi del Commercio Estero S.p.A. <b>SACE</b>	I+F
3	Germany	<b>Euler Hermes</b>	I+F
4	France	Compagnie Française d'Assurance pour le Commerce Extérieur <b>COFACE</b>	I
		Banque Publuquw d'Investissement <b>Bipfrance</b>	F
5	Korea	Korea Trade Insurance Corporation <b>K-sure</b>	I
		Export-Import Bank of Korea <b>KEXIM</b>	F
6	India	Export Credit Guarantee Corporation of India <b>ECGS</b>	I
		Export-Import Bank of India <b>India-Eximbank</b>	F
7	Russia	Export Insurance Agency of Russia <b>EXIAR</b>	I+F
8	United Kingdom	UK Export Finance <b>UKEF</b>	I+F
9	Canada	Export Development Canada <b>EDC</b>	I+F
10	Japan	Nippon Export and Investment Insurance <b>NEXI</b>	I
		Japan Bank for International Corporation <b>JBIC</b>	F
11	USA	Export Import Bank of U.S. <b>EXIM</b>	I+F

I – Insurance, F – Financing

The involvement of some countries in the financing of hard coal mining projects, may be surprising, especially in relation to the climate policy and global air protection they promote. The most surprising is the participation of Germany, which through companies related to the mining industry, engaged over USD 3 billion in years 2007-2015. So far, the USA and France have banned ECA financing of mining projects and coal-based energy.

Among developing countries that are the largest recipients of ECAs' (funds for coal mining) finds also Australia, which is one of the ten richest countries in the world and at the same time has accepted over USD 4 billion of financing involved in hard coal mining. This is not surprising, however, as Australia is considered a mining country, where gross domestic product and its growth largely depend on the mining industry. In turn, the energy industry is based on conventional energy sources, which are constantly being developed through systematic financing into new strategic projects.

Non-coal mining entities have much more easier access to traditional financing, but they also reach for ECAs funds (Tabela 3).

The first one on the list is the mine copper and gold mine Oyu Tolgoi in Mongolia. The Rio Tinto company is running that project. The value of that project is estimated at US\$4.4bn. That investment will be financed by 20 lenders such as: commercial banks, ECAs and a range of development finance institutions. ECAs, which are in that project are as follow: Export Development Canada (EDC), the European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC), the Export-Import Bank of the United States (US Exim) and the Export Finance and

Insurance Corporation of Australia (Efic). All together they will lend to Rio Tinto USD 1,3 billion. [17]

Another example is the financing of the copper mine Mina Justa in Peru. The whole project is estimated at USD 1,7 billion. The financing of that project is provided also by banks and the following ECAs: Export Development Canada (EDC), Export Finance and Insurance Corporation (EFIC), the Australian ECA) and Export Import Bank of Korea (Kexim). Only Kexim has financed USD 200 million.

Kexim has been growing its presence in Latin America in recent years in a bid to solidify South Korea's supply of raw minerals. In 2015, it signed on-lending deals worth US\$3.2bn with five banks in Brazil, Chile and Peru.

This followed a state visit by former Korean president Park Geun-hye in the same year, which saw a range of investment deals signed. The most high-profile deal was a US\$13bn agreement between the Peruvian energy ministry and Kexim to collaborate on a petrochemical complex. [18]

## 6. Summary

The global policy aims to achieve climate neutrality, which means the industry decarbonisation. Recently, this policy has a large impact on the shape of today's mining, especially mining related to conventional energy resources as well as to all undertakings indirectly related to coal mining. The economic climate around the fuel and conventional energy industry, causes that institutions of the traditional financial market are reluctant to get involved financially in all projects related to coal, or even they completely cut themselves off from such undertakings. Therefore, all investments related to hard coal mining have problems with obtaining financing from tradi-

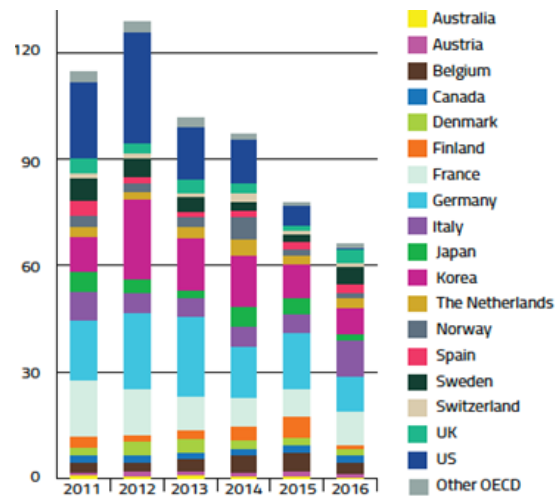


Fig. 4. The share of financing and its changes in 2011-2016 of individual countries in which operate ECAs [USD billion]. Source: [13]  
 Rys. 4. Udział finansowania poszczególnych państw w których funkcjonują ECA i jego zmiany w latach 2011-2016 [mld USD]. Źródło: [13]

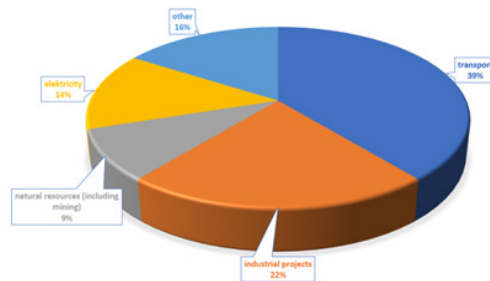


Fig. 5. Outflow in 2009-2018 of ECAs' funds in OECD countries. Source: Own elaboration based on [19]  
 Rys. 5. Kierunki finansowania przez ECA w krajach OECD. Źródło: Opracowanie własne na podstawie [19]

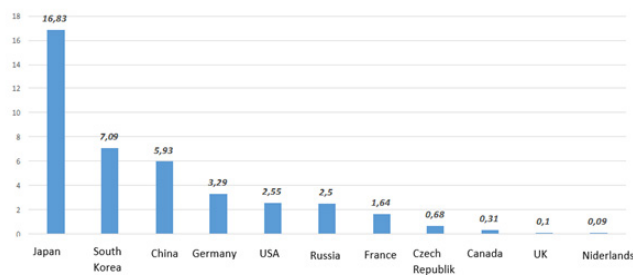


Fig. 6. The largest countries that finance coal mining activities through the ECAs [USD billion]. Source: Own elaboration based on [15]  
 Rys. 6. Wykaz państw z największym udziałem w finansowaniu górnictwa przez Agencje Kredytów Eksportowych [mln USD]. Źródło: Opracowanie własne na podstawie [15]

Tab. 3. Mines' projects financing by EXIM. Source: [16]  
 Tab. 3. Projekty finansowane przez EXIM. Źródło: [16]

	<b>Project</b>	<b>Mineral</b>	<b>Country</b>	<b>EXIM Financing (\$millions)</b>
2013	Oyu Tolgoi LLC	Copper/Gold	Mongolia	\$367
2013	Roy Hill Holdings Pty. Ltd.	Iron	Australia	\$694
2011	Downer Edi Mining Pty Ltd.	Iron	Australia	\$58
2010	Pueblo Viejo Dominicana Corp.	Gold	Dominican Republic	\$375
2010	Minera y Metalurgica del Boleo	Copper-Cobalt-Zinc	Mexico	\$420
2010	ANZ/Leighton Holdings Ltd.	Coal	Australia	\$15
2004	Minera Argentina SA/Veladero	Gold	Argentina	\$77
1997	PT Newmont Nusa Tenggara/Batu Hijau	Copper/Gold	Indonesia	\$425
1996	Minera Alumbrera Ltd.	Copper/Gold	Argentina	\$228
			<b>TOTAL:</b>	<b>\$2,658</b>

tional sources. Mining and related enterprises have to look for alternative forms of financing. One of such forms are Export Credit Agencies.

Export credit agencies fill the gap in the financial market by providing capital for strategic development and creating long-term value of mining enterprises. This is especially important in emerging markets. At the same time, these agencies are a key tool for exports support and the promotion of capital expansion of economic entities from the same political area.

The largest beneficiaries of this market are Asian markets as Japanese, Korean and Chinese companies, where also the

largest ECAs come from. The leader on the European ECAs' market is Germany, supporting mining-related entities in their foreign market expansion. In turn, countries that use such financing belong to a group of developing countries, e.g. Vietnam, South Africa, India, the Philippines and Indonesia. Surprising is that also Australia, one of the richest countries in the world, is heavily using ECAs as a source of mining industry financing.

The ECAs as a source of alternative financing may be an interesting option for the domestic mining industry and entities associated with it, but also for enterprises which are struggling with lack of capital.

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### *Alternatywne sposoby finansowania w globalnym górnictwie: Agencje Kredytów Eksportowych (ECA)*

*W dzisiejszych czasach przedsiębiorstwa górnicze spotykają się z trudnościami odnośnie możliwości uzyskania finansowania z tradycyjnych źródeł na realizację projektów geologiczno-górnictwa. Rozwiązaniem problemów z finansowaniem takich projektów mogą być alternatywne źródła finansowania, tj. development finance, royalty agreements, streaming, standby equity, off take, EPCM/equipment finance lub ECA. W artykule przeanalizowano możliwości wykorzystania tych źródeł w zależności od fazy cyklu życia projektu geologiczno-górnictwa. W dalszej części główną uwagę poświęcono Agencjom Kredytów Eksportowych (ECA), które dają dużo większe możliwości niż tradycyjne banki. W artykule przedstawiono największe Agencje Kredytów Eksportowych na świecie i wskazano ich cechy charakterystyczne na tle konwencjonalnych źródeł finansowania. Zidentyfikowano największe państwa finansujące, ale również pozyskujące takiego rodzaju kapitały w odniesieniu do branży górniczej.*

**Słowa kluczowe:** *alternatywne źródła finansowania, Agencje Kredytów Eksportowych, finansowanie w górnictwie*