

CO₂ offsetting companies as consumer responsibility innovation

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Abstract: The aim of this paper is to examine the role of CO₂ offsetting enterprises in pursuing the concept of sustainable development. The authors analyze business model, innovative potential and the impact of these companies on the consumers. Research methods used in the paper are the literature analysis and case study. Within the past years the concept of sustainable development has been gradually applied in the companies in numerous sectors. Simultaneously, consumers become increasingly more aware of their impact on the natural environment. As a result, first companies were established which enable to off-set amount of CO₂ produced at various stages of manufacturing and delivering services. Thanks to them, a responsible consumer may contribute to the projects which help to reduce greenhouse gas emissions by donating chosen amount of money. The authors consider companies' attitudes related to the operations of these companies.

Keywords: CO₂ offsetting, sustainability, CSR, innovation

1. Introduction

The purpose of the paper is to analyze an example of CO₂ offsetting companies as an innovative business model. Additional goal is to examine reasons for which other companies decide to become carbon neutral or use other services of the former. The authors consider these type of companies as an example of addressing climate change challenges and launching companies based on the sustainable development concept¹. The impact of the paper is to show that there is a market for sustainable development based companies which may be profitable and work with larger partners on the market.

¹ By the companies based on the sustainable development concept, the authors understand companies which business case is directly related to the sustainable development (SD) and which use it as their competitive advantage. Those companies have SD included in the strategy, mission and vision as well as in the operations of the company.

The research question of this paper is that CO₂ offsetting companies are a successful example of business model innovation. CO₂ certificates are examples of successful sustainable product innovation for the companies which plan to expand their corporate social responsibility (CSR) activities.

The methodology used in this paper includes the review of the literature including books, papers, reports and online resources, as well as case study method. In this way, the authors analyze examples of three CO₂ offsetting companies operating in different countries.

Main result is that the analysed companies may be an example of successfully applied concept of sustainable development to business operations. Additionally, the authors look at motives for the customer companies. Not all of them are linked to the support of the concept. They mostly treat it as a part of marketing/PR activities. Still there are many questions that remain open:

- How significant is the impact of supported projects?
- Is it a psychological tool for the customers to “feel better”?
- Are the projects effective and do they perform what they promise?
- Are the prices of offsetting calculated correctly?

Although they present interesting research problems, they were not answered in this paper, which focuses on the CO₂ offsetting as a business model.

2. Application of Sustainable Development

Sustainable development is a concept which gained significant popularity in the last years. The idea of sustainable development links three inter-related spheres: economy, society and environment, each of them is perceived to be highly significant in the future development of people, economies, countries and of the whole world. The origins of the concept date back to the late 1980s and are related to the report prepared by the Brundtland Commission “Our Common Future” where sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987).

The first pillar of sustainable development – ecological balance – pertains to human interaction with the environment and attempts to keep the environment as pristine as possible. The major goal is to minimize the negative impact on the environment as well as to protect

nonrenewable resources. This aim can be achieved only if the natural resources would be consumed at a pace, which guarantees that resources will last for future generations. Biodiversity maintenance, atmospheric stability and ecosystems stability are other vital aspects of ecological sustainability.

The second sphere of sustainable development – economic growth – is connected to business profits as well as to social and environmental costs and covers a wide spectrum of related economic issues such as externalities, public goods, economics of scale, market structures, information asymmetry, public choice and others (Rao, 2002: 377-379). To give an example market failures, costs of externalities are not always taken into consideration when final profits of the company are calculated. This omission stirs much controversy. Undoubtedly, re-calculation of profits (in sense of including externalities' costs) means a reduction in final financial results.

The last pillar – social progress– concentrates on life quality development. Social sustainability comprises distributional equity, adequate provision of social services (such as health and education), gender equity, and political accountability and participation (Guijt, Moiseev, Prescott-Allen, 2001).

There are many governmental programs and projects promoting sustainable development. International organizations as well as European Union and governments try to encourage people to change their habits and lead more sustainable life styles. Those programs and regulations are introduced to secure good living conditions for the future generations. Not only individuals can adopt the idea of sustainable development, but also companies: small and medium enterprises as well as multinationals. In order to help companies introduce new, sustainable standards in their business, emerged an idea of Corporate Social Responsibility (CSR). CSR refers to companies taking responsibility for their impact on society (COM (2011) 681 final). Corporate social responsibility concerns actions companies over and above their legal obligations towards society and the environment. CSR and its rules and conditions can be perceived as a guideline for companies which try incorporate the idea of sustainable development into the main strategy of the enterprise. Nowadays companies may use more and more CSR tools and initiatives such as GRI (Global Reporting Initiative), Global Compact, Standard Social Accountability 8000 (SA 8000), AA 1000 standards, ISO26000, ISO 14000, EMAS and many others. Companies are eager to implement those and also others tools in order to be perceived as more sustainable and

responsible. Sadly, some companies incorporate CSR into their strategy only in documents but in reality they do not act in a responsible way.

In this paper, the authors concentrate on the environmental issues related to sustainable development and CSR– mainly with CO2 offsetting, which is believed to be a remedy towards environment degradation and air pollution. CO2 offsetting can be perceived as a innovation in environment protection.

3. Innovations in environment protection²

Innovation and innovativeness are subject not only of economics but also of social studies. Disciplines such as economics, management, engineering, sociology, psychology and praxeology investigate various aspects of innovations. There are different approaches to define the innovation. The term innovation (from latin, *innovatio* - new, reform) refers to something new, previously unknown. It is defined as “the introduction of something new, the newly introduced” (Tokarski, 1980: 307).

The concept of innovation has been introduced into economics by J. Schumpeter. This Austrian economist perceived innovation as a factor in economic development, claiming that the development of innovation is accompanied by economic growth and it continues until all the possibilities of further diffusion of innovation finish (Bojewska, 2009: 155). Schumpeter understood the concept of innovation as new combinations of the five following situations:

- launch of a new or improved product, not known to consumers;
- use of new or improved methods of production, not yet been tested;
- opening of a new market, not previously been introduced;
- acquisition and development of new sources of raw materials or components;
- introduction of organizational changes within the company (Schumpeter, 1960: 103-104).

According to P.F. Drucker, innovations infuse into all areas of business. Drucker claimed that innovation “is the purposeful and organized search for changes, and the systematic analysis of the opportunities that these changes might offer for economic or social innovation” (Drucker,

² This section is based on K. Negacz, A. Para, Innovativeness of Polish Tourism Companies, The Proceedings of the International Scientific Conference for PhD Students and Young, Scientists MERKÚR, 2013, Bratislava, Publisher EKONÓM, pp. 321-332.

2004: 39). Change serves as the basis of innovation, since it leads to new products or services. Drucker emphasized that innovation is closely linked to organization's resources and creates new opportunities to create wealth (Drucker, 2004: XII).

OECD defines innovation as “the implementation of a new or significantly improved product or process, a new marketing method, or a new organizational method in business practice, workplace organization or relationship with the environment (Oslo Manual: 49)”. Innovation is perceived as the ability to constantly seek and use in practice the results of scientific research, ideas and inventions (Janasz, 2002: 54).

The innovative enterprise is a smart organization that continuously generates and executes all forms of innovation, dynamically responds to changes and thanks to its modern and competitive operations is appreciated by consumers. The term innovativeness is a company's ability to create and implement innovation, new and improved products, new or changed processes or technological organization (Negacz, Para, 2013).

Definitions presented above show the complexity of innovation and innovativeness. In this paper the authors want to focus on innovations in the field of environment protection.

The concept of CSR (presented in the previous chapter) can be linked to environmental innovations which were described by Cleff, Rennings (1999: 191-193). The idea of CSR was the response to the changing business environment. The concept developed because of the human need to assess and justify the obligation and responsibility of those who manage the companies. Ecological innovations can be divided into:

- a) process innovations - enable the production of an exact number of products with the lower amount of input,
- b) product innovations - include the modifications of products, services and development of new ones,
- c) organizational innovations - include new forms and tools of management (Leszczynska, 2011: 34).

There are many examples of technical innovations that are connected with air and climate protection, sewage economy, water protection. In this article the attention will be paid to CO₂ offsetting.

4. Customer perception

Both CSR and innovations are concepts well-grounded in theory. Some organizations decide to include CSR into their strategy and operations treating it as a kind of organizational innovation (MacGregor, Fontrodona, 2008).

While pursuing an innovative business model, the entrepreneur should examine customers' perceptions in order to improve it and make necessary adaptations. A paper "Voluntary CO2 emission compensation, a Viable Business Case?" by A. Elekan, C. Fernandez, A. Moleenar presents a comprehensive set of the companies' motives to engage in the voluntary CO2 offsetting (Elkan et al., 2007). They are based on the in-depth interviews with Frank van der Tang, co-founder of Greenwise B.V. and Denis Slieker, director of Face Foundation and Climate Neutral Group. They include elements as follows:

- Greenwashing – a motive mentioned as a primary reason why companies decide to undertake CO2 offsetting. It may be defined as actions taken by the companies to appear environmentally responsible or in line with sustainable development concept. It is tangible as companies may use the label carbon neutral. They also often chosen visible projects as tree planting in the forestry. Sometimes, companies purchase certificates in order to avoid negative attention.
- Consumer demand – increasingly many consumers decide to purchase carbon neutral products and as a consequence companies are forced to include them in the portfolio.
- Fashion – another reason mentioned in the interviews is that the climate change becomes a popular topic in media and academics.
- Philosophy – part of the companies have internal strategies to combat climate change.
- Strategic differentiation – an option to present diversified product portfolio.
- Employee commitment – a way of creating commitment and encouraging creative thinking.

Future motives – based on the assumption that soon it will become normal to offset the product.

5. CO₂ offsetting companies business model

Carbon, or in general greenhouse gas, emissions are an example of global externality (Nordhaus, 1991: 4). Some of the effects include changing crop yields, loosing land to ocean (Ibidem), etc. There is a rich literature on emission effects with Stern Review being the most recognizable (Stern 2006) and many relating to country based economy, e.g. Mendelsohn, Mendelsohn, & Neumann on the US (2004) or undertaking specific perspectives (Tol, 2009; Boselo, Roson, Tol, 2006; Bohle, Dowining, Watts, 1994).

Carbon dioxide offsetting can be defined as a mechanism, by which individuals and corporations pay for reductions elsewhere in order to offset their own emissions. This compensatory measure is introduced usually as sponsorship of activities and projects, which aim at increase in absorption of carbon dioxide. It differs from traditional sustainable products due to its intangibility (Lovell, Bulkeley, Liverman, 2009: 2-3). Tree planting is an example of this kind activities.

In the paper, the authors present three cases of the entities which made CO₂ offsetting their main business model. They differ as it comes to legal structure, country of origin and operation details, but all enable carbon compensation or becoming carbon neutral for other companies.

CO₂logic, Belgium

The company CO₂logic is based in Belgium, Brussels. Its business model is based on calculating, reducing and offsetting CO₂ emissions. A small enterprise employs 8 people and operates since 2006. From this time it has received multiple awards, e.g. BNP Paribas - Young Entrepreneurs Award 2007, Finalist of the Energy & Environment Awards 2008, Finalist of the Best Innovator Award 2009 organized by Solvay Business School and AT Kearney, BTC "Be Sustainable Award 2011.

It offers services for individuals and for the business. The individual customers may use the services for travelling, consumption or residence. By the online CO₂ calculator one may check its carbon footprint. To give an example, after calculating the flight details, the calculator presents chosen data about emissions produced (tonnes of CO₂) and offers to pay certain amount of money to offset the flight. After the purchase the CO₂ offsetting certificate is sent by mail to

the customer. Then the company supports project certified by the United Nations (UNFCCC) and/or Gold Standard³.

For the business, it offers services allowing to reduce their climate impact. Their services include four step approach which is as follows:

- Calculating carbon footprinting or auditing using Bilan Carbone® (ADEME certified) and/or the WRI GHG Protocol or ISO 14064 and conducting Life cycle analysis and carbon footprinting (PAS 2050 BSI)
- Providing CO2 reduction advisory, energy audits, consulting different financial options and change management
- Offsetting CO2, carbon neutral advisory, consulting various emission reduction projects (CDM, JI, Gold Standard, VCS or other VER projects)
- Cooperation with communication/PR departments.

The company presents at its website a number of benefits for corporate customers. These include (CO2logic – For business):

- “Reduced climate impact (of the company, products ...)
- Reduced costs (electricity, gas, waste, fuel ...)
- Positive image, 'green' image avoiding greenwashing
- Increased staff motivation
- Anticipation of future regulations (PEB, carbon taxes, road fees ...)
- More sustainable purchasing policies
- The reduction efforts are measurable and reported according international standards”.

The company cooperates with a number of partners to ensure quality of their projects such as Gold Standard Foundation, WWF, Goodplanet and some advisory companies e.g. Deloitte or pwc. It is also partner consultant for Carbon Disclosure Project. The number of companies have decided to cooperate with CO2logic, e.g. CocaCola or Volvo.

Source: *CO2logic – For business*, <http://www.co2logic.com>, accessed: 2014-06-15.

³ For more information, see: www.cdmgoldstandard.org and www.unfccc.int.

Climatecare, United Kingdom

It is a profit for purpose organization founded in 1997 using CO₂ finances to fund sustainable development related projects. Having obtained a number of awards such as Queens Award for Enterprise in Sustainable Development (2014), Environmental Finance – Best Project Developer – Public Health (2013) and Guardian Sustainable Business Awards Finalist (2012), is one of the longest established in the field.

Through the years, it has developed various products. In 2000, in the partnership with The Co-operative Climatecare started offering to offset mortgages which was one of the first products in the world to include a carbon offset and since 2001 it offers online offsetting for private and corporate customers.

The business model used by Climatecare is based on the projects. Each of them has dual income stream obtained by separating its results. Its social outcomes are sold to the funding partners which is the second source and reduces risks. In the model governments, business and NGOs have possibilities to partner within the projects which raises their scale.

Some of the corporate customers include The Co-operative, Aviva, Jaguar, Land Rover. For the non-business partners, it worked with the UK government, advising DEFRA, DfID and the Kenyan Governments as well as with Scandinavian governments. The organization offers also sustainability consulting and carbon credits for various markets (the CDM, JI, Australian and North American).

Some of the projects which can be supported via this organization include (Climatecare – Our Projects):

- Gyapa stoves project – safer, less fuel consuming and less smoky stoves for developing countries;
- Lifestraw carbon for water – distributing filters and education in Kenya;
- Kibale project – reforestation project in Congo Basin directly reducing emissions;
- others.

Source: *Climatecare*, <http://climatecare.org>, accessed: 2014-06-19.

Myclimate, Switzerland/Germany

Myclimate was established as a foundation in Switzerland and a company in Germany (GmbH). As in the previous cases, it offers services for private customers and companies.

Myclimate finances shows how the finances are structured in the organization. It ensures that at least 80% of the donations will be spent for climate related and sustainable development projects. Less than 20% of the funds are used for administration and internal costs. An interesting insight on the organization gives Profit and Loss Account for 2013, presented in the Annual Report 2013 for both entities in Switzerland and in Germany (see Foundation myclimate, 2014). Expenses for carbon off-setting projects rose from ca. 9 mln CHF in 2012 to ca. 13 mln CHF in 2013. Climate education expenses increased by 123 000 CHF while administrative and other expenses have been reduced. At the same time, the income decreased by less than 1 mln CHF, mostly in CO2 offsetting donations and donations for the education.

It works on the service specific basis. The money is transferred to the supported projects once reductions took place which takes usually from 2 to 3 years (for energy projects). The organization offers projects portfolios (one for developing countries and one for Switzerland) and special products for corporate customers.

Enabling offsetting for individuals, myclimate has a wide range of services for businesses such as CO2 and resource management, software tools, climate neutral labels for the products. It also presents special solutions for some of the industries including printing and packaging, travel companies and hotel industry. There are also some other consulting related services for all types of companies which are as follows: workshops for employees, advice on Exemption from CO2 duties. Some of their customers are Swisscom or Papyrus.

Another branch of the organization operations is education. It organizes a number of projects aimed at the youth which are as follows:

- Climate Pioneers – from kindergarten to the secondary schools;
- earth reloaded - Jugend und Cleantech – for secondary schools;
- myclimate power schools – for upper secondary schools;
- Hot Stuff Climate Net – for upper secondary schools;
- Climate Laboratory – for trainees in the companies and vocational schools.

Other educational projects include creation of networks such as Youth Encounter on Sustainability YES, myclimate talents, myclimate Audio Adventures, TOPtoTOP expedition.

Source: *Myclimate*, <http://www.myclimate.org/>, accessed: 2014-06-20.

The cases given above are some examples from the growing branch. As it has been shown, they offer not only service of CO₂ offsetting, but also consulting, advisory and education programs. Some of other significant companies are the Carbon Neutral Company or CarbonFund.org.

6. Conclusion

In the paper, the authors have presented theoretical background related to the innovations in the companies, innovations related to environment as well as case studies of three chosen companies offering carbon reducing services.

CO₂ offsetting serves as a successful model of eco-innovation. Nowadays market situation is turbulent and dynamic. Companies have to put a lot of effort to be competitive and to be profitable and thus they try to generate and implement new types of innovations. More and more companies combine the idea of sustainable development and CSR with innovative solutions. This tendency may be observed due to the raising awareness of the environment protection in the business and society.

Building a business model on sustainable development concept has become increasingly popular since 1990s. Some companies decided to focus specifically on climate change consequences. Among many options related e.g. to reducing climate related risks, CO₂ offsetting companies have developed a portfolio of services for corporate and private customers. This type of innovation may be described as successful due to the following reasons:

- Many of the companies managed to participate in the market for considerable amount of time (from 17 to 8 years in considered cases). It proves that their services are needed and desired by the consumers.
- But for more aware private consumers who aim at reducing their own carbon footprint by offsetting their travels or residence, more and more companies decide to become carbon

neutral. Some of the companies treat it as a part of their marketing/PR activities, others have sustainable development or CSR department.

- Reducing climate change often is listed among some of strategy goals for the companies and becoming carbon neutral presents a good image of the company. It is also relatively easy solution as many services from CO2 offsetting companies can be ordered online.
- This business model enables not only supporting projects but also developing a wide range of sustainability-related products, raising awareness and establishing networks and partnerships.
- These actions help directly or indirectly to meet declared goals of most of these companies which is reducing climate change and its impact.

The abovementioned benefits show that this type of eco-innovation meet the market niche. It serves as reply to the private and corporate consumer demand, generates income and new business possibilities for the companies themselves and in most cases includes action certified to have positive impact on the environment. As such it may be described as sustainable relating to the three pillars of sustainable development and being financially sustainable, at the least in the medium term (8-17 years). Due to this, they are successful implementation of sustainable development concept in the business operations.

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Offsetowanie emisji dwutlenku węgla jako przykład innowacji społecznie odpowiedzialnej

Streszczenie

Celem artykułu jest ocena roli offsetowania emisji dwutlenku węgla przez przedsiębiorstwa jako element koncepcji strategii rozwoju zrównoważonego. Autorki analizują model biznesowy, potencjał innowacyjny oraz wpływ działalności wybranych firm na zachowania konsumentów. W opracowaniu posłużono się metodą studium przypadku, dokonano także analizy krajowej i zagranicznej literatury przedmiotu. W ostatnich latach koncepcja rozwoju zrównoważonego była implementowana zarówno w pojedynczych firmach, jak i w całych sektorach gospodarki. Jednocześnie konsumenci stali się bardziej świadomi wpływu, jaki wywierają na środowisko naturalne. W rezultacie tych zjawisk powstały pierwsze przedsiębiorstwa, które umożliwiają offsetowanie dwutlenku węgla wyemitowanego na różnych etapach procesów produkcyjnych i usługowych. Dzięki tym organizacjom konsumenci mogą wesprzeć finansowo projekty, które wspierają ideę redukcji emisji gazów cieplarnianych.

Słowa kluczowe: offsetowanie emisji CO₂, rozwój zrównoważony, społeczna odpowiedzialność biznesu, innowacje.