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## CROWDFUNDING AS A METHOD OF FINANCING ECOLOGICAL PROJECT

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**ABSTRACT:** Crowdfunding is a method of financing new ventures, enabling individual founders of commercial, cultural or social projects to demand financing for many people, often in return for future products or actions. Crowdfunding projects can vary considerably in both purpose and size, from small art projects to entrepreneurs. It should be emphasized that crowdfunding successfully enters the field of environmental projects. Not infrequently, it achieves a higher success rate than other ideas funded by the online community. Other platforms are being created in the world dedicated to financing „green” investments.

The aim of the article is presenting the concept of crowdfunding, its essence and assumptions in the context of acquiring capital for ecological projects. The first part of the article presents the essence of crowdfunding, a typology of crowdfunding models, the second part presents the state of global crowdfunding, while in the third part the results of research on crowdfunding platforms operating in the world that operate in the area of environmental protection and examples of the most interesting ones. A study of crowdfunding platforms operating in the world was carried out. The research involved identification of platforms, crowdfunding models and their classification. After the selection, platforms have been distinguished that deal with the financing of ecological projects. As a result of the study, 29 operating world crowdfunding platforms have been identified that operate on the basis of a donation, loan and share model.

The article raises a new but important aspect of financing activities, especially organic. It should be noted that there is still little knowledge about the role of crowdfunding in financing environmental projects in the world. The article examines how many crowdfunding platforms support ecological projects, to what extent and by what model.

**KEY WORDS:** crowdfunding, lending, ecological project

## Introduction

Economic entities, individual states, strive for continuous development through searching for better, modern, risky solutions to be able to meet the expectations that the market and the environment create. Increasing competition forces in a way the pursuit of constant search for sources of competitive advantage. Enterprises, in relation to the above, are constantly looking for new opportunities that generate the need to incur high financial outlays. In this context, flourishing is experiencing crowdfunding, a response to the need to access capital outside of traditional financial systems.

The undertaken projects can be financed from various sources, such as the organization's own funds, funds obtained from cooperation with other organizations (open innovation) or financed by the internet community, by crowdfunding. Crowdfunding is a new method of financing new ventures, enabling individual founders of commercial, cultural or social projects to demand financing for many people, often in exchange for future products or actions. Crowdfunding projects can vary considerably in both purpose and size, from small art projects to entrepreneurs who are looking for hundreds of thousands of dollars in seed capital as an alternative to traditional venture capital investments (Schwienbacher, Larralde, 2010, p. 4,5).

Ecological projects are aimed at achieving sustainable growth of enterprises by limiting the negative impact on the environment and protection of the existing natural environment, which is why they are very risky, which entail huge financial outlays. According to many literature sources, the main obstacle to sustainability is the shortage of own funding and insufficient access to external financing. This conclusion was confirmed in 2011 by the Eurobarometer survey conducted by the EU company carried out by the Gallup Institute. It was found that the dominant barriers for eco-innovation for Polish companies are fund shortages (38%), uncertainty of return investments in eco-innovation (37%), uncertain market demand (35%) and lack of external financing (33%), (The Gallup Organization, 2011, p. 22-52). In addition, liberalization and climate change policy has driven the paradigm shift in systems for a cleaner environment. This caused, on the one hand, the need for further investments in devices supporting its cleaning up, and on the other hand, a fairly radical change in the role of consumers. In relation to the above, the aim of the article is to present the concept of crowdfunding, its essence and assumptions in the context of acquiring alternative capital for ecological projects (Candelise, 2015, p. 1).

## The definition and the essence of crowdfunding

New ventures require resources to be successful, and financing is one of the most critical of them. In recent years, crowdfunding has proved to be a new way of entrepreneurial ventures to secure funds without having to look for venture capital or other traditional venture investment sources (Mollick, 2014, p. 1-16).

Crowdfunding has been defined in the European Commission's communication of 14/03/2014 as a crowdfunding related to an open invitation addressed to the public, while the aim is to obtain funds for the implementation of a specific project. These invitations are published and disseminated via the Internet, so they are only valid for a certain period of time<sup>1</sup>. Crowdfunding draws inspiration from concepts such as microfinance and crowdsourcing (Poetz, Schreier, 2012, p. 24-256), but it represents its own unique fundraising category, supported by the growing number of websites dedicated to this topic. Schwienbacher and Larralde (Schwienbacher, Larralde, 2010, p. 4) define crowdfunding as „an open invitation, mainly via the Internet, to provide financial resources in the form of donations or in return for some form of reward and / or voting rights to support initiatives for specific purposes”. Dziuba, (Dziuba, 2012, p. 84), in Polish literature, defines crowdfunding as any form of raising funds through a computer network (broader approach), also indicates a narrower definition, defining the process of collecting funds by enterprises, artists or non-profit organizations for the implementation of projects, organization of ventures, as well as for investments

The basic idea of crowdfunding is to raise money through a relatively small contribution made by a significant number of people (Bradford, 2012, p. 119). Using the Internet, an entrepreneur can communicate with potential investors who can show small expenses for a specific purpose. Companies do not have an intermediary: anyone with a good idea can become an entrepreneur, anyone who has a small amount of money can become an investor.

Crowdfunding is a type of collection and allocation of capital transferred for the development of a specific undertaking in return for a specific return service that involves a wide range of capital providers, characterized by the use of ICT and a lower barrier to entry and better transaction conditions than generally available on the market” (Król, 2014). Etymologically derives from English, from merging the words crowd (crowd) and funding (financing). Specifies the collection of funds from the (Internet) crowd. The goals, types

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<sup>1</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 27/03/2014 “Freeing the potential of crowdfunding in the European Union” (<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2014:172:FIN>).

and nature of collections are different, and in practice, several types of crowdfunding have developed (Kordela, 2016, p. 145).

It should also be mentioned that crowdfunding as a new mechanism for obtaining funds is distinguished by certain features that allow it to be distinguished from public collections, donations and other traditional forms. The first feature is the transfer of cash, as a consequence of raising capital, always in a dematerialized form, i.e. using ICT solutions. The goal of the crowdfunding funded project is clearly defined, the appropriation of the funds and the effects of their spending are clearly defined. Crowdfunding does not require the consent of any state body and may be run for personal, business or public purposes. The terms of raising capital under crowdfunding are beneficial to the recipient due to the lack of bureaucratic constraints, making it accessible to the average citizen. Another feature is the existing wide community of message recipients. This is followed by another feature, i.e. no restrictions on access to project support. The possibility of project support is presented in an open manner, addressed to an unmarked addressee. The last very important feature that distinguishes crowdfunding is the existence of a returnable benefit for providing financial support (Kozioł-Nadolna, 2015, p. 672).

Practice has developed several types of crowdfunding (Raport z prac..., 2017, p. 139). The most common model of the functioning of the crowdfunding platforms is the donation model, which consists in supporting the support of patients, but also artistic projects, sporting events, cultural events or social campaigns. In a traditional donation model, participants are not rewarded; in a modified (sponsor) model, they receive material prizes, for example, CDs, books, for support. In this model, one can distinguish the model without rewarding participants (non-rewards model) and rewarding participants (reward-based model). Another is the lending model, which consists in granting loans, generally in small amounts, between persons, one of whom is interested in investing money (lender, investor), and the other most often obtaining short-term capital from external sources (borrower, beneficiary). Transactions take place via online websites without the participation of financial institutions. In the last, investment model, funds are transferred in exchange for a promise of participation in the enterprise or in profits. As the first in this area, one can distinguish the model investment for participation, also known as share crowdfunding or equity crowdfunding, the investor transferring funds receives shares or shares in an enterprise implementing a financed project and another, collective (collective) investment model, the investor receives the right to participate in profits or income generated by the financed project, but does not receive shares (stocks) in the enterprise implementing the project. The bonus model is a submodel and based on prizes. In this case, the sponsor in exchange for the transferred The

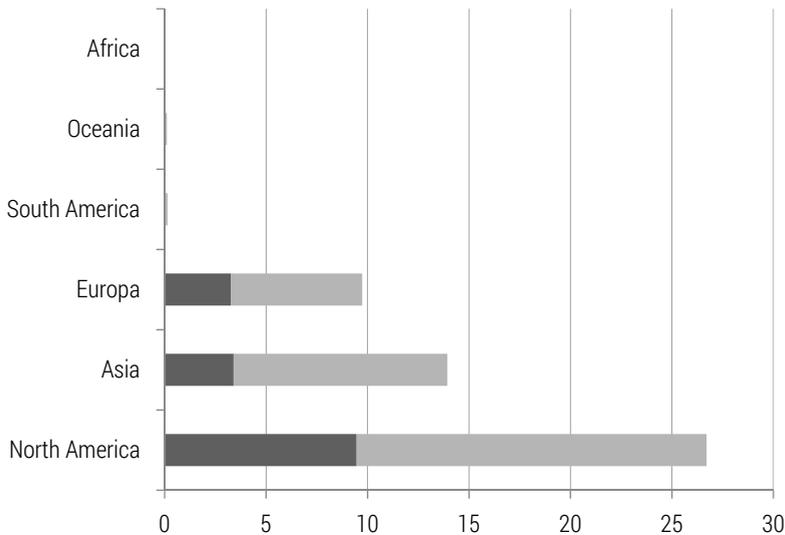
funds receive gifts that they can have meaning measurable (ticket, plate, the game or the possibility of a final purchase product at a promotional price) or purely symbolic, autograph, photo artist. However, it is worth emphasizing that often this reward is lower than the financial contribution to the project (Kędzierska-Szczepaniak, 2016, p. 33). The mixed model is a mix of the models mentioned

## Crowdfunding in the world

It should be noted that the importance of crowdfunding increased along with the development of the Internet and various types of social platforms. Market prosperity dates back to 2009, when it launched one of the largest crowdfunding platforms in the world – Kickstarter. The development of social media, such as MySpace, Facebook, Instagram or Twitter, was also important in the development of crowdfunding (Kordela, 2016, p. 145).

At the end of 2015, the value of transactions carried out on the crowdfunding market amounted to over USD 34 billion. The US market is a leader because it covers over 56% of all transactions. China occupies the second position in the world in terms of the number of registered transactions. In 2014, the value of crowdfunding in Asia increased by 320% compared to 2013, and thus the continent became the second largest transaction value after North America, although already in 2015, the increase compared to the previous period was 201%. It should be added that in all analysed periods the United States remains the leader of crowdfunding platforms with more than twice the value of transactions in relation to China in 2014 and over 1,5 more in value for 2015.

The share of North America and Asia is over 90% of all transactions. Europe's share in global social finance is 16%. The smallest share in the crowdfunding market includes areas of Oceania and Africa. It should be mentioned that Australia, which belongs to the area of Oceania, does not have a greater share in crowdfunding financing, while Africa remains at a low level of economic development. The structure of the crowdfunding market is shaped primarily by the US, Asia (mainly China) and Europe (mainly Great Britain) market (Kozioł-Nadolna, 2015, p. 676), which according to the state of 2015 is a leader among European countries ([www.crowdexpert.com/crowdfunding-industry-statistics](http://www.crowdexpert.com/crowdfunding-industry-statistics)).



**Figure 1.** The value of crowdfunding transactions in individual regions of the world, in billion USD

Source: authors' own work based on [www.crowdexpert.com/crowdfunding-industry-statistics](http://www.crowdexpert.com/crowdfunding-industry-statistics) [20-09-2017].

With the development of the crowdfunding market, the structure of using individual models has also changed significantly. At the beginning of the functioning of the discussed market, the model based mainly on charitable actions, with a small share of investment models, predominated. The aforementioned situation was justified in the absence of legal regulations regarding the functioning of platforms, investors did not make investments using the crowdfunding method (Raport z prac..., 2017, p. 130). Initially, the shareholders were focused on participation in crowdfunding on non-returnable and charitable help. It was not until the introduction of legal advisors in 2012 and subsequent in 2014 (Report Crowdfunding, 2014). they changed layout in platform models available on the market. With the development of the market, the loan model of crowdfunding, which is currently the most important model among those available, started to gain importance.

**Table 1.** Share of individual crowdfunding models in 2010-2015 [%]

| The model of the functioning of crowdfunding platforms | 2010  | 2011  | 2012  | 2013  | 2014  | 2015 |
|--|-------|-------|-------|-------|-------|------|
| The donation   | 54,65 | 48,93 | 36,81 | 22,05 | 11,96 | 8,28 |
| Bonus  | 1,86  | 4,45  | 14,41 | 11,95 | 8,20  | 7,79 |

|                      |       |       |       |       |       |       |
|----------------------|-------|-------|-------|-------|-------|-------|
| The investment model | 5,92  | 6,44  | 4,35  | 6,50  | 6,84  | 7,44  |
| The lending model    | 37,57 | 40,18 | 43,97 | 56,61 | 68,31 | 72,95 |
| Hybryd               | 0,00  | 0,00  | 0,47  | 2,90  | 4,69  | 3,53  |

Source: authors' own work based on <http://crowdexpert.com/crowdfunding-industry-statistics> [20-09-2017].

On the European market, the first crowdfunding platforms started to be created in 2010. Among the European countries, the United Kingdom is their leader. France ranks second, while Germany ranks third in terms of the market value of market crowdfunding.

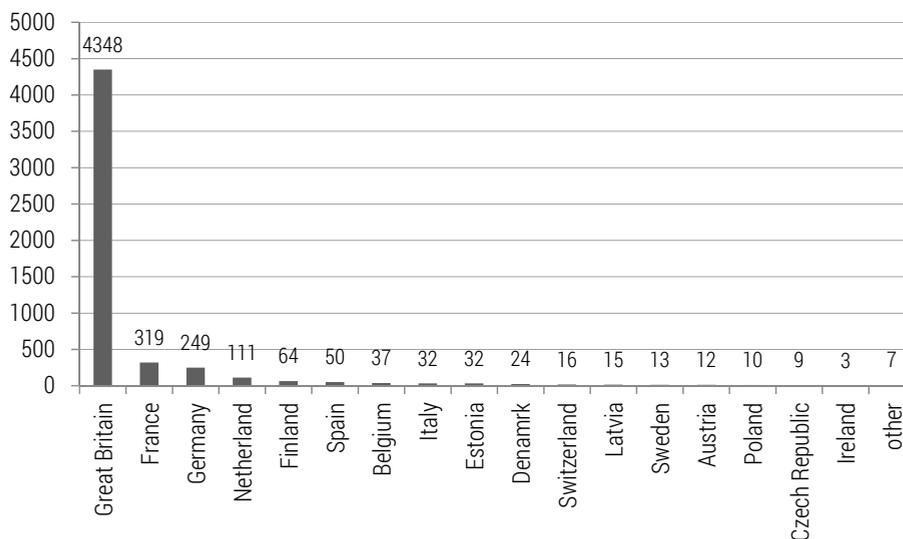


Figure 2. European states and the value of crowdfunding transactions, as at the end of 2015 [in billion USD]

Source: authors' own work based on [www.crowdexpert.com/crowdfunding-industry-statistics](http://www.crowdexpert.com/crowdfunding-industry-statistics) [20-09-2017].

On the European market, alternative methods of financing projects grew very quickly, and the market size exceeded EUR 5,4 billion in 2015.

## Crowdfunding as a method of financing ecological projects

Crowdfunding successfully enters the field of environmental projects. Not infrequently, it achieves a higher success rate than other ideas funded by the online community. Other platforms are being created in the world dedicated to financing „green” investments.

Community investors like to support projects that improve the natural environment, especially near their place of residence. In many countries, new social platforms are created dedicated to financing such projects. From the London report, in the section on social financing of the environment, we will find out that in 2016 all of the 121 energy-related crowdfunding campaigns were successful. A total of 118 million euro was collected, and the average return for the investor was 7,36%. This is another proof that environmental crowdfunding is characterized by a higher success rate.

Projects for the environment supported through social funding platforms are being created more and more. The platforms themselves, however, have not yet noted a massive interest in supporting projects for environmental protection. According to the Massolution company (Report Crowdfunding..., 2015, p. 345), which monitors social platforms, projects of this type constitute only 1.5 percent. all campaigns (the total crowdfunding market is estimated at approx. USD 16,2 billion).

This table lists 29 projects for environmental protection. Countries in which platforms for environmental protection are located:

- United Kingdom 5 projects,
- Germany 6 projects,
- France 6 projects,
- The Netherlands 4 projects,
- USA 8 projects,
- Portugal 1 project,
- Switzerland 1 project.

The model that occurs most often is the lending model.

Table 2. Social funding platforms oriented towards environmental protection

| Platform                 | Country     | Founda-<br>tion year | Platform<br>oriented                     | Orientation<br>technologies  | Model                              | Profits for the investor                    | Number of<br>projects | Success<br>rate | Average returns<br>[%] | Average returns<br>[EUR] |
|--------------------------|-------------|----------------------|--|--|------------------------------------|---|-----------------------|-----------------|------------------------|--------------------------|
| Abundance<br>Generation  | Gr. Britain | 2012                 | renewable<br>energy<br>sources,<br>(RES) | mixed  | lending                            | % of revenue or profits<br>from the project | 23                    | 0,61            | 7,49                   | 13526367                 |
| Bettervest               | Germany     | 2013                 | RES and<br>energetic<br>efficiency       | mixed (with<br>the predomi-<br>nance of<br>energy effi-<br>ciency) | lending                            | % of revenue or profits<br>from the project | 31                    | 0,9             | 7,21                   | 1774240                  |
| Clean Reach              | USA         | 2014                 | RES                                      | energy from<br>the oceans  | donation                           | -   | 6                     | 0               | -                      | 5698                     |
| CollectiveSun            | USA         | 2013                 | RES                                      | sunny  | Loan (for non-<br>profit projects) | % of revenue or profits<br>from the project | 4                     | 0,75            | 6,20                   | 254769                   |
| Coopernico               | Portugal    | 2015                 | RES                                      | mixed  | Investment<br>(Social Shares)      | Profits proportional to the<br>shares held  | 7                     | 0,86            | -                      | 2676                     |
| Crowdenergy              | Germany     | 2012                 | RES                                      | stoneczną  | Investment<br>(Social shares)      | Profits proportional to the<br>shares held  | 5                     | 0,8             | -                      | 1818                     |
| Divvy                    | USA         | 2013                 | RES                                      | mixed  | Donation with<br>prizes            | -   | 4                     | 0,5             | -                      | 10423                    |
| Duurza-amlh-<br>vesteren | Netherlands | 2014                 | RES                                      | mixed  | Lending                            | % of revenue or profits<br>from the project | 9                     | 0,78            | 5,68                   | 2892000                  |
| Econeurs                 | Germany     | 2013                 | RES                                      | mixed  | Lending                            | % of revenue or profits<br>from the project | 10                    | 0,9             | 5,34                   | 3915150                  |
| Enerflip                 | France      | 2014                 | RES                                      | mixed  | Lending                            | % of revenue or profits<br>from the project | 1                     | 1               | -                      | 60                       |

|                      |             |      |         |       |  |   |    |      |      |          |
|----------------------|-------------|------|---------|-------|--|---|----|------|------|----------|
| Gen Community        | Gr. Britain | 2013 | RES     | mixed | I Investment (Social shares)                 | Profits proportional to the shares held, plus the surplus of income invested again for the real estate                | 2  | 1    | 7.00 | 1351516  |
| Greencrowd           | Netherlands | 2012 | RES     | mixed | Mixed, lending, investment                   | Variable profits depending on the choice of the investment tool (loan, shares)  | 23 | 0.96 | 4.88 | 2097 040 |
| GreenVesting         | Germany     | 2009 | RES     | sunny | lending                                      | % of revenue or profits from the project  | 9  | 1    | 5.33 | 97095    |
| GreenXmoney          | Germany     | 2013 | RES     | mixed | lending                                      | % of revenue or profits from the project  | 13 | 0.85 | 4.54 | 27755    |
| GridShare            | USA         | 2015 | RES     | mixed | Lending (for electrification of rural areas) | Benefits depending on: % of revenue or profits from the project (lending), dividend, or awards provided (with prizes) | 14 | 0    | 6.38 | 54874    |
| LehDeiner-UmweltGeld | Germany     | 2014 | RES     | mixed | lending                                      | % of revenue or profits from the project  | 19 | 0.89 | 5.25 | 4029050  |
| Lendosphere          | France      | 2014 | RES     | mixed | lending                                      | % of revenue or profits from the project (higher % returns for investors living in the investment area)               | 16 | 0.94 | 5.42 | 1446990  |
| Lumo                 | France      | 2012 | RES     | mixed | lending                                      | % of revenue or profits from the project plus consumption of generated energy   | 6  | 0.67 | 3.00 | 185      |
| Microgenius          | Gr. Britain | 2011 | general | mixed | investment                                   | Profits proportional to the shares held   | 2  | 1    | -    | 1436458  |
| Milaap               | India       | 2010 | general | sunny | Lending                                      |   | 15 | Nd   | -    | 338      |

|                |               |      |         |       |  |  |    |      |      |           |
|----------------|---------------|------|---------|-------|--|--|----|------|------|-----------|
| Mosaic         | USA           | 2013 | RES     | sunny | lending                                      | % of revenue or profits from the project   | 20 | Nd   | -    | 5785414   |
| Re-Volv        | USA           | 2014 | RES     | sunny | Donation (plus Renewable Fund)               |  | 3  | 1    | -    | 106448    |
| Solar Schools  | Gr. Britain   | 2014 | RES     | sunny | donation                                     |  | 65 | 0,82 | -    | 691976    |
| SunFunder      | USA /Tanzania | 2012 | RES     | sunny | Lending (for electrification of rural areas) | % of revenue or profits from the project   | 34 | 1    | 3.52 | 986238    |
| Trillion Fund  | Gr. Britain   | 2013 | RES     | mixed | Hybrid (Bonded, Investment, Social Shares)   | Variable profits depending on the choice of the investment tool (bonds, social shares, shares, funds)    | 29 | 0,97 | 7.60 | 102095794 |
| Veolis         | Switzerland   | 2014 | general | mixed | mixed  | Benefits depending on: % of revenue or profits from the project (loan) and provided prizes (with prizes) | 3  | 1    | 2.50 | 77498     |
| Village Power  | USA           | 2013 | RES     | mixed | Investment (social shares)                   | Profits proportional to the shares held  | 13 | 0,62 | Nd   | 5202674   |
| We share Solar | Netherlands   | 2013 | RES     | sunny | lending                                      | % of revenue or profits from the project   | 8  | 0,63 | 5.75 | 1075574   |
| WindCentrale   | Netherlands   | 2012 | RES     | wind  | Investment (social shares)                   | % of revenue or profit from the project plus consumption of generated energy                             | 9  | -    | 3-8  | 14300000  |

Source: (Candelise, 2015, p. 12-15).

As previously mentioned, the United Kingdom, France and Germany are countries where crowdfunding has developed best in terms of number of transactions and number of platforms. In the case of crowdfunding platforms dealing with the protection of the environment, it is also worth noting those originating in the above-mentioned countries. One of the examples of social financing support can be distinguished by the charity organization Growing a Greener Britain, founded by Idverde UK and the crowdfunding platform Spacehive ([www.spacehive.com/about](http://www.spacehive.com/about)), launching the crowdfundmypark 2017<sup>2</sup> information campaign. Its aim is to mobilize local communities from all over Great Britain to finance green areas. Positive experiences from this social campaign caused that local communities are more and more willing to support green investments, which in turn attracted the attention of companies such as Stihl and Greentech, who announced that they would support non-financial (by donating tools and materials) those projects that would refer to successes ([www.obserwatorfinansowy.pl](http://www.obserwatorfinansowy.pl)).

The second example of an interesting financial commitment of the local community for environmental protection, which is worth showing, can be found in France. The Champs Chagnots ([www.thewindpower.net](http://www.thewindpower.net)) wind farm project located in the municipality of La Chapelle Montreuil (in New Aquitaine) is being implemented there. The undertaking aims to meet the energy needs of the local community. The implementation of the project will also avoid the emission of carbon dioxide equivalent to 1539 tons per year. The total value of the project is estimated at EUR 1,5 billion. 86% from the costs will be covered by a bank loan, Sergies, a partner of the project, and will spend 11,2%. It is important, however, that the inhabitants also want to have their financial participation in the project – the Énergie Partagée civil movement will cover 2,8% costs. Énergie Partagée ([www.energie-partagee.org](http://www.energie-partagee.org)) is an association whose purpose is to finance social and implementation of energy projects, mainly related to renewable energy. It was established that the minimum payment of each member of this association will be 100 euros.

Another example is the launch of a program called 1000 roofs (1000-Dächer-Programm), which aims to increase the satisfaction of energy needs from solar energy (solar collectors and photovoltaic cells), which is implemented in the third country where crowdfunding, Germany is growing rapidly. This project also financed the community through the bettervest environmental platform. In total, a much larger amount than the minimum assumed was

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<sup>2</sup> CrowdfundMyPark2017 is a campaign started by charity Growing a Greener Britain (GGB) to promote crowdfunding. The GGB Movement enables local people, Community, projects, projects and projects. Projects that crowdfund using GGB can also access Green-Tech and Stihl. <https://about.spacehive.com/crowdfund-my-park-2017-encouraging-people-to-love-and-improve-their-local-parks/>

obtained for this purpose – 194,7 thousand euro with the minimum threshold of 136,3 thousand ([www.photovoltaiik-web.de](http://www.photovoltaiik-web.de)).

## Conclusions

International organizations, global companies and politicians pay attention to the need to support projects related to environmental protection. Public finances are not able to meet these requirements. Co-financing by citizens can become indispensable. Ecological projects are aimed at achieving sustainable growth of enterprises by limiting the negative impact on the environment and protection of the existing natural environment, which is why they are very risky, which entail huge financial outlays. According to many literature sources, the main obstacle to sustainability is the shortage of own funding and insufficient access to external financing. In many highly developed countries, public awareness of climate protection is already well advanced and in small countries, citizens are willing to engage in projects that support green solutions. In recent years, the protection of the environment in which we operate plays an important role. At the same time, it should be remembered that it is a very expensive process that we can finance with the participation of crowdfunding, which has been developing very dynamically in recent years. As the statistics described above show, crowdfunding as a method of financing becomes more and more important in the world. The greatest benefit for capital seekers is the ease of access to potential investors, while in the case of capital donors, the opportunity to make a profit, in this case even a small one. It should be mentioned that crowdfunding is a relatively new method of financing projects of an ecological nature, but gaining more and more popularity

## Literature

- Bradford C.S. (2012), *Crowdfunding and the Federal Securities Laws*, [www.digitalcommons.unl.edu/lawfacpub/119](http://www.digitalcommons.unl.edu/lawfacpub/119) [25-09-2017]
- Candelise Ch. (2015), *Report. Crowdfunding and the energy sector*, Luigi Boccoli, Roma
- Dziuba D.T. (2012), *Rozwój systemów crowdfundingu – modele, oczekiwania i uwarunkowania*, "Problemy Zarządzania" Vol. 10, No. 3(38)
- Kędzierska-Szczepaniak (2016), *Wykorzystanie crowdfundingu w finansowaniu działalności gospodarczej*, "Studia i Materiały" No. 2
- Komunikat Komisji do Parlamentu Europejskiego, Rady, Europejskiego Komitetu Ekonomiczno-Społecznego i Komitetu Regionów z dnia 27.03.2014 r. pt. „Uwol-

- nienie potencjału finansowania społecznościowego w Unii Europejskiej” ([www.eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2014:172:FIN](http://www.eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2014:172:FIN)).
- Kordela D. (2016), *Crowdfunding w Polsce, koncepcja finansowania społecznościowego*, “Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu”, Wrocław
- Kozioł-Nadolna K. (2015), *Crowdfunding jako źródło finansowania innowacyjnych projektów*, “Zeszyty Naukowe Uniwersytetu Szczecińskiego”, Szczecin
- Król K. (2014), *Finansowanie społecznościowe jako źródło finansowania przedsięwzięć w Polsce*, in: *Crowdfunding FAQ*, [www.crowdfunding.pl/crowdfunding-faq/#.Us-zya-A3mI](http://www.crowdfunding.pl/crowdfunding-faq/#.Us-zya-A3mI) [10-01-2014]
- Mollick E. (2014), *The dynamics of crowdfunding: An exploratory study*, “Journal of Business Venturing” Vol. 29, No. 1, January
- Poetz M., Schreier M., (2012), *The value of crowdsourcing: can users really compete with professionals in generating new product ideas?*, “Journal of Product Innovation Management” Vol. 29, No. 2
- Raport Crowdfunding* (2014), Warszawa, [www.newtech.law/wp-content/uploads/2017/08/raport-o-crowdfunding.pdf](http://www.newtech.law/wp-content/uploads/2017/08/raport-o-crowdfunding.pdf) [15-09-2017]
- Raport z prac zespołu roboczego ds. rozwoju innowacji finansowych (FinTech)* (2017), Warszawa
- Schwienbacher A., Larralde B. (2010), *Crowdfunding od small entrepreneurial ventures*, Handbook of Entrepreneurial Finance, Oxford
- [www.crowdexpert.com/crowdfunding-industry-statistics](http://www.crowdexpert.com/crowdfunding-industry-statistics) [20-09-2017]
- [www.energie-partagee.org](http://www.energie-partagee.org) [20-09-2017]
- [www.obserwatorfinansowy.pl/tematyka/rynki-finansowe/zielony-crowdfunding](http://www.obserwatorfinansowy.pl/tematyka/rynki-finansowe/zielony-crowdfunding) [10-09-2017]
- [www.photovoltaiik-web.de/photovoltaik-lexikon/ziffern-0-9/1000-daecher-programm](http://www.photovoltaiik-web.de/photovoltaik-lexikon/ziffern-0-9/1000-daecher-programm) [22-10-2017]
- [www.spacehive.com/about](http://www.spacehive.com/about) [25-09-2017]
- [www.statista.com/statistics/594496/sme-crowd-funding-finance-types-sought-united-kindom](http://www.statista.com/statistics/594496/sme-crowd-funding-finance-types-sought-united-kindom) [14-09-2017]
- [www.thewindpower.net/scripts/fpdf181/windfarm.php?id=23467](http://www.thewindpower.net/scripts/fpdf181/windfarm.php?id=23467) [10-10-2017]