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Exploring the environmental strategy of big energy companies to drive sustainability¹

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Main message

Successful CSR strategies for big energy companies are crucial in order to sustain our planet's environment in the long term.

Key points

- Energy companies are constantly looking for new ways to reduce air emission and waste levels.
- Most of the studied big energy companies have implemented Elkington's Triple Bottom Line Sustainability model as a core for their strategic activities towards economics, society, and the environment.
- All studied energy companies are committed to comply with Kyoto Protocol regulations, and have admitted that the reason that they implemented new sustainable approaches into their procedures was because of the government regulations, incentives and renewable targets.

Introduction

Big corporations, such as energy industry companies are constantly under a loupe from environmental activists and interest organisations (Guo *et al.*, 2017). According to Goldenberg (2013), there are fewer than 100 companies in the world which have caused two thirds of greenhouse gas emissions generated since the beginning of the industrial era. Most of these businesses are in the energy sector, which is why it is unsurprising that energy companies are also the biggest gas emission and pollution producers in the world (Heede, 2014) developed the initiative for this research paper. An environment-focused online platform called One Green Planet has published a list of top energy companies leaving the worst impact on the planet (Kantamneni, 2014). All of these companies work in the oil and gas industry, which makes this research clearly focused on the comparison of the biggest oil and gas companies in the world.

The international agreement of the Kyoto Protocol commits countries to setting internationally binding emission reduction targets (United Nations, 2014). As demonstrated in the Framework Convention published by United Nations (2014), developed countries bear the greatest responsibility for the current situation of high emission levels, and are the countries of origin for the biggest oil and gas companies. This summarises the decision to choose five leader companies in the oil and gas industry sector located in different parts of the world. These companies are Exxon Mobile (USA), British Petroleum (UK), Saudi Aramco (Saudi Arabia), Sinopec (China) and Gazprom (Russia). To address environmental concerns in the context of strategy, one of the fundamental theories which is widely used by scholars (e.g., Lindgreen and Swaen, 2009; McWilliams *et al.*, 2006) is Corporate Social Responsibility (CSR) theory (Aggerholm and Trapp, 2014; Carrol 2015; Moir, 2001). In addition to the environmental aspect, CSR looks into economic, ethical and legal aspects (Schwartz and Carroll, 2003).

Although for decades there have been multiple CSR models that could be applied to investigate this matter, this topic has not been as relevant as it is now since environmental issues have become increasingly aggravated (Agan *et al.*, 2016). Thus, in this research, we have chosen to use CSR Triple Bottom Line model by John Elkington (1994) which implies and connects the environmental, economic and social strategic aspects of a company. Although this model reviews numerous strategic issues that companies should implement in their strategy, the primary focus of this research is on the examination of environmental strategy in companies' long-term strategies and how other dimensions of CSR models are involved in this context. Therefore, the main aim of this research is to evaluate the implications of CSR aspects to oil and gas companies' strategies to maintain their sustainability. In this regard, the two key research questions are: (i) How do the environmental situation make an impact on energy companies' sustainability and future strategy? And (ii) What are the company's strategic solutions to reduce pollution and other environmental

problems caused by their activities? To answer these questions, we analysed the companies' annual sustainability reports by applying CSR Triple Bottom Line model. To give an in-depth evaluation and clear precedence of chosen topic, this research paper is organised as follows: firstly, a brief literature review on CSR, the key dimensions and the chosen model is presented. Secondly, the process of sampling and a brief overview of the selected energy companies is outlined. Thirdly, the environmental strategy of the companies using a Triple Bottom Line Model is carefully investigated. Finally, a critical comparison of the result for the selected companies is presented to evaluate their strategies and tactics towards the environmental issues that they are causing in the world.

Literature Review

A theoretical foundation of this research is based on a notion of CSR theory. This theory enables us to explore the impact of energy companies on the economy, society, and environment (Aragón-Correa and Sharma, 2003). This theory suggests that all businesses are liable for different aspects of business and corporate relationship, e.g. employees, suppliers, customers, environment, community ethics and human rights (Dabic *et al.*, 2016; Moir, 2001). Wood (1991, p. 695) posits that “the basic idea of Corporate Social Responsibility is that business and society are interwoven rather than distinct entities”. CSR studies have evolved significantly in the past few decades and companies are expected to obey to the practices of CSR (Fontana, 2017; Garriga and Melé, 2004). This paper reviews main the theoretical aspects of CSR and examines the Triple Bottom Line model by John Elkington (1994) in order to qualitatively analyse the performance of chosen energy companies in the aspect of sustainability.

Corporate Social Responsibility

Several scholars (e.g., Lee, 2008; Ozdora-Aksak and Atakan-Duman, 2016; Pinkston and Carroll, 1994; Snider *et al.* 2003) have tried to define CSR in order to establish a clear understanding. Among these, Carroll (1991) is one of the most considerably cited authors who has provided the most comprehensive overview and evolving definition of CSR (Crouther and Aras, 2008). Carroll (1991) identifies four types of social responsibilities which constitute total CSR: economic, legal, ethical and philanthropic. He has attempted to depict these four components of CSR as a pyramid, which suggests any CSR firm should “strive to make a profit, obey the law, be ethical, and be a good corporate citizen” (p. 42). Although Carroll introduced the first CSR pyramid model as well as the previous Three-Dimensional Conceptual Model (see Carroll 1979), many scholars including himself have agreed that social responsibility is a way to summarise companies accountability for

their actions (see Carroll 1979). Following that, Carroll and his co-author Schwartz (2003) came up with an alternative approach where CSR is based on three core domains of economic, legal and ethical responsibilities. Later still, the Venn model that turned out to be more accurate than Carroll's pyramid model (see Garriga and Melé, 2004). Crowther and Aras (2008) state that 'because of the uncertainty surrounding the nature of CSR activity it is hard to define; therefore, it is imperative that we take the view that there are three basic principles: sustainability, accountability, and transparency which together comprise all CSR activity. As this research paper is to explore the environmental strategy of energy companies that is implemented to drive their sustainability, our focus remains on sustainability. However, a brief overview of the other two dimensions are also presented below.

Accountability is related to companies' recognition of actions affecting the external environment and the way they take responsibility for their actions (Crowther and Aras, 2008). Bendell (2005, p. 362) states that 'A key part of accountability agenda is to address the accountability of increasingly large, and international, corporations, particularly when they appear responsible for, or complicit in, human rights abuses, stunted social development, and environmental degradation'. Thus, companies and organisations are encouraged to enhance their CSR especially their accountability towards the environment and society (see Blindheim and Langhelle, 2010; Dabic *et al.*, 2016). This means that companies encounter an appropriate measure of externally environmental performance and report their performance towards accountability to their stakeholders (Bebbington *et al.*, 2008; Swift, 2001).

Transparency involves companies being truthful and realistic in their reports of performance (Gray, 1992). It is important that external stakeholders are able to gain sufficient information, as they may not have full access to a company's data (Crowther and Aras, 2008). At the national level, an increasing number of European governments that demand companies are transparent with regards to their financial and non-financial performance. At the European level, as Bande (2012) states, "the commitment has been made to present a legislative proposal on the transparency of the social and environmental information provided by companies in all sectors'. This is not limited to European countries. For example in 2010, the United States started to comply with Frank-Dodd Act signed by President Obama which places major regulations in the financial industry (Bande, 2012). The increase in transparency in organizational reports undoubtedly increases the stakeholders' power towards companies and their CSR performance.

Sustainability is rooted in the Brundtland Report published, by World Commission on Environment and Development (1987, p.16). In this report 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". The fundamental assumption of sustainability is that

resources are limited, and if they all are used in the present, there will be nothing left for future generations. Therefore it is necessary to look for alternatives that could replace the function of currently used resources (McWilliams and Siegel, 2010). Although there are several contexts where sustainability can be implemented, e.g. social, economic (Morelli, 2011), this paper focuses on global environmental issues and how global corporations carry out their long-term strategy in order to drive sustainability. As there is no special emphasis on what environmental sustainability should mean, Morelli (2011) suggests that there should at least be an agreement that the provision of clean air, clean water and productive land are the foundations of a responsible and sustainable socioeconomic system. Crowther and Aras (2008) however, drive readers' attention to companies, working in industries that by their very nature cannot be sustainable in the long term; for example, oil production companies which call themselves sustainable solely as an effort to promote themselves in the eyes of their shareholders as financially and operationally sustainable organisations. It is very unclear what is meant by 'sustainability' in their strategy and annual reports of these corporations which allows them to use sustainability as an advantage to create a disingenuous and disguised image (Crowther and Aras, 2008).

Conceptual framework

Much of the extant research has applied the CSR pyramid model created by Carroll (1996). This model has been considered to be a core of CSR study for many years (Moir, 2001). This model suggests that four types of social responsibilities are implemented in CSR, i.e., economic, legal, ethical and philanthropic. After a closer look, this approach seemed to be too simplistic to be used in this research, as it is unable to provide deep understanding of CSR practices within particular companies (Carroll, 2016). It appears that this pyramid model may not be able to fully capture the overlapping nature of CSR domains as referred to by Carroll (1993) (see Schwartz and Carroll, 2003). As several other scholars acknowledged the limitations of this model, Schwartz and Carroll (2003) propose a model, known as the Venn Framework Diagram that seemed to be more applicable to the purpose of this research. This diagram reviews three main core domains of economic, legal and ethical responsibilities and involves a total of seven CSR categories by overlapping the three key areas, i.e., purely ethical, purely economic, purely legal, ethical/economic, ethical/legal, legal/economic and at the heart of the diagram the overlapping of all three domains: ethical/economic/legal (Schwartz and Carroll, 2003). Although the construction of this model suits this research more appropriately when compared to the previously reviewed model, this model stills fails to explicitly address the environmental responsibility of companies, which is the focus of this research; therefore it was not found suitable enough as the conceptual model of this research.

Finally, as a result of refined literature review, the Triple bottom line model developed by Elkington (1994) was found fitted to the purpose of this research. The model is a compound of two previously reviewed models. It covers all the necessary domains of CSR illustrated in a Venn diagram (see Figure 1).

---Insert Figure 1 about here---

The Triple Bottom Line model allows companies to focus on sustainability by focusing on three main domains: economic, social and environmental sustainability (Ekwueme *et al.*, 2013). Although this model is historically used as an accounting framework (Elkington, 1997; Norman and MacDonald, 2003; Matteson and Metivier, 2017), it is widely used in the extant literature, as it is referred to as one of the most successful CSR models (Norman and MacDonald; 2003). This model aims to evaluate the financial, social and environmental performance of companies over time and proposes that only those companies produce an overview of their Triple bottom line performance would be the fully reliable ones to do business with (Hindle, 2009; Tullberg, 2012). Of the three domains of the model, the focus of this research was on environmental sustainability. The evaluation of the other two aspects of social and economic was limited to the way in which they contribute to the environmental concerns of the companies. The environmental domain evaluates how companies address the impacts of three pressure waves that have made irreparable changes in CSR and corporative models nowadays. Elkington (2004) refers to these three waves as follows. The first wave brought an understanding that the environmental impact and natural resource demands need to be limited; the second wave puts an emphasis on a realisation the new products and technologies are required in businesses to become sustainable. The third wave focuses on a realisation that in order to be sustainable, significant changes have to be made in the governance of corporation and globalisation to increase recognition in society. These three waves are our necessary tools to effectively examine the companies' performances.

Methodology

Sampling

In the selection of companies, an important sampling criterion was that each company should originally be located in different parts of the world in order to address the countries' legal system and local governments' regulations to the companies' procedures. Chosen companies are BP (United Kingdom), Exxon Mobil (United States of America), Gazprom (Russia), Sinopec (China), Saudi Aramco (Saudi Arabia) (Enercom, 2016). These companies are considered to be the biggest

energy companies in the world (Rapier, 2016). In order to compare strategy and progress of strategy implementation, all five energy companies examined are within the oil and gas industry. To fully evaluate energy companies' performance towards environmental concerns and sustainability, it was necessary to gather corporate sustainability reports for each company. These reports were evaluated in the time-scale from the year 2010-2015 in order to trace the changes and progress of each company's implemented strategy and gain understanding of the current situation in company's strategic course. All of these reports are publicly available on the companies' website archives. Sustainability reports, also known as corporate citizenship reports, are a part of the annual reporting procedure that all companies are required to publish which assess the companies' previous year's achievements (Leviticus, 2006). The chosen companies' reports were downloaded and categorised by the name of the company and the year of publication. As each company differs in their core competencies, and the information they provide publicly, a brief summary of each company is provided in Table 1.

---Insert Table 1 about here---

Data collection

As previously mentioned, the Triple Bottom Line model was used as the conceptual framework for this research in order to evaluate each company through reviewing their annual sustainability reports. In doing so, the required secondary data for each company were gathered for a period of six years (2010-2015). In the process of data collection, our main focus was to focus on how companies have adjusted to the three pressure waves related to environmental issues and the way their overall CSR strategies have changed over time. Once the data were collected, all five selected companies were compared to outline the main strategic directions of the companies towards their environmental suitability development.

Results

In this section, the key findings on each company's environmental strategies and performance are presented, which is followed by a critical comparative analysis in the next section.

British Petroleum (BP)

The annual sustainability reports of BP clearly inform the company's stakeholders about the company's impact on environment and society, particularly in the areas/regions in which they are operating (BP plc., 2012). Every year BP spills around 100 thousand litres of oil and produces

approximately 50 million tons of CO₂, causing the current worrying environmental situation (BP plc., 2016). To minimise the negative impact on the environment, BP has taken numerous precautions. In particular, the company's environmental awareness significantly increased after the tragedy in 20th of April 2010 on the Deepwater Horizon oil rig in Macondo in the Gulf of Mexico where several explosions occurred (BP plc., 2011). The company is still working on restoring the environment and helping the local community (BP plc., 2016). Consequently, the company has exchanged knowledge and invested money in preparing for the possibility of similar accidents (BP plc., 2015). In 2014, BP opened first wastewater cleaning plants in order to implement the company's waste water strategy as the water consumption of the company's operations is very high, and BP mostly operates in areas where clean water availability is considered to be stressed (BP plc., 2015). Regarding renewable energy, BP has strongly maintained its position in biofuel production, although this increases deforestation in some parts of Brazil (Cowspiracy, 2014). The company also uses wind energy; by creating 16 wind farms in the United States, it guarantees jobs for the local community (BP plc., 2016). BP has been collaborating with universities through providing funds to researcher ways of reducing emission levels caused by the company's operations. BP has been also cooperating with the world's governments to develop joint Greenhouse gas (GHG) emission restrictions (BP plc., 2015).

Exxon Mobil

Exxon Mobil Corporation utilises the Triple Bottom Line approach to evaluate their annual economic, environmental and social performance and sustainability (Exxon Mobil Corporation, 2011). The company draws attention to the positive relationship between the growth of the energy industry and the life quality of world citizens through participating in different projects which improve health and living conditions for local people in operating areas (Exxon Mobil Corporation, 2013). Although Exxon Mobil is one of the biggest and most influential energy companies in the world, it does not look for sustainable energy sources, e.g. renewable energy, not least because 2014 was the first year they acknowledged climate change and included this aspect in their corporate citizenship report (Exxon Mobil Corporation, 2015). To comply with governmental regulations, Exxon Mobil, in the same manner as the other companies, has managed to decrease their emission and flaring levels as well as oil spills (Exxon Mobil Corporation, 2016). Their approach to sustain environment mainly consists of creating wildlife conservation areas and protecting biodiversity in areas in which they are operating (Exxon Mobil Corporation, 2012). After reviewing the company's annual citizenship reports, it seems that Exxon Mobil turns its main attention to helping the external environment and society by contributing to social projects and

protecting certain areas of nature, but it may not intend to make the necessary changes internally, e.g., implementing renewable energy in its production process to minimise their impact on nature.

Gazprom

Regarding the environmental concerns, Gazprom intensively works on reducing air emission and water consumption as well as improving drinking water quality (Public Joint Stock Company Gazprom, 2013). Since the publication of the company's first sustainability report in 2008, Gazprom has acknowledged global climate change and has driven their operations based on environmental, social and economic concerns and corporate sustainability (Public Joint Stock Company Gazprom, 2012). To work responsibly towards the environment, Gazprom has developed the Environmental Management System (EMS), which includes the long-term strategic objectives of the company to protect areas established by the corporation's Environmental Policy (Public Joint Stock Company Gazprom, 2013).

In 2013, the energy committee meeting concluded that renewable energy and natural gas could supplement each other and even compete with each other in European countries, not least because of the availability of the EU governments' grants as well as consumers' preferences (Exxon Mobil Corporation, 2015). After this statement, Gazprom assessed various production processes with collaboration to renewable energy and concluded that biogas could be one of the prospective sources of renewable energy for the company's operations (Public Joint Stock Company Gazprom, 2015). Furthermore, in the last few years, Gazprom has significantly invested in renewable energy projects, e.g., wind turbines and solar panels, which has improved the company's overall energy efficiency (Public Joint Stock Company Gazprom, 2013). Additionally, the company claims to be involved with biodiversity maintenance and environmental monitoring activities in areas of its use (Public Joint Stock Company Gazprom, 2016).

Sinopec

Since 2010, Sinopec's strategic focus has shifted from people and society to environmental concerns and sustainable development (Sinopec Corp., 2011; 2016). Sinopec has successfully developed and implemented its environmental strategy based on the Six-Dimension CSR model, which has led Sinopec to become an award winning company in relation to social concerns and contribution to society and environment (see Sinopec Corp., 2014). In this regard, the company has employed environmentally friendly technologies in its operation processes to minimise three types of waste; gas waste, water waste, and residue waste. Currently, Sinopec reuses 100 percent of oily waste water (Sinopec Corp., 2012). Indeed, Sinopec has developed its operation processes in such a way that minimises all major types of waste, so it reduces the negative impact on nature.

In 2013, the corporate strategy of Sinopec was renewed to enable the company to fulfil its primary objective, i.e., 'to become a global leader in clean energies' alongside a reputation boost by implementing high technology, low resource intensity and less pollution strategies (Sinopec Corp., 2014). Sinopec is highly competitive in renewable energy growth and diversifying the business. The company produces biofuel, bio-diesel and bio jet-fuel made of biomass (Sinopec Corp., 2015). Furthermore, since 1996, Sinopec has started to generate geothermal energy particularly in countries with the highest pollution levels, e.g., China (Shufang, 2015). Now the company can provide 29.85 million square meters with heated power replacing consumption of 670 thousand tons of coal therefore cutting 1.7 million tons of CO₂ emission every year (Sinopec Corp., 2016).

Saudi Aramco

Saudi Aramco is the oil company with the largest crude oil reserves in the world (Saudi Aramco, 2011). The company's CSR activities are driven by four pillars that support future aims and citizenship activities. These pillars are based on the principals of Elkington's Triple Bottom Line model (Saudi Aramco, 2013) to enable the company to decrease the environmental impact caused by its operations (Saudi Aramco, 2014). Every year, the company enhances its energy efficiency by collaborating with small and large-scale projects around the world. To do so, Saudi Aramco invests large amounts of assets in local and global research projects in order to reduce production waste by implementing innovative technologies in productions processes (Saudi Aramco, 2016). Although Saudi Aramco increases its production of core products every year, its levels of waste and emission have significantly decreased in the past five years (Saudi Aramco, 2016). Regarding environmental issues, the company's strategy is to diversify the mix of produced energy (Saudi Aramco, 2015). In addition to the core competencies, i.e., oil and gas fracturing and production, the company firmly aims to enter the renewable energy business. It has developed several solar power projects, and it currently continues the same approach through the development and deployment of wind turbine plants (Saudi Aramco, 2015). It is worth adding that in areas where the company's grounds and plants are arid, so fresh water is a significant problem, the company has implemented special water cleaning technologies for reusing wastewater (Saudi Aramco 2013). Additionally, Saudi Aramco has found a way to use production by-products to generate energy. For example, in the cogenerating process, the heat developed by oil and gas manufacturing processes is used to generate electricity for further industrial use (Saudi Aramco, 2016).

Discussion

Ever since Kyoto Protocol (United Nations, 2014) came into force, the companies are required to seriously reduce their pollution levels, i.e., air pollution. Although some companies, e.g., Exxon Mobil and Gazprom have been procrastinating about making the required changes in their operations to minimise their pollution, all five energy companies studied in this research have acknowledged their negative influence on nature. A study conducted by Penha (2009) shows that until a decade ago, the energy companies were only planning to introduce renewable energy in their operation processes for sustainability reasons, whereas now, they carefully evaluate whether and how the environmental situation in the world would impact on their future strategies towards sustainable development.

To mitigate the required CSR standards set by various protocols and agreed by governments (see the previous section), companies have been required to introduce new production technologies in their operation processes to meet these standards. These technologies may work either internally, combined with their existing production and extraction lines, or externally by implementing new renewable energy solutions. Companies utilise these technologies to generate energy for their operations processes, or to diversify their energy mix for consumer consumption and achieve energy efficiency (Albino *et al.*, 2009). As a result, since 2010, all the studied companies have significantly reduced their emission and waste levels. They have also conducted various precaution activities for potential oil spills. Having carefully evaluated the environmental strategies of the companies, it was evident that they have understood that for sustainable development purposes, it is not possible to stick to the fossil energy consumerism strategy that the world has been driven by in the last 200 years; not least because the oil and gas reserves are not infinite. Thus, the oil and gas companies are looking for new energy sources to introduce to their energy mix.

The second question of this research was ‘what are the companies’ strategic solutions to reduce pollution and other environmental problems caused by their activities?’ As mentioned in the result section, Exxon Mobil stands out with their chosen CSR strategy. This company is one of the biggest oil and gas extractors/producers in the world (Pines, 2016), and it is responsible for 3.22 percent of all emissions generated in the world since 1750 (MacKenzie, 2009). However, their strategy is limited to production related environmental standards and external biodiversity protection in wildlife conservation areas. The wildlife protection activities seem to be very public, which calls into question whether they are solely carried out for reputation boosting purposes. Although this company reaches their emission and waste reduction targets, this approach may not be sustainable in the long-term. The company’s annual citizenship report (see Exxon Mobil Corporation, 2011), highlights the company’s influence on society, the economy, and the environment to demonstrate their sustainability strategy on a Triple Bottom Line model. While

other oil and gas companies were working on new technologies and renewable energy, Exxon Mobil was the only one focusing on promoting their contribution to the environment in their areas of operations, causing a conflict between their intentions and their published statements (see Exxon Mobil Corporation, 2012).

Another aspect of this research was to assess the extent to which the strategy of energy companies, with respect to the location of their headquarters, is responsive to the legal restrictions and each government's encouragement policies. After a careful evaluation of the five studied companies, it is evident that all are committed to comply with Kyoto Protocol regulations, and have admitted that the reason that they implemented new sustainable approaches into their procedures was because of the government regulations, incentives and renewable targets (Penha, 2009). For instance, regional policies, such as Europe's Environment Policy, have made a generous contribution to energy companies in order to increase renewable energy through providing substantial funding for new technology projects in the energy sector (European Commission, 2017). This is another reason why Europe-based companies, such as British Petrol, would choose to invest in renewable energy technologies. The US government tried to implement the same approach for US based companies which would receive tax credits in return for renewable energy implementation in production processes, but it was not fully successful due to the conflict related to federal arrangements (see Aragón-Correa and Sharma, 2003).

In sum, two significant patterns were recognised through the evaluation process of the selected companies. Firstly, the majority of the companies have implemented Elkington's Triple Bottom Line Sustainability model as a core for their strategic activities towards economics, society, and the environment. This confirms that the chosen evaluation model has been appropriate and relevant for the purpose of this research. From the companies' perspectives, it also shows how concerned they are about CSR, although the main reason of implementing sustainable strategy is to reach the global emission level targets as part of Kyoto protocol regulations. Secondly, the companies' objectives have changed in six-year period since 2010. If in 2010 companies were focused on the impact they have on society, then in five-years' time, this focus may have shifted to all environmental aspects, including economics and the environment. One significant example is Sinopec Corporation, whose objectives in 2010 consisted of customer satisfaction with slogan 'People First' in comparison to 2015, when Sinopec's objectives were 'to become a global leader in clean energies' (see Sinopec Corp., 2010; 2015). This addresses the issue of trending and accountability for actions of implemented strategy.

Conclusion, limitations and future research

This research evaluates the performance of some of the world's biggest oil and gas companies in relation to sustainable development. These companies are among the most significant pollution and waste producers in the world, so their impacts on the environment affects the entire ecosystem. Successful CSR strategies for these companies are crucial in order to sustain our planet's environment in the long term. Energy companies are constantly looking for new ways to reduce air emission and waste levels. One of the most effective ways to do that is by implementing new technologies in production and extraction processes, and additionally by diversifying the energy mix with innovative renewable energy technologies. As discussed earlier, most of the evaluated companies have shown some positive results in emission and waste reduction levels by using these innovative technologies. However, some of them have acknowledged only recently that their operations are one of the main reasons of global climate change. These particular companies are procrastinating about sustainable strategy implementation. Furthermore, they are slowing down the process of innovation. This leads companies to adopt an environmental strategy that is unable to sustain the company's long-term overall strategy and does not benefit society, the economy, and the environment and is joined to drive sustainability through Corporate Social Responsibility.

In spite of the significant contributions of this research, it has a number of limitations. First, the reports evaluated in this research were all written and published by the companies' associates, which means that all information provided is written in a positive way towards the companies and their performances. This aspect limits the credibility of the information, although the companies' reports were the only sources available publicly for company reviewing purposes. In all cases, the companies had to comply with regulations, so they tried to outline the reports in a way that they maintained their transparency towards CSR principles. Thus, this may not necessarily guarantee the credibility of the information provided in the reports. Second, as mentioned earlier, the Triple Bottom Line method underlines the evaluation of three strategic aspects, i.e., social, economic, and environmental. However in the context of this research it was not possible to evaluate all three aspects of the model, so the focus was on environmental only. Therefore, it is suggested to further expand this research by evaluating each company's economic and social aspects for the sustainable development in resources that the companies used. This topic for future studies is significant, and it is worth a deep and careful exploration.

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