

## DETERMINANTS OF THE DEVELOPMENT OF GREEN INVESTMENT BANKING IN POLAND IN THE FIELD OF CORPORATE DEBT SECURITIES ISSUANCE

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**Purpose:** The aim of this article is to identify the key factors determining the development of green investment banking in Poland in the field of corporate debt securities issuance during the years 2020–2024. The study also assesses the level of banks' involvement in the issuance of sustainable debt instruments for corporate clients within this period and analyzes the structure of sustainable bond issuances across different market sectors.

**Design/methodology/approach:** The article employs the method of in-depth literature studies, the document analysis method and the synthesis method. The empirical verification was conducted based on data derived from the consolidated annual financial statements of the examined commercial banks, management reports and ESG reports for the years 2020–2024.

**Findings:** The results of the study indicate that during the years 2020–2024, the activity of banks in issuing sustainable bonds for corporate clients was markedly differentiated, with Bank Pekao S.A. playing a dominant role. The research identified determinants of green investment banking development encompassing institutional and regulatory, market-related, strategic and business-oriented, environmental and reputational factors. The study demonstrated that the primary corporate clients of commercial banks in Poland in the field of green debt securities issuance were enterprises from the energy sector.

**Research limitations/implications:** The main research limitation should be considered the availability of detailed reporting information from banks concerning issuances carried out for corporate clients.

**Practical implications:** Based on the conducted research, a set of practical recommendations has been formulated aimed at broadening the participation of additional market sectors in green bond issuances, thereby actively contributing to the advancement of sustainable development objectives.

**Originality/value:** Previous studies concerning green banking have focused primarily on bank-client relationships in the field of lending activities. This article introduces a new perspective by analyzing the hitherto unexplored role of banks as intermediaries in the issuance of sustainable debt securities. The study fills a gap in the analysis of factors determining issuances carried out by banks for corporate clients.

**Keywords:** green investment banking, corporate banking, green debt securities.

**Category of the paper:** Research paper.

## 1. Introduction

In the financial market, there is a steadily growing interest in the ESG concept, particularly its environmental component and the pursuit of sustainable development goals. This necessitates the mobilization of substantial capital resources at both the global and local levels. It is estimated that between 2016 and 2040, global investments in clean energy will require expenditures of approximately USD 27 trillion (National Green Bank, 2017, p. 12). The investment gap in this field cannot be bridged without the support of the private sector and the use of debt instruments in the financial market, for example through the issuance of green bonds. Banks are increasingly engaging in the achievement of sustainable development goals by integrating ESG considerations into their business strategies. In addition to their core deposit and lending activities, banks, acting as issuers or investors, offer advisory services to the real sector related to capital acquisition, management, and underwriting of debt securities, the proceeds of which are invested in projects with a positive environmental impact. Such banking activities fall within the domain of so-called green investment banking, the development of which holds a long-term prospective outlook.

The existing literature rarely addresses the role of the bank as an agent and guarantor of sustainable debt instruments. Therefore, the aim of this article is to identify the key factors determining the development of green investment banking in Poland in the field of corporate debt securities issuance during the years 2020-2024. The study also assesses the level of banks' involvement in the issuance of sustainable debt instruments for corporate clients during this period and analyzes the structure of sustainable bond issuances across different market sectors.

The article adopts a theoretical-empirical approach, employing the following research methods to achieve its objective: in-depth literature review, method of document analysis, method of observation and method of synthesis. The empirical verification was conducted based on data derived from the consolidated annual financial statements of the examined commercial banks, management reports and ESG reports for the years 2020-2024.

## 2. Literature review on green investment banking

For several decades, one of the global megatrends in the world economy has been sustainable development, which is defined as development that meets the current needs of societies without compromising the ability of future generations to meet their own needs. Sustainable development requires a joint effort in the areas of economic growth, social inclusion, and environmental protection (UNI Warsaw, 2025). Undertaking initiatives of this nature requires substantial financial capital, the acquisition of which is increasingly facilitated

through the issuance of debt instruments, particularly bonds. In the context of promoting the advancement of environmentally oriented projects, sustainable debt instruments are employed. These instruments can be broadly categorized into two distinct groups:

- those financing specific projects with a positive environmental and social impact, and
- those linked to the issuer's performance regarding ESG criteria (Loumioti, Serafeim, 2022, p. 35).

The first group includes green bonds, social bonds, and sustainable bonds (Schmittmann, Chua, 2021, p. 8), as well as bonds issued by the European Investment Bank, known as Climate Awareness Bonds (Banga, 2019, p. 3). The second group comprises sustainability-linked bonds, also referred to on the financial market as ESG-linked bonds (Machado, Sousa, Branco, 2025, p. 5), and bonds linked to ESG ratings (Köbel, Lambillon, 2022, p. 10). All of these types of bonds represent the latest innovations in sustainable financing and can be issued by corporations, banks, local government units, governments or international institutions.

The creation of an innovative financial instrument for financing environmental needs is necessary but not sufficient. A crucial condition is the active involvement of financial institutions, primarily banks, whose role extends not only to that of an investor and, in some cases, issuer, but above all to that of a financial intermediary – organizing the issuance and performing functions adapted to the nature of the issuance (van der Wansem, Jessen, Rivetti, 2019, p. 16). The issuance of green bonds by banks may stem from the need to decarbonize their own loan portfolios, whereas investing in such instruments serves an income-generating purpose. Representatives of financial institutions emphasize that the primary task of the institutions they represent is to maintain a stable and profitable business model, not necessarily to support the development of green technologies. ESG considerations are important only insofar as they do not hinder profit generation (Żelisko, Juszczak, 2025, p. 23). Some studies indicate that banks engaged in sustainable development activities achieve, on average, better financial results than those that do not devote significant attention to this area (Weber, 2017, pp. 380-383). In addition to improved financial performance, these practices enhance the institution's public image and credibility (Muszyński, 2025, p. 127). An increase in bank reputation facilitates the acquisition of new clients and the expansion of market share (Torre Olmo, Cantero Saiz, Sanfilippo Azofra, 2021, pp. 1-2).

The offering by banks of financial instruments focused on environmental, social, and governance factors, while simultaneously ensuring profits from their operational activities, is referred to as "sustainable banking." In contrast, "green banking" focuses exclusively on aspects of environmental protection (Kiertowicz, Węgrzyn, Zaremba-Janukowicz, 2025, p. 32).

While a bank's activity as a lender, issuer, or investor in financing sustainable development is increasingly well-known among market participants, its role in organizing debt securities issuances is less frequently addressed in the literature. A bank can act as an organizer, co-organizer, guarantor, agent, dealer, depository or financial advisor. It should be noted that,

due to their know-how and technical and organizational capabilities, banks most often combine these roles, providing comprehensive services to the issuer (Gradoń, 2014, p. 99).

The roles outlined above constitute functions performed by banks within the scope of their investment banking activities, which can be defined as a specialized banking activity involving the trading of securities in money and capital markets, financial advisory services, asset management, risk management, and the execution of complex transactions in capital markets (Gradoń, 2009, pp. 20-21). These investment banking functions are not reserved solely for investment banks; they can also be provided by universal banks (in Poland), brokerage houses or investment funds. This distinction is particularly relevant in the context of sustainable finance, where, in addition to “green investment banking”, there are also “green investment banks”. Green investment banking is defined as a specialization within investment banking that focuses on financing projects and companies with positive environmental, social and corporate governance impacts. In contrast, “green investment banks” are not commercial or traditional investment banks. They are specialized, publicly capitalized financial institutions operating in national markets, created specifically to attract private capital for investments in climate-resilient infrastructure (Sims, Dougherty, Bergöö, 2017, p. 6). Currently, twelve green investment banks operate worldwide at the national level (Australia, Japan, Malaysia, Switzerland, and the United Kingdom), state level (Connecticut, Hawaii, California, New Jersey, New York, Rhode Island in the USA), local level (Montgomery County, Maryland, USA) and municipal level (United Arab Emirates) (OECD, 2017, p. 2).

As of today, the sources reviewed by the authors of this study do not indicate the existence of green investment banks in European Union countries. Within the domestic banking market, such a role could potentially be fulfilled by the state-owned Bank Gospodarstwa Krajowego and Bank Ochrony Środowiska S.A., which, although listed on the Warsaw Stock Exchange, remains under the control of the National Fund for Environmental Protection and Water Management (NFOŚiGW), holding a 58.05% share in its share capital ([bosbank.pl](http://bosbank.pl)). Both banks possess market credibility, an appropriate product offering and the economic potential to attract private capital to help reduce the investment gap in the green economy.

The absence of such banks in the Polish market does not hinder the effective support of sustainable development by the largest domestic banks, which possess well-developed investment banking departments and actively participate in organizing debt securities issuances. Their further development, and particularly the development of investment banking in the field of green transformation, may depend on multiple factors.

The first determinant of this development is the European Union’s legal framework, including the EU Taxonomy and the Green Bond Standard, which are expected to positively influence banks’ ability to attract clients interested in incorporating environmental aspects into their operations. Environmentally sustainable bonds constitute a significant instrument for financing investments in ecological technologies, improving energy efficiency, promoting the efficient use of resources and developing sustainable transport infrastructure. The introduction

of such a standard ensures comparability in the green bond market, which benefits issuers and provides investors with an effective means of allocating capital (Kmita, 2024, p. 37).

The second determinant that may influence the development of green investment banking is the necessity of incurring financial expenditures for the decarbonization of the Polish economy. It is estimated that by 2050, USD 105 billion will be required in the energy sector and USD 449 billion in total, encompassing transportation, industry, agriculture and forestry. Ninety-four percent of these investments are already included in the current policy framework, regardless of the pace of decarbonization, due to the need to address issues related to aging power plants and buildings, as well as inefficient industrial and transport fleets. It is assessed that more than half of the required funds will have to originate from private sources, namely from the own resources of enterprises and financial institutions (Kotecki, 2025, pp. 40-42).

The next determinant arises from the previous one. The domestic banking sector constitutes the primary source of financing for enterprises and local governments; however, its financial capacity is insufficient to bridge the gap in funding for green investments. Although banks possess financial surpluses, the scale of the required capital is immense and the activation of such large amounts by banks would necessitate an increase in their own funds in order to comply with existing prudential standards. The issuance of debt securities serves as an alternative to credit financing, enabling the mobilization of market investors without increasing the bank's credit risk. In this context, public capital is indispensable.

The fourth determinant of the development of green investment banking is the reintroduction of transitional bonds into Polish legislation. By design, these bonds, similar to green bonds, were intended to finance Poland's infrastructural needs, but their issuance was subject to fewer formal requirements. Transitional bonds were deleted from the Bonds Act (Dz.U. 2015, item 238), and Articles 27p-27r of the Act were repealed.

The fifth factor driving development is the requirement to limit the financing of projects with a negative impact on the natural environment. By performing their traditional functions (deposit, credit, and settlement), banks can influence the volume, pace, and direction of capital allocation, entrepreneurs' investment decisions, and methods of capital acquisition. Key activities in this regard are undertaken by banks in two main areas: financial products and services and risk management (Kulińska-Sadłocha, 2022, p. 322).

Additional determinants of green investment banking development in the field of debt securities may include increasing environmental awareness among issuers and investors, technological progress and partial automation of the issuance process, as well as corporate and investor activism. Shareholder activism involves compelling companies to adopt more sustainable practices, while investors, using the power of their voice, advocate for greater transparency and accountability on ESG matters (Kotecki, 2024, p. 18).

The role of the public sector is also crucial, as it can create the legal and economic conditions necessary to attract capital in the financial market and assume risks in sectors where private capital is either unwilling or unable to fully participate.

### 3. Research methodology

The research objective adopted in the article determined the selection of the study sample. The study deliberately focused exclusively on commercial banks, which was determined by the availability of reporting data. An analysis of the financial statements of cooperative banks revealed that information concerning their investment activities in the field of sustainable debt securities issuance is notably limited. The primary criterion for sample selection was the size of the commercial bank, measured by the value of its assets. In the selection process, the asset values of commercial banks listed on the Warsaw Stock Exchange were verified as of December 31, 2024. Ultimately, for the purposes of the study, a research sample was established consisting of the ten largest publicly listed commercial banks in Poland as of December 31, 2024. The composition of the research sample is presented in Table 1.

**Table 1.**

*Commercial banks included in the research sample, ranked by total assets as of 31.12.2024*

| No. | Name of the bank             | Assets value (in thousands of PLN) |
|-----|------------------------------|------------------------------------|
| 1   | PKO BP S.A.                  | 525 225 000                        |
| 2   | Bank Pekao S.A.              | 334 242 000                        |
| 3   | Santander Bank Polska S.A.   | 304 373 920                        |
| 4   | ING Bank Śląski S.A.         | 260 359 000                        |
| 5   | mBank S.A.                   | 245 957 363                        |
| 6   | BNP Paribas Bank Polska S.A. | 167 539 589                        |
| 7   | Bank Millennium S.A.         | 139 152 000                        |
| 8   | Alior Bank S.A.              | 93 293 487                         |
| 9   | Citi Handlowy S.A.           | 72 478 103                         |
| 10  | Getin Noble Bank S.A.        | 750 112                            |

Source: own elaboration.

The study employed several research methods, including in-depth literature review, document analysis method, observation method and synthesis method. The empirical verification was conducted based on data derived from the consolidated annual financial statements of the examined commercial banks, management reports and ESG reports for the years 2020-2024. Additionally, data were collected from industry portals and the websites of the banks' corporate clients, who were issuers of the analyzed debt instruments.

The research procedure in this study consisted of several stages. The first step involved the identification of banks that, during the examined period, carried out debt securities issuances for corporate clients, with a distinction made for sustainable instrument issuances. Next, a detailed review of sustainable debt issuances conducted by these banks between 2020 and 2024 was performed. Based on this review, a comprehensive dataset of all issuances was prepared, including information on bank involved, year of issuance, corporate client, client's market sector, issuance value and the type of debt instrument. Finally, key groups of factors determining the development of green investment banking in Poland in the field of corporate debt securities issuance during 2020-2024 were identified.

#### 4. Research results

The analysis conducted enabled the extraction of the most pertinent information regarding debt issuances executed by banks for their corporate clients. This information is presented in a consolidated format in Table 2.

**Table 2.**

*Characteristics of sustainable bond issuances conducted by the examined banks for corporate clients during the years 2020-2024*

| Bank                         | Year | Client  | Market sector             | Issuance value in PLN | Type of the instrument   |
|------------------------------|------|---|---------------------------|-----------------------|--|
| PKO BP S.A.                  | 2021 | Europejski Bank Inwestycyjny                  | finance                   | 1.25 bn               | Climate Awareness Bond   |
| PKO BP S.A.                  | 2022 | Cyfrowy Polsat S.A.                           | media, telecommunications | 2.67 bn               | Sustainability-linked bonds                                    |
| Bank Pekao S.A.              | 2020 | PKN Orlen S.A.                                | energy                    | 1 bn                  | ESG-linked bonds   |
| Bank Pekao S.A.              | 2020 | Tauron Polska energetyka S.A.                 | energy                    | 1 bn                  | Sustainability-linked bonds                                    |
| Bank Pekao S.A.              | 2021 | PKN Orlen S.A.                                | energy                    | 1 bn                  | ESG rating-linked bonds  |
| Bank Pekao S.A.              | 2021 | PKN Orlen S.A.                                | energy                    | 500 m EUR             | Green eurobonds  |
| Bank Pekao S.A.              | 2021 | PKN Orlen S.A.                                | energy                    | 1 bn                  | ESG-linked bonds   |
| Bank Pekao S.A.              | 2021 | Famur S.A.                                    | mining, energy            | 400 m                 | Green bonds  |
| Bank Pekao S.A.              | 2023 | media and telecommunications service provider | media, telecommunications | 3.5 bn                | Sustainability-linked bonds                                    |
| Bank Pekao S.A.              | 2023 | international financial institution           | finance                   | 1.4 bn                | Eurobonds, including green eurobonds (Climate Awareness Bonds) |
| Bank Pekao S.A.              | 2023 | Ghelamco Group                                | real estate               | 520 m                 | Green bonds  |
| Bank Pekao S.A.              | 2024 | Polenergia S.A.                               | energy                    | 750 m                 | Green bonds  |
| Bank Pekao S.A.              | 2024 | Grupa Enea                                    | energy                    | 2 bn                  | ESG-linked bonds   |
| Santander Bank Polska S.A.   | 2020 | Cyfrowy Polsat S.A.                           | media, telecommunications | 1 bn                  | Green bonds  |
| Santander Bank Polska S.A.   | 2021 | PKN Orlen S.A.                                | energy                    | 1 bn                  | ESG-linked bonds   |
| Santander Bank Polska S.A.   | 2024 | Polenergia S.A.                               | energy                    | 750 m                 | Green bonds  |
| mBank S.A.                   | 2021 | R.Power S.A.                                  | energy, photovoltaic      | 1 bn                  | Green bonds  |
| mBank S.A.                   | 2022 | R.Power S.A.                                  | energy, photovoltaic      | 275 m                 | Green bonds  |
| mBank S.A.                   | 2023 | Ghelamco Group                                | real estate               | 520 m                 | Green bonds  |
| mBank S.A.                   | 2024 | R.Power S.A.                                  | energy, photovoltaic      | 610.7 m               | Green bonds  |
| mBank S.A.                   | 2024 | Polenergia S.A.                               | energy                    | 750 m                 | Green bonds  |
| mBank S.A.                   | 2024 | Ghelamco Invest sp. z o.o.                    | real estate               | 104 m                 | Green bonds  |
| BNP Paribas Bank Polska S.A. | 2020 | Cyfrowy Polsat S.A.                           | media, telecommunications | 1 bn                  | Green bonds  |

Cont. table 2.

|                              |      |                              |                           |         |                             |
|------------------------------|------|------------------------------|---------------------------|---------|-----------------------------|
| BNP Paribas Bank Polska S.A. | 2023 | Grupa Polsat Plus            | media, telecommunications | 2.67 bn | Sustainability-linked bonds |
| Citi Handlowy S.A.           | 2021 | Europejski Bank Inwestycyjny | finance                   | 1.25 bn | Climate Awareness Bond      |

Source: own elaboration.

The analysis of the data presented in Table 1 indicates that, among the institutions examined, six banks were active in the issuance of green debt instruments and ESG-linked instruments. These were PKO BP S.A., Bank Pekao S.A., Santander Bank Polska S.A., mBank S.A., BNP Paribas Bank Polska S.A., and Citi Handlowy S.A. Between 2020 and 2024, a total of 20 issuances were carried out for corporate clients, with a combined value of PLN 25.39 billion. It should be emphasized that some sustainable bond issuances were arranged in a consortium format, meaning that the transactions were handled simultaneously by multiple banks rather than a single financial institution. Examples of such issuances include: Cyfrowy Polsat S.A. bonds (2020, PLN 1 billion, Santander Bank Polska S.A. and BNP Paribas Bank Polska S.A.), European Investment Bank bonds (2021, PLN 1.25 billion, PKO BP S.A. and Citi Handlowy S.A.), Ghelamco Group bonds (2023, PLN 520 million, Bank Pekao S.A. and mBank S.A.), and Polenergia S.A. bonds (2024, PLN 750 million, Bank Pekao S.A., Santander Bank Polska S.A. and mBank S.A.). Additionally, it is worth noting the issuance denominated in euros, namely the green eurobonds of PKN Orlen S.A., amounting to EUR 500 million. Table 2 provides an overview of sustainable bond issuances in which each bank participated on behalf of corporate clients, along with the total nominal value of these issuances. The data enabled an assessment of the activity levels of individual financial institutions involved in issuing sustainable instruments for corporate clients.

**Table 3.**

*Total number and value of sustainable bond issuances carried out by the examined banks on behalf of corporate clients during 2020-2024*

| Bank                         | Total number of issuances | Total value of issuances in which the bank participated (PLN billion)) | Share in total issuances |
|------------------------------|---------------------------|--|--------------------------|
| Bank Pekao S.A.              | 11                        | 14,82  | 50%                      |
| PKO BP S.A.                  | 2                         | 3,92   | 13%                      |
| BNP Paribas Bank Polska S.A. | 2                         | 3,67   | 12%                      |
| mBank S.A.                   | 6                         | 3,26   | 11%                      |
| Santander Bank Polska S.A.   | 3                         | 2,75   | 9%                       |
| Citi Handlowy S.A.           | 1                         | 1,25   | 4%                       |
| <b>Total</b>                 | <b>25</b>                 | <b>29,68</b>   | <b>100%</b>              |

\* For issuances arranged in a consortium format, the full amount was counted for each of the participating banks; therefore, the total value of issuances in the table (PLN 29.68 billion) differs from the total nominal value of the bonds issued (PLN 25.39 billion).

Source: own elaboration

The analysis of the presented data indicates a clear differentiation in the activity of banks involved in the issuance of sustainable debt instruments for corporate clients between 2020 and 2024. Market leadership was held by Bank Pekao S.A., which participated in 11 issuances totaling PLN 14.82 billion, accounting for half of the total issuance value. Among the active banks in the analyzed area, the smallest scale of activity was observed for Citi Handlowy S.A., which conducted a single issuance valued at PLN 1.25 billion (4%). The remaining institutions – PKO BP S.A., BNP Paribas Bank Polska S.A., mBank S.A., and Santander Bank Polska S.A. – had a moderate market share, ranging from 9% to 13% of the total value of issuances carried out. A detailed analysis of the financial statements allowed for the identification of key groups of factors determining the development of green investment banking in Poland in the field of corporate debt securities issuance during 2020–2024. The following eight key groups of factors were formulated: (1) engagement of the largest financial institutions, (2) implementation of ESG strategies, (3) cooperation with international financial institutions, (4) compliance with regulations and certification, (5) energy transition of large enterprises, (6) demand from institutional investors, (7) effect of the pioneering issuances and (8) issuances arranged in a consortium format. Each group of factors has been separately described below.

#### **4.1. Engagement of the largest financial institutions**

The development of green investment banking in the field of debt securities issuance for corporate clients was largely determined by the activity of several leading commercial banks. These institutions played key organizational roles – coordinating issuances, acting as issuance dealers and supporting processes related to the distribution of securities. The reputation of major commercial banks significantly reduces transaction risk and enhances market credibility, which is an important factor in attracting institutional investors. Consequently, the engagement of the largest financial institutions not only influences market dynamics but also shapes its standards and investment practices.

#### **4.2. Implementation of ESG strategies**

Commercial banks in Poland are increasingly adopting ESG strategies by integrating them into their overall business operations. Bank Pekao S.A., in its 2021-2024 strategy, identified responsibility as one of its four key pillars, defined as conducting commercial and operational activities with greater consideration for environmental, social, and governance (ESG) aspects. Importantly, in the context of this study, Bank Pekao S.A. has committed itself to supporting the development of the economy through collaboration with its corporate clients. Similarly, mBank S.A., in its 2021-2025 strategy, has pledged to mobilize PLN 10 billion to finance green investments, including renewable energy, electromobility and waste management projects. Half of this amount comes from the bank's own capital, while the remaining PLN 5 billion is sourced externally – through green bond issuances and banking consortia. These strategies define the key directions of financial institutions, positioning green bond issuance as an integral

component of their business strategies and simultaneously signaling to institutional investors the long-term commitment of banks to ESG principles.

#### **4.3. Cooperation with international financial institutions**

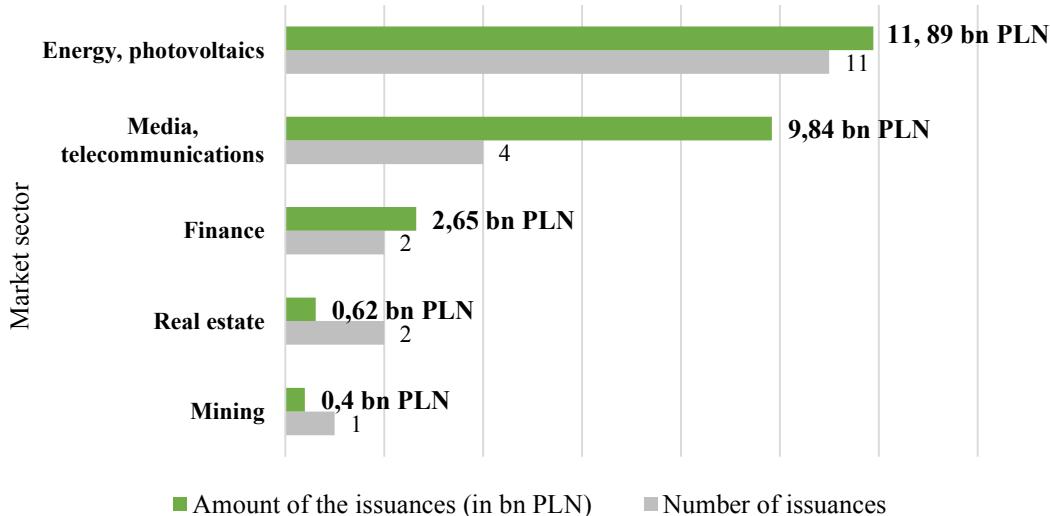
The analysis indicates the involvement of international financial institutions in the implementation of investment processes. In 2020, the European Bank for Reconstruction and Development (EBRD) acquired 20% of Cyfrowy Polsat S.A.'s green bond issuance, valued at PLN 1 billion. Attention should also be drawn to the 2021 issuance of Climate Awareness Bonds by the European Investment Bank (EIB), amounting to PLN 1.25 billion. Cooperation with international financial institutions significantly strengthens the credibility of Poland's sustainable debt securities market. The engagement of such entities facilitates the transfer of specialized expertise, the enhancement of issuance process standards and the increased attractiveness of the market for foreign investors. Consequently, international collaboration serves as a key factor integrating the domestic financial market into the global sustainable finance ecosystem.

#### **4.4. Compliance with regulations and certification**

Banks and their corporate clients consistently indicate that their bond issuances comply with key regulatory frameworks, most notably the EU Taxonomy, as well as internationally recognized standards such as the *Green Bond Principles* developed by the International Capital Market Association (ICMA). Positive assessments issued by specialized expert institutions such as Sustainalytics, along with the linkage of bond coupons to ESG ratings, constitute essential mechanisms for building investor trust. The standardization of financial instruments based on these norms ensures procedural consistency, facilitates risk assessment and supports market development. Consequently, certification and alignment of issuance processes with EU regulations have become indispensable prerequisites for the sustained growth of the sustainable instruments segment in Poland. Attention should also be drawn to the environmental and social objectives embedded in the structure of the bonds. *Sustainability-linked bonds* are designed in a way that explicitly incorporates environmental and social targets into their framework. The inclusion of these objectives enables issuers to demonstrate the tangible impact of their activities on environmental protection and social development, thereby strengthening their market credibility.

#### **4.5. Energy transition of large enterprises**

The study involved the determination of sectoral structure of sustainable bond issuances carried out by banks for corporate clients. Figure 1 presents the results.



**Figure 1.** Sustainable bond issuances carried out by banks for corporate clients between 2020 and 2024, classified by market sectors.

Source: own elaboration.

Classification of issuances by market sectors indicates a clear concentration of capital in sectors most closely associated with the energy transition and the digital economy. The analysis shows that the main beneficiaries of financing through green bond issuances were companies from the energy sector. This sector accounted for the largest number of issuances and raised the highest amount of capital during the analyzed period (PLN 11.89 billion), confirming its leading role in the transition toward a low-carbon economy. Particularly significant were the issuances by companies such as PKN Orlen S.A., Tauron Polska Energia S.A., Polenergia S.A., Grupa Enea, and R.Power S.A. A characteristic feature of the energy sector was the high value of individual issuances, often exceeding PLN 1 billion and in the case of Grupa Enea, reaching PLN 2 billion. Importantly, this phenomenon was systematic –green bonds and ESG-linked bonds were issued every year of the analyzed period, demonstrating the sector's long-term approach to raising capital for investments. Moreover, energy companies employed a wide range of financial instruments, including green bonds, ESG-linked bonds, sustainability-linked bonds, and green eurobonds, reflecting the maturity and comprehensiveness of their business strategies. The second most significant group consisted of media and telecommunications companies, which carried out four bond issuances, representing 20% of all issuances and raising PLN 9.84 billion. This high share indicates the growing role of digitalization and the development of ICT infrastructure as key factors supporting sustainable economic development. Although green bond issuances also occurred in other sectors, such as real estate (Ghelamco Group) and the financial sector (European Investment Bank), their number and total value were significantly lower than those in the energy sector. This underscores the dominant role of energy companies in the development of Poland's sustainable debt instruments market. The analysis also highlights the strategic nature of banks' cooperation with key energy sector

players. The largest market participants, such as Bank Pekao S.A., Santander Bank Polska S.A., and mBank S.A., regularly managed bond issuances for companies in this sector, confirming the critical importance of the energy sector for the development of investment banking in Poland, particularly in the area of financing sustainable projects.

#### **4.6. Demand from institutional investors**

The data indicate that sustainable development instruments were primarily targeted at institutional investors, including investment funds, banks and insurance companies. The growing attention to ESG criteria, combined with expectations of these entities, contributes to an increase in both the number and the value of issuances. This phenomenon suggests that demand from institutional investors is a fundamental factor driving market development, while also serving as a signaling mechanism that shapes issuance strategies among large corporate entities.

#### **4.7. Effect of the pioneering issuances**

During the analyzed period, certain instruments were issued for the first time on the Polish market. The pioneering green bond issuances were carried out in 2020 by Cyfrowy Polsat S.A., Orlen S.A., and Tauron S.A. and thus served as benchmarks for subsequent transactions. This can be described as a demonstration effect of these issuances, effective both financially and reputationally, which contributed to an increase in the number of issuers and helped to build investor confidence in subsequent issuances. This phenomenon indicates that early market successes have a significant impact on the direction of development of the sustainable debt instruments market in Poland.

#### **4.8. Issuances arranged in a consortium format**

Issuances of sustainability-linked bonds and ESG-linked bonds by the examined banks were arranged exclusively by banking consortia. Meanwhile, Climate Awareness Bonds and eurobond issuances were managed within international banking consortia. Establishing such consortia increases the capacity for placement and distribution of securities among institutional investors, thereby serving as an additional factor supporting the development of the sustainable financial instruments market.

## 5. Conclusions and Discussion

The conducted study revealed that between 2020 and 2024 the activity of banks in the field of sustainable bond issuances for corporate clients was clearly diversified. Only six out of ten examined banks participated in the issuance of such debt instruments. The market leader during the analyzed period was Bank Pekao S.A., which took part in half of all issuances, thereby enabling its clients to raise a total of PLN 14.82 billion in capital. The analysis of banks' reporting documents made it possible to identify eight key groups of factors shaping the development of green investment banking in Poland in the field of corporate debt instruments – institutional and regulatory, market-related, strategic and business-oriented, environmental and reputational. The study showed that, in the years 2020–2024, the main corporate clients of commercial banks in Poland in the field of green bond issuances were enterprises from the energy sector. The results indicate the dominant share of this sector in both the total number and value of issuances, as well as its crucial role in the development of the green debt instruments market during the analyzed period.

Based on the conducted research, several practical recommendations can also be formulated. First, banks should continue and expand their offer of sustainable financing instruments, particularly for the energy sector, which faces the challenge of implementing costly investments related to energy transition and greenhouse gas emission reduction. Second, further diversification of financial products is advisable to ensure that the type of instrument matches the specific characteristics of projects and environmental objectives of particular corporate issuers. Third, the role of banks in education and advisory services for corporate clients should be strengthened, especially in market sectors that have so far made limited use of green financing. This could contribute to increasing the participation of other market sectors in green bond issuances, thereby supporting the implementation of sustainable development goals. The main research limitation concerns the availability of detailed reporting data from banks on issuances conducted for corporate clients.

Based on the data presented in this study regarding the necessary global expenditures for the energy transition, it can be concluded that a further increase in banks' activities in supporting the financing of ecological projects is required. This includes a growing role for investment banking in the field of corporate debt securities issuance. Considering the findings, future research should include a comparative analysis of the activity of Polish commercial banks in the field of sustainable debt instruments relative to other EU member states. This could then allow to distinguish between international and Polish perspectives on green investment banking and reveal contextual specificities of the domestic market.

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