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Environmental policy and CSR: How climate change is interpreted in CSR reports of Greek companies

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ABSTRACT

The environmental policy and Corporate Social Responsibility are two notions of high importance for enterprises and nations. Numerous pages have been written about the environmental policy of companies in their CSR reports. Whether it concerns to raise environmental awareness among their employees or local communities or to give in detail their environmental footprint at the end of the story it is about giving proofs of their environmental policy. Climate change is among the topics of CSR reports and is under examination in this paper. A case study analysis will be applied in order to present how climate change is interpreted in the CSR reports of Greek companies from the petroleum refining industry.

Jel Codes: M10, M12, M14

1. INTRODUCTION

Climate change is a de facto reality and although each of us contributes to this reality it is common to put the blame on enterprises especially those multinationals of heavy industry. Enterprises nowadays could claim that have proofs that are or becoming green and do their best to mitigate their effects on the environment as well as support their local community economically, socially and environmentally. This attitude by enterprises is welcomed as Corporate Social Responsibility. The understanding of the role of enterprises besides seeking profit (Friedman, 1970) and cover the three dimension of CSR is obvious to anyone from local authorities, consumers, employees or investors. One of the first academics that supported CSR is Carroll (1991) who recognized the economic, legal, ethical and philanthropic components of enterprises. These components are what communities demand from corporations. Philanthropy is considered by Carroll as a prerequisite and not obligatory from

what communities and the public expects from enterprises and makes a metaphor by characterizing philanthropy as the icing on the cake.

The structure of the research contains: a brief introduction about Corporate Social Responsibility and how it is connected with environmental management; the connection between climate change and CSR; the analysis and conclusions. The reason why these companies were selected is that they are the only large companies in the petroleum refining industry in Greece.

The added value of this article is that enriches the existed bibliography about climate change and CSR and provides information about an industrial sector that although activates in a period of economic crisis it provides case studies and evidence that CSR could be implemented during difficult times.

2. CLIMATE CHANGE AND CSR

Climate change is unwelcome news (Socolow, 2006)

Meeting the challenge climate poses has the potential of addressing many other challenges as well: water and food shortages, threats to species extinction, displacement of people by rising seas and the spread of tropical diseases. Although the challenge is complex, it must be addressed now. There is no time for inaction because climate change is already happening with severe changes happening already in our planet. More specific there are three global feedback mechanisms which push the earth into a period of rapid climate change even before the two degree C limit is reached; meltwater altering ocean circulation, melting permafrost releasing carbon dioxide and methane and ice disappearing worldwide (Carey, 2012). “Two degrees” is shorthand for a precise objective: the goal is to limit the rise of the average surface temperature of the earth to two degrees Celsius, relative to a time before the Industrial Revolution.

Activities oriented to environmental protection or towards what society needs are covered by the legitimacy theory. Legitimacy theory means that when a company performs social responsibility activities (in many cases on a voluntary basis), it actually seek for the legitimacy of their existence in the eyes of the society (Hossain, Chowdhury, 2010). In that terms CSR is a very popular topic for companies and CSR reports are their vehicle to their legitimacy existence. Various issues arise when discussing about CSR activities and one of these topics will be the environment in this research. Environmental issues are on top of the

agenda for governments, the public, companies, media etc. How each of them approach and analyze the problems that arise from the contaminated human activities is different.

Companies use the Corporate Environmental Management when handling environmental issues. The green model of Corporate Environmental Management is based on three stages. The first is pollution prevention which means minimizing or eliminating waste before it is created. Second is product stewardship which is related with the full life cycle of a product from the design to its use and finally its disposal. Third is clean technology which leads to development of new technologies and innovation that support sustainability (Lawrence et. al., 2005).

This green model of CSR means in other words that the industries should change and must rethink the way they operate. Although heavy industries are difficult to respond to climate change at least they could response through adaptation. This is to anticipate harm to natural and human systems and plan an adaptive response to lessen the vulnerability of people, their property and the biosphere to coming changes. Then try mitigation response which is to lesser the rate of emissions added to the atmosphere (Wright, 2005). The companies of heavy industry need to address environmental problems with managers well educated about CSR issues and strongly motivated to the principles of Environmental Management.

Business education traditionally addresses corporate social responsibility from a variety of perspectives like (1) financial benefit to the firm and shareholders by attracting socially responsible investors, minimizing regulation, improving brand image, and improving returns through an image of corporate social responsibility; (2) avoidance of “sin stocks” (deontological motives) by concerned investors; (3) activist investors seeking to “reward good behavior and to provide an incentive for firms with lagging social performance to improve”; and (4) consumers and investors who “use their power” for self- expression (Rockwood, 2008). Climate change case according to Rockwood could be used effectively to discuss corporate social responsibility from each of these perspectives. It is also the author’s view that business education has a critical role to play in educating tomorrow’s business leaders to recognize their ethical obligation to address climate change simply because it is a task that has to be performed.

Educating future managers in order to implement green CSR activities is a topic that should be discussed in the academic literature of CSR and environment.

There are certain steps for Environmental Management and involve managers committed to sustainability, line managers and workers cooperation and involvement, codes of environmental conduct and cross functional teams which are individuals by different

departments of the company. The key to a successful Environmental Management is partnerships and involvement from the bottom to the top with committed and educated people about environmental issues.

Environmental CSR is reflected through green voluntary activities implemented mainly by the private business sector (not necessarily) in order to adapt and mitigate their harmful impact on society and become true stewards for the society.

An example of mitigation on environmental issues comes from Socolow and Pacala who tried to educate firms on how to solve environmental pollution created by industries. Figure 2 and Figure 3 describes the Carbon Mitigation Initiative. The Carbon Mitigation Initiative is a joint project of Princeton University, BP, and Ford Motor Company to find solutions to the greenhouse gas problem. Socolow and Pacala created the concept of stabilization wedges: 25-billion-ton “wedges” that need to be cut out of predicted future carbon emissions in the next 50 years to avoid a doubling of atmospheric carbon dioxide over pre-industrial levels. The “stabilization wedges” concept is a simple tool for conveying the emissions cuts that can be made to avoid dramatic climate change. Two scenarios are applied in this scheme. The first scenario leads to global warming if emissions double for the next 50 years and the second scenario could keep emissions flat for the next 50 years and then work to reduce emissions. This emissions saving is called stabilization triangle. CMI set out to quantify the impact that could be made by a portfolio of existing technologies deployed on a massive scale. To make the problem more tractable, we divided the stabilization triangle into eight “wedges.” A wedge represents a carbon-cutting strategy that has the potential to grow from zero today to avoiding 1 billion tons of carbon emissions per year by 2060. The wedges can represent ways of either making energy with no or reduced carbon emissions (like nuclear or wind-produced electricity), or storing carbon dioxide to prevent it from building up as rapidly in the atmosphere (either through underground storage or biostorage). Keeping emissions flat will require the world’s societies to “fill in” the eight wedges of the stabilization triangle.

This scheme could be adapted by enterprises as well as public authorities in order to educate their workforce and become motivated on environmental issues.

Figure 2. Stabilization triangle and Stabilization triangle

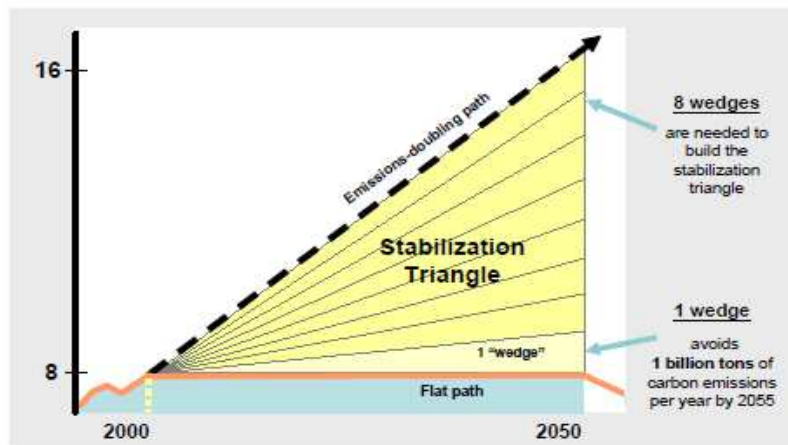
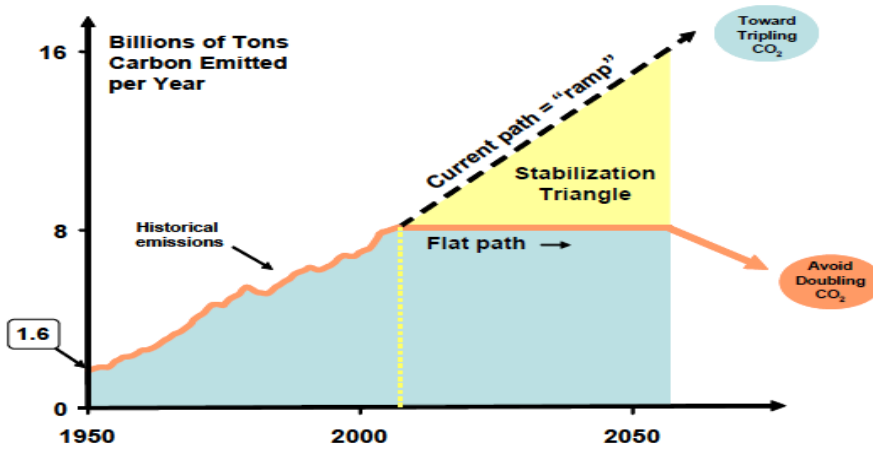




Figure 3. Stabilization wedges in order to cut Carbon by Socolow and Pacala (2006)

Stabilization Wedges – 15 Ways to Cut Carbon

 = Electricity Production,  = Heating and Direct Fuel Use,  = Transportation,  = Biostorage

Strategy	Sector	Description	1 wedge could come from...	Cost	Challenges
1. Efficiency – Transport		Increase automobile fuel efficiency (2 billion cars projected in 2050)	... doubling the efficiency of all world's cars from 30 to 60 mpg	\$	Car size & power
2. Conservation – Transport		Reduce miles traveled by passenger and/or freight vehicles	... cutting miles traveled by all passenger vehicles in half	\$	Increased public transport, urban design
3. Efficiency – Buildings		Increase insulation, furnace and lighting efficiency	... using best available technology in all new and existing buildings	\$	House size, consumer demand for appliances
4. Efficiency – Electricity		Increase efficiency of power generation	... raising plant efficiency from 40% to 60%	\$	Increased plant costs
5. CCS Electricity		90% of CO ₂ from fossil fuel power plants captured, then stored underground (800 large coal plants or 1600 natural gas plants)	... injecting a volume of CO ₂ every year equal to the volume of oil extracted	\$\$	Possibility of CO ₂ leakage
6. CCS Hydrogen		Hydrogen fuel from fossil sources with CCS displaces hydrocarbon fuels	... producing hydrogen at 10 times the current rate	\$\$\$	New infrastructure needed, hydrogen safety issues
7. CCS Synfuels		Capture and store CO ₂ emitted during synfuels production from coal	... using CCS at 180 large synfuels plants	\$\$	Emissions still only break even with gasoline
8. Fuel Switching – Electricity		Replacing coal-burning electric plants with natural gas plants (1400 1 GW coal plants)	... using an amount of natural gas equal to that used for all purposes today	\$	Natural gas availability
9. Nuclear Electricity		Displace coal-burning electric plants with nuclear plants (Add double current capacity)	... ~3 times the effort France put into expanding nuclear power in the 1980's, sustained for 50 years	\$\$	Weapons proliferation, nuclear waste, local opposition
10. Wind Electricity		Wind displaces coal-based electricity (10 x current capacity)	... using area equal to ~3% of U.S. land area for wind farms	\$\$	Not In My Back Yard (NIMBY)
11. Solar Electricity		Solar PV displaces coal-based electricity (100 x current capacity)	.. using the equivalent of a 100 x 200 km PV array	\$\$\$	PV cell materials
12. Wind Hydrogen		Produce hydrogen with wind electricity	... powering half the world's cars predicted for 2050 with hydrogen	\$\$\$	NIMBY, Hydrogen infrastructure, safety
13. Biofuels		Biomass fuels from plantations replace petroleum fuels	... scaling up world ethanol production by a factor of 12	\$\$	Biodiversity, competing land use
14. Forest Storage		Carbon stored in new forests	... halting deforestation in 50 years	\$	Biodiversity, competing land use
15. Soil Storage		Farming techniques increase carbon retention or storage in soils	... practicing carbon management on all the world's agricultural soils	\$	Reversed if land is deep-plowed later

For more information, visit our website at <http://cmi.princeton.edu/wedges>.

3. METHODOLOGY

The methodology chosen to analyze how climate change is translated by the three studied companies is a combination of studying the literature review and content analysis of the CSR reports and the GRI framework.

GRI Guidelines is a framework used widely by companies in order to disclosure in a sustainable way their social economic and environmental information about the company's activities. According to the KPMG Survey of Corporate Social Responsibility Reporting 2013, there is a slightest increase in the percentages of CSR reporting in Greece from 33% to 43% (KPMG, 2013).

The appliance of content analysis is used in order to examine beliefs, organizations, attitudes, and human relations in sciences (Weber, 1990). Berelson (1952) defined content analysis as “a research technique for the objective, systematic, and quantitative description of manifest content of communications”. Content analysis is chosen because it offers a systematic and reliable way to code and categorize the existed data by compressing quantitative and qualitative data into categories based on explicit rules of coding. It has the attractive features of being unobtrusive, and being useful in dealing with large volumes of data (Stemler, 2001).

Another nonfinancial reporting assessment has been developed as a benchmark tool for examining reports on the basis of their inclusiveness and other factors by the Centre for Environmental Policy and Strategic Environmental Management at the University of the Aegean. The assessment methodology relies on the GRI 2002 reporting framework.

The vision and strategy of the reporting organization on sustainable development, including a relevant statement by the CEO or equivalent senior manager, a profile of the organization giving information about their activities, the management systems and policies regarding sustainable development and the performance of the organization during the report period about the triple bottom line with quantitative and qualitative indicators are the clusters of criteria and indicators of GRI guidelines. In figure 1 the scorecard gives an example of how the scoring system methodology is applied (Skouloudis, Evangelinos, 2009).

Exhibit 2. Applying the Scoring System Methodology

Score	Scoring Levels	Example: Direct CO ₂ Emissions
0	No Mention	No relevant information provided in the report.
1	Generic Statements	"We monitor our CO ₂ emissions."
2	More Detailed Information	"In 2006, the company's total emissions of CO ₂ were equivalent to 800,000 tonnes."
3	Extensive Information	"Our head offices and plants in Greece produced 500,000 tonnes of CO ₂ , while the rest of our abroad operations resulted in 300,000 tonnes of CO ₂ ."
4	Full and Systematic Coverage	"In 2006, the company's total emissions of CO ₂ were equivalent to 800,000 tonnes. Our head offices and plants in Greece produced 500,000 tonnes of CO ₂ , while the rest of our abroad operations resulted in 300,000 tonnes of CO ₂ . This is a 5% reduction from last year's emissions. It is our stated commitment to reduce our CO ₂ emissions by a targeted 10% by the end of 2008, compared to our 2004 level."

Figure 1. Example of the scoring system (Skouloudis, Evangelinos, 2009)

Many academic papers have studied how companies publish their CSR reports in order to find out how companies deal with specific topics (environment, human resources, society etc). The methods used to identify the attitude of companies toward a specific topic or the whole CSR concept are various and based either on numeric data (rarely) or qualitative data.

Băleanu in their paper examines the way one hundred Romanian companies publish CSR by searching the companies' websites in order to find Another paper that describes how one hundred Romanian companies engage to the concept of CSR after searching the information found in the companies' websites .Their findings reveal that the percentage of Romanian companies that practice CSR is relatively low meaning that 49 from the companies have at least one section on their corporate website dedicated to corporate social responsibility. As far as the existence of separate CSR reports only 10% of the Romania's companies publish at least one CSR reports the last three years (Băleanu et. al, 2011).

Fafaliou et. al. examines the way Greek-owned short sea shipping companies understand the meaning of CSR. The results of their research indicate the poor dissemination of CSR concept within the shipping sector as a whole. More specific the reasons reported for not being involved in CSR activities according to the shipping companies were lack of public support or encouragement, lack of information for the implementation or no self-consciousness of CSR impact to business activity. CSR is limited to a small number of short sea shipping providers, which are either subsidiaries of international conglomerates or are controlled by entrepreneurs that are personally aware of and committed to CSR (Fafaliou et. al. 2006).

Dagilienė and Gokienė(2011) used the analysis of scientific literature and its logical generalization, the examination of separate cases of social responsibility reports of companies listed in Global Compact Network Lithuania. The results showed Lithuanian social reports are mostly oriented to presenting goals, management systems mostly using descriptive analysis.

4. ANALYSIS

According to the scorecard of Skouloudis and Evangelinos (2009) the following table presents the environmental indicators that arise from an in depth analysis in CSR reports of the three studied companies. The following categories represent the most common topics about the environment in the CSR reports. The score that gets each category is equal with the amount of information found in these reports which means detailed numeric data and information about the related topics.

Table 1. Scoring on Environmental Indicators of CSR reports

Environmental Indicators	ELPE	MOTOROIL
Environmental policy	4	4
Environmental Management Systems	4	4
Green Investments	4	4
Climate change (CO ₂ emissions)	4	4
Training on environmental issues	4	4
Natural resources	4	4
Biodiversity	3	0
Compliance with Regulations	3	3
Renewable Energy Sources and Biofuels	4	2
TOTAL	30	25

Table 2. Example of numeric data for the environmental indicators of the studied companies

	ELPE	MOTOROIL
Green Investments	€ 4,257 εκ	€ 676,6 εκ
Climate change (CO ₂ emissions)	276.216tn	1.965 ml tn
Training hours on environmental issues	1378	12500

Each company sets its goals for the environmental management and this is reflected though the introductory note at the beginning of the chapter on Environmental management.

The following messages contain in brief the principle of the company on Corporate Environmental Responsibility:

ELPE

...where our main objective is to continuously improve environmental performance and environmental protection as a key component of sustainable development.

MOTOROIL

Protection of the environment and energy-saving are among our primary concerns.

The messages are clear and stress the attitude of corporation towards the environment as their main concern or focus or objective. Yet the only company that links their environmental performance with environmental protection as a step towards sustainable development is ELPE while MOTOROIL have a minimal message about their environmental management.

Environmental management systems are adapted by both companies. ELPE uses the certified Management Systems for Quality ISO 9001:2008, the environment ISO 14001:2004, health and Safety OHSAS 18001:2007 and ISO 17025 which concerns refineries laboratories. MOTOROIL uses the certified Management Systems for Quality (ISO 9001:2008), the environment (ISO 14001:2004, EMAS III ER 1221/2009) and health and Safety (OHSAS 18001:2007). Environmental management systems are adopted by enterprises motivated by the bottom line quest to increase productivity and as well as by government regulation. EMS appears according to a survey of manufacturing plants by to be an effective tool for managing environmental costs and risks inside and outside the factory in ways that adds to –rather than detracts from- the bottom line (Florida and Davison 2001).

The environmental indicators of investments show what companies spent on green activities in Euros. The training show how many hours were spent for seminars on environmental issues to personnel, public and other groups.

Natural resources are environmental indicators covering usually in CSR reports several aspects of the company's environmental management. Waste management, recycling, water management, air emissions, noise management are several topics that cover the chapter of natural resources. Each of these topics is analyzed either in detail with numeric data or with detailed text information about specific green activities. According to GRI Guidelines both companies cover the EN indicators about natural resources with numeric data.

MOTOROIL covers the different issues of natural resources as separate chapters and provides numeric or graphic data along with detailed text information. ELPE before analyzing the chapter of natural resources provides a brief message *... to minimize the impact of our activities on the natural environment, including reusing water, waste recovery, protecting*

biodiversity and reducing gas emissions and then provides numeric and graphic data along with text information.

Biodiversity is covered as a separate chapter only for ELPE while for MOTOROIL there are there are no protected or restored habitats as EN13 states in GRI Guidelines.

The compliance with regulation is mentioned in the reports of MOTOROIL and ELPE. Both companies make reference about REACH regulationion.

Both companies have measured the total training hours spent on environmental issues. It is important for companies to have educated personnel from the bottom to the top of the hierarchy so that environmental issues could be addressed properly.

Another indicator is green investments and again both companies spent money on activities that concern technology, redevelopment of their plants or improve their operation with energy efficiency programs. Finally a section about biofuels and renewable energy resources is dedicated to both CSR reports. Initiatives to produce energy-efficient or renewable energy based products and services as indicator EN6 in GRI Guidelines is updated in both industries.

Each company uses graphic and data along with per year information about their amount of their pollutions and the techniques they use in order to mitigate their impact. There is always a need for improving their CSR reports with consist data in a homogeneous way. The issue of comparability on environmental performance is mentioned in the article of Perrini (2005). The lack of common references causes the multiplication of reporting methods and units of measurement as each company presents its performance indicators from its own personal view of that the impact on the environment means. As a consequence it is difficult for stakeholders to express an objective opinion on a company's commitment towards respecting and safeguarding the environment (Perrini, 2005).

CONCLUSIONS

Addressing environmental issues is a challenge and needs immediate action from each of us but also from corporations. The reason that makes it so urgent is that according to Maring Manning an atmospheric scientist at Victoria University of Wellington in New Zealand and a key player in the 2007 round of the Intergovernmental Panel on Climate Change reports: The rate of change this century will be such that we can't wait for the science (Carey, 2012). In these sense corporations need to be consistent and organized when implementing activities oriented to reducing their environmental impact on earth. Humanity faces a choice between two futures: doing nothing to curb emissions (which pose huge climate risks) and bringing them under control (which has costs but also benefits) (Socolow, Pacala, 2006).

The approach of reducing the pollution described as regulation by publicity or regulation by embarrassment. The US government encourages polluting less by publishing information about the amount of pollutants individual companies emit each year. In many cases, companies voluntarily reduce their emissions to avoid public embarrassment (Lawrence et. al., 2005).

The bottom line from the brief analysis on these two CSR reports is the fact that although they develop a satisfactory environmental CSR strategy yet in the field of CSR there are more. One of these is the creation of partnerships with the state, the public, universities and other bodies that could contribute to reducing the environmental impact of industries like the refinery sector. One thing was not mentioned purposely and this is the fact that those companies have received many times bad criticism when developed green activities characterizing greenwash but the truth is that the authors intention was to give a positive feedback in order to promote green CSR.

McElhaney (2009) argues that when CSR is integrated in to the business strategy it could create value like the case of HP and Dell. HP is committed to recycling but Dell comes along with a printer and promises to plant a number of trees for each unit purchased; and Dell becomes known as an environmentally friendly company to HPs loss.

From the above brief analysis of how Greek companies report their Green CSR it is important to acknowledge their effort. For environmental issues that are complex, that require expensive remedies, or that require change across multiple firms—such as global warming—political pressure is likely to remain a critical influence on CSR activities(Lyon and Maxwell, 2008).

Further study should be given to the issues of creation of partnerships and the issue of educating young managers either in universities or inside the company on national level. Corporations in Greece could develop effective CSR strategies if they have the help of universities but also if they have educated managers on the field of CSR. A green corporation is one that operates in a consistent and responsible way with the principles of sustainable development.

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ⁱ REACH is the Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals. It entered into force on 1st June 2007. It streamlines and improves the former legislative framework on chemicals of the European Union (EU).