

Halmstad University
School of Business and Engineering
Technical Project and Business Management

STAKEHOLDERS' INFLUENCE ON THE ENVIRONMENTAL STRATEGY OF THE FIRM

A Study of the Swedish Energy Intensive Industry

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Authors:

Andreas Lindblom, 870217

Johan Ohlsson, 880530

Supervisor: Henrik Florén

Examiner: Bernd Hofmaier

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ABSTRACT

The authors of this paper will identify the main stakeholders in the energy intensive industry in Sweden. Moreover, this paper will examine in what way these stakeholders affect the environmental strategy of the firm. A case study was performed at Pilkington, a float glass manufacturer in Halmstad.

The findings show that government, top management, shareholders and employees represent the main stakeholders influencing the firm's environmental strategy. The authors of this paper did not find any data supporting NGO's (Non-Governmental Organizations) as a stakeholder influencing the firm. However, the findings indicate that the firm's perceptions of stakeholders affect the environmental strategy of the firm. Moreover, this thesis empirically investigates how stakeholders can influence to a more or less proactive or reactive environmental strategy.

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1. INTRODUCTION

1.1 Background

The recent years have been characterized by the industrial globalization, which is having significant effects on the natural environment (Gonzales, Sarkis & Adenso-Diaz, 2008). It is an increasingly demand that businesses work towards minimizing negative impacts on the natural environment (Klassen & Whybark, 1999). As the concern for the environment is rising companies are incorporating more environmental friendly practices in to their strategy (Gonzales et al. 2008). These environmental issues in turn, affect companies in different ways and no company can afford to ignore them.

“Environmental missteps can create public relations nightmares, destroy markets and careers, and knock billions of the value of a company. Companies that do not add environmental thinking to their strategy arsenal risk missing upside opportunities in markets that are increasingly shaped by environmental factors” (Esty & Winston, 2009, p. 10).

To prevent this from happening, firms need to develop environmental strategies: a set of guidelines created to enable firms to achieve economic results while reducing their actions’ impact on the environment (Azzone, Bianchi, Mauri & Noci, 1997; Sharma & Sharma, 2011). These strategies need to be developed in a way so the firm is able to respond to internal and external stakeholders’ pressures (Azzone et al., 1997).

An article translated from Industrinyheter (2011) urge the increasing demand from stakeholders:

“Environmental awareness is increasing among people and issues such as ecological thinking, renewable energy sources and recycling are topical and controversial.”

There are some factors acting as more important determinants influencing companies’ to adopt a specific environmental strategy and these factors are not consistent through industries, although similarities can be found it depends on factors such as stakeholders’ interest and involvement (Azzone et al., 1997).

1.2 Problem Discussion

In order to manage stakeholder groups, the relationship between stakeholders and firms' needs to be understood. Freeman is one of the pioneers behind the theory of stakeholders, and today "stakeholder theory" is a widely used concept among researchers (Friedman & Miles, 2006). He developed this theory arguing that stakeholders "*could and should be used to revise the entire view of the corporation*" (Friedman & Miles, 2006, p. 25).

Freeman came up with two definitions describing stakeholders; one wide definition suggesting that stakeholders are "*any group or individual that can affect or is affected by the achievements of the organizations objectives*", and one narrower definition saying that stakeholders are "*groups who are vital to the survival and success of the company*" (Freeman, 2002, p. 41).

Donaldson and Preston (1995) frame stakeholder theory into three distinctions: descriptive, instrumental and normative. The authors of this paper will follow the normative stakeholder theory, which concerns the correct or appropriate behaviour of the firm (Jones, 1995). Moreover, this theory is used to "*interpret the function of the corporation, including the identification of moral or philosophical guidelines for the operation and management of corporations*" (Donaldson & Preston, 1995, p. 71).

SRI International (Standford Research Institute) discussed stakeholder theory and argued that managers' need to understand the concerns of the stakeholders in order to develop objectives with the support from stakeholders (Freeman & Mcvea, 2001). Moreover, the relationships with all stakeholders should be explored to develop strategies.

The idea of stakeholder approach suggests that:

"Managers must formulate and implement processes which satisfy all and only those groups who have a stake in the business. The central task in this process is to manage and integrate the relationships and interests of stakeholders in a way that ensures the long-terms success of the firm" (Freeman & Mcvea, 2001, p. 192).

Freeman and Mcvea (2001) further say, "*many traditional views of strategy have ignored some stakeholders*" which "*may well be appropriate in relatively stable environments*" (p. 193). However, in a constantly changing environment firms must integrate the interests of key stakeholders in the purpose of the firm while managing the relationship with stakeholders in a consistent and strategic manner (ibid).

It is seen that an increased government regulation forces companies to undertake the use of better technology, moreover to work towards decrease emissions (Naturvårdsverket, 2010). As for Intel, their main customer Apple is forcing them to develop new and improved products as stated on Reuters.com: "*Intel eyes Apple as it maps its future*" (Thomson Reuters, 2011). NGO's (Non-Governmental Organisations) such as Greenpeace are working close to Coca-Cola and McDonald's to find ways to reduce and replace environmental harmful technology and minimize their environmental impact (NY Times, 2011).

Freeman (1984) provides a commonly recognized model of the firm and its stakeholders, which can be seen below. As the model illustrates, there are various stakeholders influencing

the firm and they cannot be seen and managed as one, they all have different demands and influence.

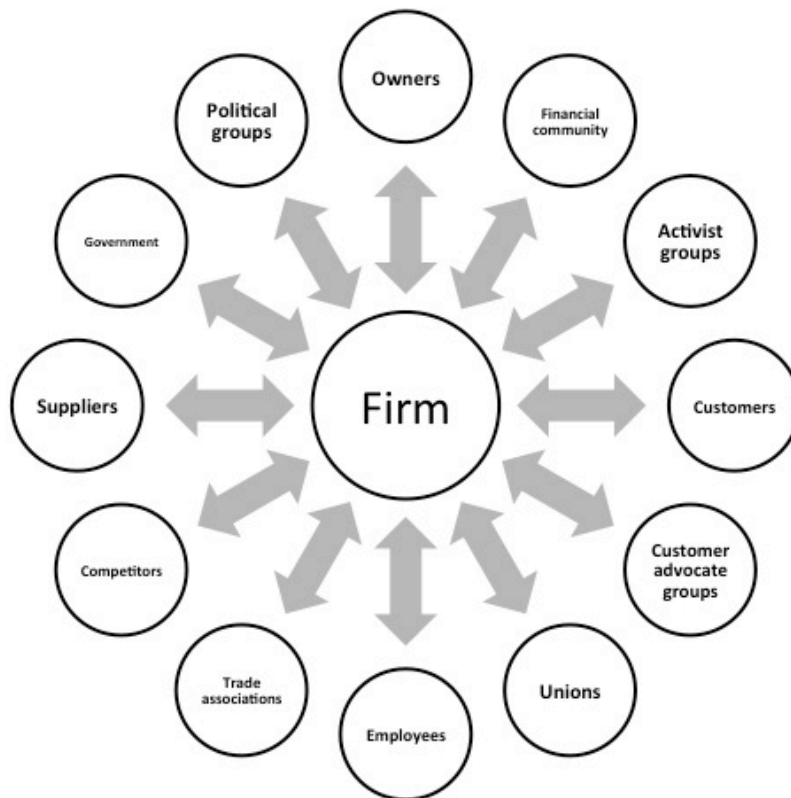


Figure 1: Stakeholder Map (Adapted from Freeman, 1984, p. 55)

Depending on the stakeholders' influence, companies will undertake a more or less proactive or reactive environmental strategy. Proactive firms are those who are willing to take actions and go beyond the law and reactive firms are characterized by just keeping up with the regulations (Klassen & Whybark 1999).

Although existing research have identified factors influencing a company's environmental strategy there is lack of research empirically analysing how different stakeholders affect the environmental strategy of the firm (Fraj-Andrés, Martinez-Salinas & Matute-Vallejo, 2009). Moreover, the majority of existing research is focus on influencing factors in the paper mill- and chemical industry. The authors of this paper choose to focus on firms in the energy intensive industries in general and firms in the glass industry in particular to see how stakeholders influence the environmental strategy of the firm. This industry suffers from high CO² (carbon dioxide) emissions, and Pilkington, a glass manufacturer in Halland stands for the highest CO² emissions in the region (Sveriges Radio, 2009), which will justify and motivate the relevance of this study. Moreover, this research will be limited to review one company and only examine the stakeholders' influence upon the firm, hence only the impact on the environmental strategy is of interest.

The challenges for firms arise to manage these stakeholder groups, which lead the authors to the following purpose and research questions.

1.3 Purpose of Study

The authors of this paper will identify the main stakeholders for the energy intensive industry in Sweden. Moreover, the interest of this study is to examine in what way stakeholders influence the environmental strategy of the firm. Our aim is to contribute to existing research by shedding light on areas where limited research has been made to provide an understanding of influencing stakeholders in the energy intensive industry in Sweden.

1.4 Research Questions

Based on the purpose, the following research questions have been developed:

RQ 1: What are the main stakeholders in the energy intensive industry in Sweden?

RQ 2: In what way do they affect the environmental strategy of the firm?

1.5 Structure of Thesis

This thesis starts with an introduction guiding the reader through background and problem discussion, ending in purpose and research questions of the paper. The theoretical frame of references is structured to provide the reader with the literature needed to answer the research questions. The first research question will be answered using a clear theoretical framework, which will constitute the base for empirical findings and analysis. The second research question is more exploratory and will be answered mainly by the data in the empirical findings. The theoretical frame of references will therefore be less comprehensive and less structured. The methodology chapter will follow and present how the authors gathered data. The analysis chapter will compare the empirical findings with the theoretical part. The final part of the paper will answer the research questions and draw conclusions as well as providing the reader with a discussion, implications and further research.

2. THEORETICAL FRAME OF REFERENCES

2.1 Overview of Stakeholders

Stakeholders can influence companies in a number of ways and to various extents. The literature distinguishes between primary and secondary stakeholder groups (Clarkson, 1995). Primary stakeholders are those that the company cannot survive without, such as shareholders, employees, customers and suppliers together with what Clarkson (1995, p. 106) suggest is public stakeholders: “*governments and communities that provide infrastructures and markets, whose laws and regulations must be obeyed, and to whom taxes and other obligations may be due*”. Buzzelli (1991) argue that the primary stakeholders’ formal relationship with the firm have a great influence on a company’s environmental strategy success or failure. The formal relationship in particular makes those stakeholders especially important for the firm’s survival, profitability and growth (Clarkson, 1995; Hill & Jones, 1992).

Secondary stakeholders include those that affect or are affected by the company, but are not “*engaged in transactions with the corporation and are not essential for its survival*”, such as media and other interest groups (Clarkson, 1995, p. 107). Secondary stakeholders have the ability to influence the public opinion and in turn influence the company in a positive or negative way, but the company do not depend on them as in the case for the primary stakeholders (Clarkson, 1995).

Buyse and Verbeke (2003) have in their study found that effective environmental management requires the identification of important stakeholders. Moreover, the variety of salient stakeholders is important in order to pursue green strategies as they have the ability of allocating substantial resources in multiple domains such as manufacturing technologies, management systems etc. Therefore it lies a great challenge for companies in addressing the concerns from the key stakeholders in an effective manner as they have different interests and demands that needs to be satisfied (Freeman, 2004; Mitchell, Agle & Wood, 1997).

Freeman and Liedtka (1991) add that the demand from primary stakeholders can be satisfied in different ways and to different extent, which will influence organizations to adopt a more reactive or proactive environmental strategy. Waddock, Bodwell and Graves (2003) and Gupta (1994) suggest that corporate social responsibility and environmental consciousness are important, as they need to be in line with the expectations from the stakeholders. Henriques and Sadorsky (1999) on the one hand argue that a firm’s level of environmental proactiveness is related to high pressure from what they call organizational and community stakeholders, i.e. customers, suppliers, employees, shareholders and for example NGO’s and other social groups.

On the other hand it is suggested that environmental reactivity is related with high pressure from governments and media (ibid). There are other theories about this as well, for example Buyse and Verbeke (2003) present that one can distinguish between internal primary stakeholder and external primary stakeholders. Internal primary stakeholders are employees, shareholders and financial institutions while customers and suppliers belong to external primary stakeholders (ibid). They argue in their study that the internal primary stakeholders

are the only stakeholders that motivate the environmental proactiveness within the firm. However, their study was made on producers of intermediate products with little customer contact.

2.2 Internal Stakeholders

2.2.1 Top Management

It is commonly argued that support and commitment from top management is very important for environmental strategies (Fraj-Andrés et al., 2009; Hunt & Auster, 1990; Berry & Rondinelli, 1998). It will be easier to set environmental goals if the person in charge of the resources supports the plan and the support from top management makes it a lot easier to collaborate and coordinate environmental initiatives throughout the organization (Gonzales-Benito & Gonzales-Benito, 2006).

In the study of Del Brio, Fernández, Junquera and Vázquez (2001) it was found that companies with managers that were more aware of environmental advantages were more likely to have environmental managers or departments compared to those companies with managers' reluctant attitudes towards environmental issues. Azzone et al. (1997) suggest that employees and managers' environmental awareness in terms of "green" competences determine how well companies are able to adapt to environmental strategies.

Langerak, Peelen and van der Veen's (1998) study shows that there is a clear link between managerial knowledge of environmental issues and to what extent these considerations are integrated in the company's strategy. Drumwright (1994) and Fineman (1997) are further saying that managers' commitment to environmental issues depends on their ideals, values and lifestyles, which in turn determine the development of environmental strategies. Other researchers are arguing that it is not only the support from top management that matters as managers' beliefs, expectations, perceptions and opinions determine how environmental practices will be implemented (Fineman & Clark, 1996; Cordano & Frieze, 2000; Flannery & May, 2000; Banerjee, 2001).

Previous studies clearly point to the fact that environmental attitudes of companies is affected by the setting of top management within the company and whether they consider environmental initiatives as opportunities or not (Sharma, 2000).

2.2.2 Employees

Employees are another stakeholder that affects or is affected by the firm in one way or another. Employees are according to Buzzelli (1991) a big reason for a firm's success and a successful environmental strategy requires their participation. Henriques and Sadorsky (1996) talk about their importance in terms of; if employees support the environmental goals of the firm they are more likely to work with environmental issues. Hart (1995) consider the environmental performance of a firm as a "*dynamic process highly related to the abilities of the firm's members*" (as cited in Liu, Liu, Shishime, Yu, Bi & Fujitsuka, 2010, p. 1710). Liu et al. (2010) argue that employees can promote the firm's capacity by implementing green strategies due to their knowledge. Azzone et al. (1997) argue that employees is a major part of

a company's internal configuration and their competences stands for a great influence on the firm's overall strategic orientation.

Ambec and Lonei (2008) found evidence from surveys suggesting that companies try to improve their environmental performance to satisfy employees and unions. Henriques and Sadorsky (2007) further found that the pressure from employees is a significant determinant whether and how the firm is committed to environmental issues.

2.2.3 Shareholders

Shareholders are important for companies. They serve as investors and risk money due to the company's operations. Poor environmental performance can lead to environmental damage, which in turn can result in monetary losses for the shareholders (Hamilton, 1995). In this perspective, shareholders stand for a great deal of influence as they can withdraw capital or refuse loans (Buyesse & Verbeke, 2003). It is suggested that the perceived importance of shareholders and their pressure depend on whether the company is family-owned or on the stock exchange (ibid).

Shareholders can influence the firm's environmental strategy by expressing their concerns (Henriques & Sadorsky, 1999). Henriques and Sadorsky (1996, p. 384) argue that the pressures from shareholders arise as a result of “(1) *discontent with environmental fines which lower profits*, (2) *disillusionment with progress toward environmental goals* and (3) *difficulties in raising new capital or attracting new investors*”. To prevent or reduce this from happening it is important to communicate with the shareholders and to make them aware of the firm's environmental position. The more pressure the shareholders put on the firm, the more likely is it that the firm will develop an environmental strategy (Henriques & Sadorsky, 1996).

2.3 External Stakeholders

2.3.1 Customers

Companies depend on the customers and this kind of pressure is proven to be one factor that influences firms' environmental strategy to a high extent (Henriques & Sadorsky, 1996). Henriques and Sadorsky (1996) found in their study of Canadian firms that the customer was a big pressure factor to adopt an environmental strategy. Unlike the result from Buyesse and Verbeke (2003) who found that customer and suppliers just have a limited influence on the firm's proactiveness, a research made upon firms that manufactured intermediated goods.

It is the company's desire to fulfil customers' needs and expectations that are resulting in actions that are related to environmental proactiveness (Gonzales-Benito & Gonzales-Benito, 2006). Depending on the pressure from the customer, the company will end up in a more or less proactive or reactive environmental strategy (ibid). Another reason for firms to listen and letting customers influence the strategy are to raise the customer awareness and to strengthen the customer relationship (Gupta 1994). A firm's position in the value chain and supply chain appears to influence the level of pressure from the customer (Gonzales-Benito & Gonzales-Benito, 2006). Moreover, it is suggested that the customer pressure increases the closer the firm gets to the end consumer. There are evidence in the literature suggesting that pressure

from the consumer is a big factor resulting in firms launching more environmental products (Wong, Turner & Stoneman, 1996). Fraj-Andrés et al. (2009) concluded that the pressure from customers when it comes to environmental expectations, influence managers to engage in environmental practices.

If a firm takes action trying to reduce the environmental impacts, by for example reducing pollution it can lead to increased customer loyalty (Ambec & Lanoie, 2008). It is further suggested that some companies choose to comply with ISO 14000 standard due to improved corporate image and the possibility of gaining extra customers (Hess, Kaouris & Williams, 1999).

2.3.2 Suppliers

Firms have to be careful in their choice of suppliers as rash decisions can lead to interaction with contractors that could damage their corporate image and reputation (Pujari, 2006). It is further argued that the firm needs to work close to the suppliers in order to develop green more environmental harmless products (ibid).

The characteristics of the suppliers and their influence are affected by the actors' size; it is argued by many (Baylis, Connel & Flynn, 1998; Gonzalez et al., 2008) that larger firms are usually under higher pressure. Bayilis et al (1998) found that large companies usually focus on their closest suppliers and that they often are large companies as well.

Henriques and Sadorsky (1999) found that suppliers handle firms that do not behave in the right way by stop delivering goods. Suppliers that are in the possession of certificate are able to increase their influence (Gonzalez et al., 2008), and it is further found that the supplier's influence is moving upstream in the supply chain.

2.3.3 Government

Environmental regulations have long been the main reason why firms engage in environmental actions (Bansal & Roth, 2000; Banarjee, Iyer & Kashyap, 2003). Government regulations exert a great power on the industry and if companies do not meet the requirements, fines and penalties will follow as consequences, which in turn have led companies to adapt and respect the environment more (Fraj-Andrés et al., 2009). Wong et al. (1996) found that environmental regulation represent a major force encouraging firms to invest in more harmless environmental technologies. Menon and Menon (1997) further suggest that firms acting in highly regulated industries are more likely to develop environmental strategies to keep their competitive position. Moreover, Saha and Darnton (2005) argue that environmental regulation represent a major pressure for firms to adopt an environmental strategy.

Governments are controlling the allowed amount of pollution in terms of establishing regulations (Henriques & Sadorsky, 1996). Due to this, firms need to meet those requirements, which is why this stakeholder is considered to be one of the most influential one. The pressure from governments is proven to create a higher environmental performance (Christmann, 2004; Henriques & Sadorsky 1996). On the contrary, Levy (1995) found that the regulatory pressure affected firms, but not necessarily in a way that provides a better or

stronger environmental appearance. It is argued by Henriques and Sadorsky (1996) that governmental regulations are an important pressure factor as it also creates different conditions for firms depending on country, location and industry. Firms acting in industries and sectors with strict regulations are more likely to implement environmentally actions into their business strategy, (ibid). Porter and van der Linde (1995) suggest that environmental regulation can trigger companies and lead to competitive advantage depending on the geographic location, for example, they identified during the 1970s that there were considerable differences between US and Scandinavia in regulations in the pulp-and-paper industry. The US industry was much stricter which forced them to adopt certain technologies to stimulate the regulators while the Scandinavian industry were able to focus more on improving the production process instead of the waste (ibid).

International regulations are controlling the allowed national emissions, but how these are affecting actors and corporations in specific countries are decided by national governments that are implementing those laws and regulations (Christmann, 2004).

2.3.4 Public Interest

Society

It is discussed by Fraj-Andrés et al. (2009) that corporations act towards social values to achieve a social image. Social responsibilities lead corporations to undertake a transparency and an openness of their performance (Waddock et al., 2003). According to Baylis and Connel (1998) lies the social concern upon several factors, which are found to be companies' odour, noise, dust and gaseous emissions.

“Size does make a difference here since the greater scale, complexity and potential to pollute of many large companies' operations means that a site is more visible and more likely to attract public interest if any problems are caused” (Baylis et al., 1998, p. 289).

An increasing pressure on the environmental aspects from society forces companies to adapt strategies that fulfil customers' environmental values (Delmas, Russo & Montes-Sancho, 2007). Depending on the extent to which corporations consider the social pressure can the public perception of the firm increase (Esty & Winston, 2009). As Henriques and Sadorsky (1996) prove, social interest influence firms legislative process and buying pattern. It is stated in Green to Gold by Esty and Winston (2009) that firms that do not pay attention to the local community may later on face problems.

Media

It is argued by many that media can influence the environmental strategy of the firm (Henriques & Sadorsky, 1999; Gonzales-Benito & Gonzales-Benito, 2006).

To become successful on the market it is crucial to handle the media in the right way (Esty & Winston, 2009). A task that becomes harder and harder as a result of fast expanding media as TV, radio, newspaper and of course Internet. The last mention has made it more difficult for corporations to control which and how information is spreading and targeting. It is showed that media has the possibility to provide the public with information that drive the social understanding, which also will affect the political and regulatory understanding and progress (ibid).

It is argued that media attention in general is focusing upon crises, which will turn the least environmental concern corporations highly aware of media, because of the risk to be revealed or portrayed in those situations (Henriques & Sadosky, 1999).

There is different way for corporations to handle media in the strategy, but the most important is to look over the whole process (Esty & Winston, 2009). By doing so one will minimize the risk of processing acting in a way that can be an obvious target for reporters and the media (ibid). To complement this it is also discussed that corporations need to plan how to handle unpredictable environmental incidents, while the best way to handle the media is real actions, an emergence response plan (ibid).

NGO's

It exist thousands of non-governmental organizations in the world and some of the biggest multinationals are "Greenpeace" and "Friends of the Earth". These are considered to have a public influence. It becomes more common that NGO's are joining relationship with corporations, like McDonalds and Greenpeace (Esty & Winston, 2009).

2.4 Analytical Model

After analyzing the literature the authors of this paper chose to focus on the above presented stakeholders, which were merely discussed in previous research. However, the stakeholders presented in this paper's theoretical frame of references have been selected due to their relevant connection to the firm's environmental strategy (ES), which is also why other stakeholders have been excluded. It was not found any relevant evidence in previous research supporting other stakeholders' influence on the firm's environmental strategy, however, there are research studying stakeholders' influence on firms in general. The model from Freeman (figure 1) illustrate stakeholders influence on the firm in general, while this paper focus on stakeholders influence on the environmental strategy of the firm. Due to this focus, Freeman's originally stakeholder model has been modified. The choice of framework is illustrated in the model below arguing that stakeholders influence the environmental strategy of the firm. The green circles represent the internal stakeholders while the white circles represent the external ones. The model will be used as a basis for this thesis.

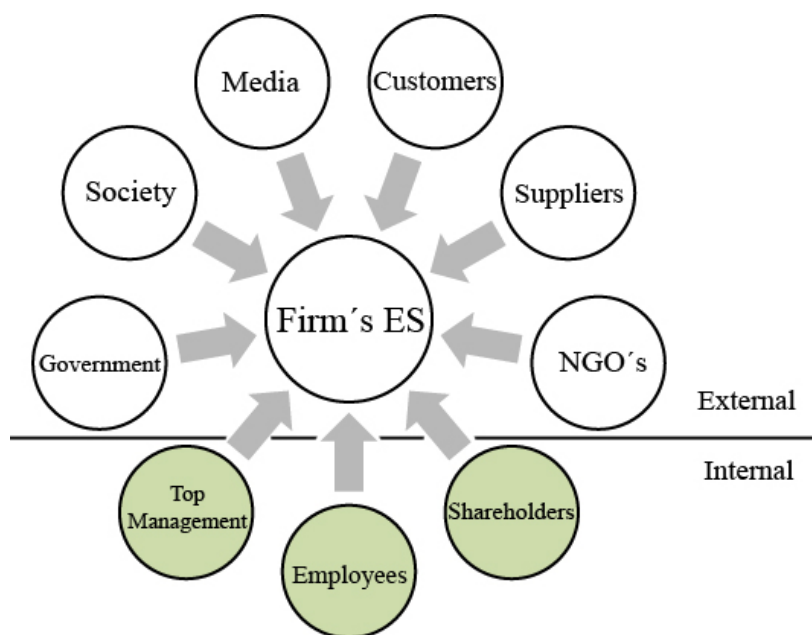


Figure 2: Model of Theoretical Framework (own model based on Freeman's Stakeholder Map).

2.5 Measuring Stakeholder Influence

Since the second research question is more explorative, the authors will build the answer from the empirical findings. However, to provide some indications in how to look at the influence from stakeholders, the authors will explain how the perceived importance of stakeholders affect the influence on the environmental strategy and how it can pressure the firm to adapt to a more or less reactive or proactive environmental strategy.

Stakeholders' importance depends on the firm's managerial perceptions of the stakeholders, which in turn influences the firm's strategy (Banarjee, 2001; Fineman & Clarke, 1996; Donaldson & Preston, 1995; Mitchell et al., 1997; Henriques & Sadorsky, 1999). It is important to understand the importance of different stakeholders as they act as motivation for the firm to adopt a proactive or reactive environmental strategy. Moreover, a proactive environmental approach can improve the relationship with the stakeholder and in turn influence the stakeholder (Shrivastava, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).

It is found by Hart (1995) that firms can be categorized in three generalized groups: *pollution prevention*, *product stewardship* and *sustainable development*, depending on the environmental approach they undertake. These categories are ranging from a reactive (pollution preventive) to a proactive (sustainable development) approach.

Pollution prevention. Firms following this strategy are focusing on minimizing emissions and waste through continuous improvements on internal activities (ibid).

Product stewardship. Firms following this strategy are involving external activities and consider the whole product life cycle to minimize the environmental impact (ibid). These actions require a closer approach towards suppliers and involvements from external stakeholders in product development and process planning.

Sustainable development. Firms following a sustainable development strategy have the purpose of minimizing the environmental burden of the firm's growth and development by deploying low impact technologies and collaborate with stakeholders (ibid).

To further examine the influence from stakeholders, the authors have chosen to analyze whether and how stakeholders affects the firm's environmental strategy directly or indirectly. A direct influence will be seen as a pressure from stakeholders resulting in direct actions in the environmental strategy, while indirect represent pressures that do not explicitly result in actions in the environmental strategy, yet having an influence.

3. METHODOLOGY

This chapter will describe the methodology used in the research along with the collection of data. It will further explain why the authors chose certain research strategies and how the sampling was made. Primary and secondary sources will be discussed along with validity and reliability of the thesis.

3.1 Research Approach

In general, when talking about research approach, one often refers to deductive and inductive (Bryman & Bell, 2007). Eisenhardt and Graebner (2007, p. 25) argue that inductive theory builds from cases aiming to produce new theory while deductive theory is using data to test theory. In this paper, the authors followed an abductive approach, which is a combination of inductive and deductive, and it is *“fruitful if the researcher’s objective is to discover new things - other variables and other relationships”* (Dubois & Gadde, 2002, p. 559). The deductive part in this paper is the theoretical framework, which the author chose to build the thesis on and the inductive part, is the empirical findings that derive from a case study. The choice of research approach will provide a deeper understanding of the research area, thus limiting the study.

The authors have chosen the inductive approach in the data collection as a result of the research questions and the chosen field of study. Since the authors are exploring the field, an inductive approach is preferable. The formulated research questions suggest that an inductive approach is more appropriate as the theory building in this sense are building on a case study where the objects of observation are less precise and rigorous (Eisenhart & Graebner, 2007).

3.2 Research Strategy

The authors of this paper chose a qualitative research approach due to the somewhat limited research in this field. A qualitative research method is often used when one aims to develop new theories while a quantitative method is used when the goal is to verify and test existing theories (Bryman & Bell, 2007). Further, qualitative data usually takes form of words rather than numbers and one is able to *“preserve chronological flow, see precisely which events led to which consequences, and derive fruitful explanations”* (Miles & Huberman, 1994, p. 1). By conducting a qualitative research strategy the authors of this paper aim to capture data through observations, interviews and documents (Miles & Huberman, 1994).

The authors’ choice of subject and research question requires the interpretation and perceptions of the people working in the company, which is why this kind of qualitative research approach is appropriate. The chosen strategy provides the authors with a deeper understanding of the subject and research area, which is required in order to answer the research question. However, this research strategy may minimize the possibilities of generalizing the study due to generating theory of the findings (Bryman & Bell, 2007).

3.3 Research Design

The authors have decided to adopt a case study design where one company is of interest and will be examined. The company for this study is Pilkington, a producer of float glass in Halmstad.

A case study design is appropriate when the research area is fairly unknown and previous research demand a new perspective (Eisenhardt, 1989). Siggelkow (2007, p. 23) argues that there is a weakness with this type of research as “*case-based research papers is lack of selectivity and presentation of only those details that relate to the conceptual arguments*”. However, regardless of the case method, data from case studies “*usually get much closer to theoretical constructs and provide a much more persuasive argument about causal forces than broad empirical research can*” (Siggelkow, 2007, p. 22-23). In other words, this study is limited to one case study, which may obstruct generalization, but on the other hand provide research based on characteristics of the organization instead which in turn can be applicable to similar industries. Moreover, by using a case study design, it will not be possible to compare with other companies and draw on conclusions based on the differences. The authors of this thesis chose to do a case study design due to the above presented reasons but also due to the time concern, which in turn impact the quality of the thesis.

3.4 Data Collection

In order to collect data, the authors used primary and secondary sources, i.e. data collected from face-to-face interviews, questionnaires, documents and websites. From interviews one are able to get rich data in an effective way (Eisenhart & Graebner, 2007). The negative aspect with face-to-face interviews could be that the data gathered can be somewhat broad as well as it can be very time consuming.

An audio recorder was used to secure the data from the interviews while at the same time it provides the possibility to go back and interpret the data over and over again.

3.4.1 Primary Sources

Pilot Interview

To understand and test early thoughts and hypothesis in the thesis work, pilot interviews were conducted with three large companies that had an explicitly developed department managing environmental issues. The pilot interviews were made with companies in three different industries and provided the authors with information that guided the development of this thesis.

Before conducting the case study at Pilkington, the authors had an informal meeting discussing the topic and related issues perceived by the company. Pilkington turned out to be a relevant and suitable company of interest, which resulted in a case study.

Interview

Before starting the interview, the authors informed the interviewee about the structure and the topic of the interview and explained terms and definitions that were going to be discussed.

The major part of the data collection was gathered through semi-structured interviews. According to Bryman and Bell (2007, p. 213) it refers to “*a context in which the interviewer has a series of questions that are in the general form of an interview schedule but is able to vary the sequence of questions*”. The authors are also due to the structure allowed to ask follow up questions and ask further about issues that appear to be interesting and significant for the study (Bryman & Bell, 2007). At all interviews, both of the authors were present.

The interview guide was constructed in an open way with a broad topic to first provide the authors with an impression of how the interviewee relate to the topic. The questions asked were constructed for the interviewee to respond and develop his or her own answer. The interview guide was a guideline helping the authors to be on track with the topic as well as sometimes, when needed, trigger the interviewee to develop their answers further. As an example, the authors asked a broad question with sub questions about the topic which provided the researcher a great deal of flexibility and guided the interview in the direction that was of interest. The interview guide can be seen in Appendix 1.

The interviews were conducted in a private room at Pilkington during 45 minutes. The choice of interview location ensured an interview without interruptions or disturbing irregularities.

3.4.2 Secondary sources

The authors complemented the primary data to get a wider perspective. This was done by the use of additional sources of data such as questionnaires, documents and websites.

Questionnaire

When all interviewees had been interviewed, the authors sent out a questionnaire for the interviewees to fill in. The idea with the questionnaire (Appendix 2) was to see how the interviewees perceive the importance and influence of the different stakeholders.

Documents

- Pilkington and the Flat Glass Industry 2010 - (background information of Pilkington and information about the world’s flat glass industry).
- Annual Report 2010
- Sustainability Report 2010’

Websites

Energimyndigheten’s website (energimyndigheten.se) was used in order to get information about Pilkington’s environmental work but also about the industry in general. Sveriges Radio (2009) has published articles about Pilkington discussing their CO² emissions.

3.5 Building the Frame of References

In order to create and develop the frame of references, the authors searched and collected articles mainly from ABI Inform, ISI Web of Knowledge and Google Scholar. Articles were chosen according to most cited and relevance. The authors searched for articles using keywords such as: environmental strategy, green strategy, natural environment, sustainable strategy, green thinking, stakeholder etc. by itself or in combination with each other.

3.6 Choosing the case

The research questions guided the authors and the study towards the energy intensive industry. Factors concerning environmental strategy were repeatedly mentioned in this context. It is crucial to locate a small number of samples when doing qualitative research to be able to gather in-depth data (Miles & Huberman, 1994). Miles and Huberman (1994) discuss the importance of choosing cases while randomly picked samples can lead to uncertainty and misleading results.

There are a number of large industries within this energy intensive industry. In depth research have been conducted in some industries but the authors identified the lack of research specifically in the glass industry. The authors of this paper chose a company that is heavy embattled by environmental regulations. Moreover, the company needs to have a distinct department working with environmental questions. The company must also be fairly large as the thesis deals with strategy issues. The glass industry is highly affected by environmental regulations, which makes the choice of this industry relevant and suitable for this study. The reason to this relevance is that the glass industry consume a large amount of energy in the manufacturing process and shows high quantity of CO² emissions. Pilkington float glass located in Halmstad has the highest quantity of CO² emissions in the region (Sveriges Radio, 2009).

To provide an understanding of the organisation and the stakeholders affecting the glass industry, interviews with people from different departments, with different perspectives were made. Managers were interviewed, to provide a perspective from the top as it concerns strategy issues, but also non-managerial people to capture the perspective from the “floor”, where the concrete actions are made. The following people were interviewed:

- Production Manager
- Marketing & Sales Manager
- Purchaser
- Process Engineer
- Environment Officer
- Technical Manager

3.7 Research Validity and Reliability

To secure the quality of the research it is important that the authors consider validity and reliability of their research. It is mentioned in Bryman and Bell (2007) how the measurement, causality, generalization and replication shall be able to be made upon the study.

Bryman and Bell (2007) state that in order to make the research valid, the authors have to be consistent in the measurement of the results to establish a conclusion based on the theory. When the authors' felt that answers from the interviewee was somewhat unclear, additional questions were asked, either by phone or mail. This was done to ensure the quality of the collected data, so consistency among all interviews could be achieved. For example, we made sure to not leave any loose ends during the interviews and complemented the interviews with the questionnaire to strengthen the study in general and the consistency in particular.

Bryman and Bell (2007) talk about the study's external validity through transferability, by collecting a lot of detailed data makes it possible for the reader to determine the papers transparency. The empirical finding's chapter consists of data, which makes it possible for the reader to follow and understand why certain conclusions have been drawn. The data provides the reader with the possibility to interpret, analyse and compare with the theory part to understand the author's way of realizing this study.

Reliability is the study's possibility to be repeated, as well as the conclusion must be comparable to similar research (ibid). In order to fulfil this, the authors of this thesis have presented step by step how the study has been made. Provided are also documents such as interview guide and questionnaire along with a presentation of the interviewees and databases.

Generalization is the extent the conclusion and findings' are suitable to be applied on a larger population (Denzin & Lincoln, 1994). This study has been made on a company acting in the glass industry and the results will therefore be well suited for companies within this industry. This industry fulfils similarities with the energy intensive industry in general and may therefore be generalizable in some aspects, e.g. both industries suffer from strict environmental regulations and consume high amounts of energy.

Models are a way of simplifying the reality while they only are made to capture a part of the given data, regardless of the complexity in the model (Denzin & Lincoln, 1994). This has to be considered when reading this thesis and looking upon the reliability and validity of it. As for this thesis, we are using models to highlight relations in line with the research questions, to make it easy for the reader to follow.

4. EMPIRICAL FINDINGS

Data collected from interviews and secondary sources are presented in this chapter. The interviews provided the authors with data of the stakeholders and their influence on the environmental strategy of the firm. This chapter starts with a background of Pilkington followed by presenting the stakeholders in line with the topology from the first theory part. The empirical findings part will provide the answer to research question one, and provide a base for answering research question two in the analysis part. Note that all statements gathered from interviews have been translated from Swedish.

4.1 Company Background

The following data concerning Pilkington's background is gathered from NSG's (Nippon Sheet Glass) *Annual Report* (2010) and *Pilkington and the Flat Glass Industry* (2010). Pilkington is one of the world's largest manufacturers of glass products for the construction- and automotive industries. Pilkington is a part of NSG Group, a global Japanese actor with manufacturing in 29 countries. NSG Group is one of the world's leading manufacturers of glass and glazing systems in three major business areas: construction-, automotive- and specialty glass products. The corporate group has 28 500 employees and 42 per cent of the Group's sales are in Europe. NSG Group is listed on the Tokyo Stock Exchange. The head quarter of Pilkington is located in Great Britain. Pilkington has one manufacturing plant located in Halmstad. This factory produce coated and coloured float glass for the automotive- and construction industry. Pilkington in Halmstad have approximately 290 employees.

4.2 Internal Stakeholders

4.2.1 Top Management

All interviewees experienced support and commitment from top management in their work with environmental issues. This was also supported from the questionnaire that recognized top management as very important as well as having a high influence on Pilkington's environmental strategy. The top management sets the strategy and the environmental goals along with environmental policies.

They appoint and make budgets for green investments. One interviewee explained the top management support by saying:

“ We are able to do the necessary investments in an environmental aspect.”

One of the interviewees stated that Pilkington has chosen to follow an optional energy-reducing policy resulting in an energy management system. The decision of implementing this energy management system was made from the top with the goal to reduce the electricity consumption. Even though Pilkington realize green investments it was mention during the interviews that:

“We are not doing green investments if there is no economic gains.”

Moreover, the investment must meet a certain pay off time to be made.

The interviewees emphasized that the top management sees environmental initiatives as opportunities and a way to be competitive. One of the interviewees states the following about the role of the top management:

“Their role is very important. We want to make sure that Pilkington contributes to a greener society. Even if our production process is very energy consuming, we are producing a green product.”

4.2.2 Employees

As well as stated during the interviews it was also proposed through the questionnaire that this stakeholder have a significant influence and importance on the environmental strategy. The employees at Pilkington have the possibility to influence through idea activities by suggesting proposals that can result in energy- and environmental improvements. One of the interviewees is saying that:

“My task is to make measurements and find solutions for improvements so we can reach our environmental goals which results in a more resource efficient production.”

The employees are executing the environmental goals and they provide the company with information to establish the environmental strategy. Some employees have specialized education and knowledge and the responsibility to monitor the progress of laws, energy consumption and other environmental considerations. Data from their work will be used as inputs for setting up environmental goals.

One interviewee stated that the employees have the ability to influence the environmental strategy everyday by bringing their views and opinions. During the interviews it was also mentioned that the employees at Pilkington *“are very environmental conscious”*.

4.2.3 Shareholders

The shareholder, the owners of Pilkington is NSG Group. From their Sustainability Report (2010) they state the following:

“We take our environmental responsibilities extremely seriously. All our operations are required to meet all legislative standards as a minimum, and where local requirements are not considered sufficient to address an issue, our own corporate standards do.”

One of the interviewee states that NSG Group has outlined a global policy for all float glass producers within the corporate group. This policy involves a commitment to sustainability and influences the firm’s actions, e.g. by restricting the number of suppliers to those who are only using paper from re-emerging forest. From the questionnaire the shareholders were proven to be of high importance while having a high influence on the firm’s environmental strategy.

When asking about the shareholders and their influence it was stated that:

“The shareholders require that we are good citizens and obey the laws in the country of action.”

It is a common perception that NSG are interested in environmental issues, as an example, it is mentioned that NSG is far ahead in the development of solar cells.

Reporting to NSG occurs on a frequent basis, for example of CO² emissions. However, there were also indications from the interviews arguing that NSG do not influence Pilkington so much. One interviewee said that the influence from NSG was very limited on a local level, since he couldn't experience any firsthand impact.

NSG handle large investments and in order for Pilkington to get them approved they need support and compliance from NSG.

“When we invested in the emission cleaning equipment, it had to be endorsed from NSG.”

4.3 External Stakeholders

4.3.1 Customers

All interviewees agreed upon that the customer cares about the price, although they state other demands, but in the end it is just a matter of cost. *“Money talks”* as one of the interviewees puts it. This was confirmed from the questionnaire, which proposed that customers have a low importance and low influence on Pilkington's environmental strategy. It is a common perception that the customer is not interested in environmental questions.

“Some of them choose to buy products from our competitors that transport the products half way around the world, then you don't care about the environment.”

However, there are a few exceptions, Skanska for example, which is a customer, requires Pilkington to be ISO 14001 certified. The interviewee further states:

“We have a customer which delivers products to IKEA and they require that we declare documents containing information about our products' concerning the natural environment and whether they are degradable.”

One interviewee mentions:

“The customer can make demands in terms of quality which I go through with the production unit at Pilkington, to see if it is possible to produce this quality. If possible it can mean that we need to adjust our production and increase the efficiency, which will make the final price higher to the customer”

From the interviews it was found that Pilkington is trying to recycle glass from their customers, which they can re-melt in their production process and use over and over again. To the extent it is possible, Pilkington is gathering crushed glass from their customers. In order to manage this, Pilkington educates customers to handle the glass without mixing it with other materials.

The interviewees mention that Pilkington is working towards influencing the customers to consider environmental issues to a larger extent, but at the moment there is no such pressure.

Although one interviewee says that some customers require that Pilkington is ISO 14001 certified.

“As well as we are trying to improve our corporate image and create greener products, we can not do this if the customer doesn't wants it, the demand must come from them, otherwise we will not survive as a company.”

Pilkington's production process creates a lot of waste heat, which can be used as district heating.

“Pilkington provides a part of Halmstad with district heating from their production's waste heat. They further provide waste management companies' with a toxic material created from their glass production which can be used when handling garbage.”

4.3.2 Suppliers

One of the interviewees highlight the role of suppliers:

“Pilkington's production requires a lot of resources in terms of energy and raw materials and these stands for major costs which is why it is very important for Pilkington to be cost efficient.”

The suppliers' price setting influence whether Pilkington choose natural gas or oil as source of fuel, which in turn results in different impacts on the environment.

“Our choice of fuel is determined by the price. However, it is easier to handle natural gas but oil is more efficient.”

In some cases, when the electricity price has been beneficial, Pilkington has used electricity instead of fossil fuels as an energy source.

“We have a supplier evaluation system which we use when selecting suppliers. We prioritize suppliers that are ISO 14001 certified. Suppliers that have an environmental management system but are not certified are also considered but then we need to analyze them further. However, if they lack an environmental management system, we choose them away immediately. Thanks to the ISO 14001 certificate, we do not have to spend time analysing companies that we know are good enough and whom manage environmental issues in the right way.”

Throughout the interviews it was recognized that Pilkington choose green solutions if it doesn't affect the economy too much. According to the questionnaire were suppliers only providing a limited influence and importance on Pilkington's environmental strategy which also were mentioned during the interview where one interviewee didn't experience that the suppliers were putting pressure on them:

“The suppliers don't care if we are ISO 14001 certified or not.”

On the other hand it was found that suppliers could work as support by proposing ideas and directives concerning how Pilkington could or should handle material.

“It is often our suppliers that has the knowledge about laws and regulation, which will help us in the management of goods.”

4.3.3 Government

All interviewees experienced that it is very important to follow laws and regulations provided by the government. This was also confirmed in the questionnaire, where government was rated to be very important and with a high influence on Pilkington’s environmental strategy. Pilkington must declare their environmental impact annually which will determine their emission rights of CO². The government monitor and control whether Pilkington correspond to the purchased emission rights. From the interviews it was found that the government affect Pilkington a lot as they are:

“Monitoring our emissions and control if we meet the requirements.”

One of the interviewees stated that the extent to which environmental investments is made depend on current laws.

“We make sure to have the right technology to meet requirements from authorities.”

One interviewee explains how the government is affecting Pilkington:

“We are doing campaigns, we had one between 1976 and 1986 where we had certain prerequisites. Then we apply for a new campaign with new prerequisites. When we are renovating the oven we must report how much we are going to melt during the following campaign. From there, authorities take the decision whether we are allowed to this and during what period of time and under what circumstances.”

In order for Pilkington to be updated on laws and regulations they hire environmental attorneys and consults which can deal with environmental questions as well as predicting coming requirements. It is further suggested from the interviews that:

“The decisions made by authorities are very crucial for our production. They drive us to become better environmentally but on the other hand we are kept under stricter regulations compared to other countries.”

From the interviews it was commonly recognized that the interviewees experienced the regulations in Sweden stricter and somewhat unfair as they give similar production plants in other countries advantages.

From the interviews it was found that Pilkington is participating in an energy efficiency program, PFE (Program for Energy Efficiency) where the goal is to reduce the electricity consumption. Pilkington implemented this system and in turn they get a tax relief of 0,5 Swedish öre per kWh that is bought.

The interviewees also brought up the matter whether they are allowed to provide customers with waste heat. One interviewee states:

“The authorities could influence us more by allowing us to sell waste heat in a more efficient way instead of cooling it off.”

4.3.4 Public Interest

Society

The interviewees argue that it is important to look good in the society and not to be perceived as a villain.

“The employees at Pilkington have children at kindergarten and in school and that we must think of.”

One interviewee stated that there were always discussions about large manufacturing plants and where they should be located. One interviewee referred to NIMB, “*not in my backyard problem*” and said that people wants a factory but not here.

Whether the society puts any pressure on Pilkington or not was discussed during the interviews. The questionnaire gives the impression that the society is not so important, thus having a low influence on Pilkington’s environmental strategy. One of the interviewees emphasized Pilkington’s energy efficient products by saying:

“We are producing glass whose energy consumption during manufacturing is saved in less than a year during use. This truth is hard to get out to the public.”

From the interviews it was mentioned that it is very important to communicate with the society in case of disturbances.

“Worried citizens might call and have questions, then it is our responsibility to be honest to them and give them answers. It is very important to be open and honest about what is happening at Pilkington, otherwise we will loose faith in the society.”

It was further mentioned that it is important to take care of the society as people working at Pilkington also lives in Halmstad.

One of the interviewees mentions that the society can practice certain pressures on Pilkington.

“Pilkington is a large consumer of energy and if the society wants a more energy efficient production with greener products, they can influence us.”

To preserve the safety at Pilkington, one of the interviewees states that they are continually working with safety matters and provide employees with routines on how the work should be conducted. It was also said that risk analyses were performed on dangerous chemicals and other types of electrical works.

Media

It was mention during the interviews that media did not have a very big influence on Pilkington. The questionnaire also supports this finding showing that media is of low importance and have a low influence on Pilkington’s environmental strategy. However, it was argued that they could in public influence Pilkington negatively.

“You have so little to say about as a company or individual when it comes to media.”

They also argue the importance of handling disturbances from the public so it doesn't result in headings in the newspaper.

“Sometimes media is so fast, they can find out the most. One time we had a glass leak where people thought that is was a gas leak.”

In order to prevent misunderstandings, routines are implemented and people are being recruited to handle this in an effective way. One of the interviewees said that Pilkington communicate with media through media trained people.

“We have exercises to prepare ourselves for crisis and special training for people to manage these kinds of situations.”

NGO's

From the interviews it was not found any data supporting that this stakeholder influence Pilkington's environmental strategy.

5. ANALYSIS

The analysis is structured in the same way as the theory part with the exception the “measure of stakeholder influence” has been integrated under each stakeholder to bind the analysis together. The analysis part will provide explanations and justifications how the empirical findings are related to the literature.

5.2 Internal Stakeholders

5.2.1 Top Management

It was observed that Top Management could influence Pilkington in two ways, first by the long and short term strategically goals they put up for the firm. The second way is found to be in their budget for green investments, actions that can facilitate and support a green strategy.

Setting Goals

As found from the interviews, top management has the function of setting the firm’s environmental goals and how they should work to reach those goals. Pilkington is constantly working towards decreasing emissions, which is a goal set by the top management. These actions show environmental commitment from top management and indicate that green investments are seen as opportunities. From the questionnaire (Appendix 2) the authors of this paper were able to see managers’ interest in environmental issues. The results indicate that the people within the top management are very interested in environmental questions. The theory is suggesting that firms’ are more likely to make environmental initiatives if they consider them as opportunities (Sharma, 2000). It also mentioned that there is a link between managerial knowledge on environmental issues and how these are considered in the firm’s strategy (Langerak et al., 1998). Moreover, managers’ perceptions and opinions influence to what extent the firm will implement environmental practices.

Budget for Green Investments

Top management is responsible for the investments and will decide whether the firm places money in environmental actions or not. It was mentioned from the interviewees that the firm was budgeting for green investments and found by Gonzales-Benito and Gonzales-Benito (2006) that firms who are budgeting for this type of investments and improvements will be more beneficial in their environmental implementation. It is proven to be easier to set goals and implement practices if the required resources are available, approved and endorsed from top management (Gonzales-Benito and Gonzales-Benito, 2006). None of the interviewees had experienced problem with the financing of environmental investments. Moreover, as mentioned in the empirical part, the top management decided to implement an optional energy management system.

5.2.2 Employees

We see that the employees impact the environmental strategy in two ways; through ideas and improvements and through knowledge.

Ideas and Improvements

All employees at Pilkington are frequently attending meetings and discussions where they present ideas of improvements. As mentioned from the interviews, the participation of the employees have been an important way for Pilkington to find new solutions and make improvements, especially in reducing energy and waste in the production process.

Knowledge

The employees' influence provides knowledge and expertise useful for developing the environmental strategy. Knowledge possessed by the employees is in some areas deeper and wider than the decision makers. As an example, Pilkington has people with different expertise focusing on issues such as regulations and optimization of the production. From the questionnaire (Appendix 2) the respondents got the question where they were supposed to rate their interest and knowledge in environmental issues. The results indicated that they are very interested in environmental questions as well as they perceive their knowledge to be high. As mentioned in the theoretical part, Buzzeli (1991) argue that environmental planning requires the participation of the firm's employees. Moreover, the employees green competences have a great influence on the firm's strategic orientation (Azzone et al., 1997).

5.2.3 Shareholders

Found from the empirical data was that the shareholders impact the environmental strategy in two ways; through policies and investments.

Policy

The outlined policy from NSG leads down in the organization of Pilkington and it is affecting the employees' daily work, in regards of some products, they are only allowed to purchase packaging goods from suppliers that are certified. Henriques and Sadorsky (1996) discuss shareholder pressure and argue that the level of pressure depends on whether the firm is able to comply with environmental regulations and reach the environmental posted goals.

Investments

The shareholders have the role of approving all large investments. Depending on their approval, it will affect how the firm undertake certain strategies. For example, the emission cleaning equipment was an investment endorsed from NSG and thanks to that investment Pilkington was able to lower their CO² emissions while decreasing their total energy consumption. As stated in the theory chapter, Buysse and Verbeke (2003) found that shareholders could withdraw capital or refuse loans, actions that influence the firm's environmental strategy.

5.3 External Stakeholders

5.3.1 Customers

We see that the customers impact the environmental strategy in three different ways; first through the price, secondly by demanding a certain quality and third by recycling.

Price

The data gathered from the interviews implies that the customers are mainly focusing on the price. Environmental considerations in that aspect do not influence them to buy the product. Indirectly, the price demand from the customers has resulted in investments making

Pilkington's production process more efficient. By optimizing the production and reduce energy and waste Pilkington has been able to lower the price as well as the environmental impact. The firm needs to fulfil the needs and expectations from the customers and the literature also suggest that pressure from the customer will influence the firm to take environmental actions (Gonzales-Benito & Gonzales-Benito, 2006). It is further discussed that firms' should let customers influence their strategy due to raise their environmental awareness and strengthen customer relationship (Gupta, 1994).

Quality

From the interviews it was argued that some customers require ISO 14001 certificates as well as declaring documents of the products' content. These pressures derives mainly from larger customers who are more environmental aware. It is further found that the customers' demands or policies influence the firm to take certain actions. Ambec and Lanoie (2008) suggest that customer loyalty can increase if the firm choose to take actions towards reducing environmental impacts.

Recycling

Pilkington tries to recycle glass from customers to the extent it is possible. By re-melting crushed glass Pilkington reduce their energy consumption while their production process becomes greener due to less emissions. Pilkington's production process creates a lot of waste heat, which they can provide to customers. A toxic material emerges from the production process, which waste management companies can use in their handling of garbage. Buysse and Verbeke (2003) found when studying firms producing intermediate goods that customer only have limited influence on a firm's environmental strategy.

5.3.2 Suppliers

The empirical data shows that suppliers influence and affect the environmental strategy in two ways. First by the source of energy Pilkington has and also by adding ideas and process improvements.

Energy Source

The overall environmental impact from Pilkington's manufacturing process depends on the source of energy. Whether Pilkington choose natural gas, oil or electricity it will depend on the price, which will result in varying quantities of CO² emissions.

Ideas and Improvements

Suppliers support Pilkington by sharing of their professional experience in terms of how to handle different goods. They often have the knowledge of current regulations for managing materials etc. It is a mutual relationship where both the supplier and Pilkington can benefit from. Pujari (2006) found that firms' need to work together with suppliers to improve and employ technology.

5.3.3 Government

From the empirical data it was possible to see the government's impact on the environmental strategy. Their influence can be categorized in to three groups; laws and regulations, allowance and emission rights.

Laws and Regulations

The government was found to be a very important stakeholder, as Pilkington needs to follow laws and regulations provided by them. While the regulation in Sweden is stricter than in many other countries the manufacturing plant in Halmstad has been forced to undertake a higher environmental approach than many other plants in the corporate group. Fraj-Andrés et al. (2009) mention this pressure and argue that government regulations can penalise firms if they don't meet the requirements. Government can influence firm's environmental performance by providing them with this regulatory framework (Henriques & Sadorsky, 1996; Christmann, 2004).

Allowance

Regulations from the government restrict Pilkington to sell their waste heat for district heating. Instead of providing it to the society they cool it off. If Pilkington is able to take care and provide the waste heat to customers, they are becoming greener. As mentioned in the theory, regulations from the government are a major pressure influencing firms' to adopt an environmental behaviour (Saha & Darnton, 2005).

Pilkington are involved in a PFE program, by active working towards reducing the energy consumption. The government provide companies' participating in this program with financial benefits, so called allowance. This is an opportunity provided by the Swedish government that gives Pilkington a chance to reduce their energy consumption while earning a tax relief. This finding is in line with the argument from Henriques and Sadorsky (1996) who are saying that firms acting in industries where regulations are stricter are more likely to engage in environmental actions.

Emission Rights

The government provides Pilkington with conditions that they need to follow, e.g. allowed amount of emission. Pilkington has to invest in such emission rights on a yearly basis and then the government controls and make sure that Pilkington correspond to the requirements. This is in line with Henriques and Sadorsky (1996) who are saying that governments exert a great influence when they have the ability to control and restrict the allowed amount of pollution.

5.3.4 Public Interest

Public interest, which consists of society and media, has been categorized into groups explaining their impact on the environmental strategy. From the empirical data it was possible to categorize society into openness and greener products while media was categorized into training and education.

Society

Openness

The society influences Pilkington, they do not want to be perceived as villains and loose their faith. In order to keep or/ and improve their corporate image they have an open dialogue where they inform the society in case of disturbances. Fraj-Andrés et al. (2009) argue that actions towards social values can lead to improved social image which in turn lead firms to be

more open about their performance (Waddock et al., 2003). Baylis and Connel (1998) suggest that the social concern depends on factors such as gaseous emissions.

Greener Products

It was found that the society could exert some pressure on Pilkington by urging for greener products and a greener production process. Delmas et al. (2007) mention this pressure by arguing that the society can force companies' to adopt strategies to fulfil the values of the customers.

Media

Training and Education

As a result of pressure from media, Pilkington has ensured to have media trained people communicating with the public to minimize the risk of misunderstandings etc. They also provide the staff with routines to prevent accidents from happening. Esty and Winston (2009) discuss the role of media and argue that it is very important to handle the media in the right way as they have the possibility of spreading information fast, no matter if it is correct or not.

NGO's

From the interviews it was not found any data supporting that this stakeholder influence Pilkington's environmental strategy. This may be due to the characteristics of the glass industry. For example, this industry is closely observed and examined by governmental organisations, which makes the environmental impact decreasing. Nor are the risks as high as in industries such as nuclear or oil industry. Both exert great risks where big missteps can lead to catastrophes. NGO's are also often observing industries where previous accidents have occurred, e.g. BP's oil spill in the Gulf of Mexico and the nuclear disaster in Tokyo.

5.4 Reactive/ Proactive Environmental Strategy

When conducting the analysis we were able to categorize the stakeholders' influence according to Hart's definitions: pollution prevention, product stewardship and sustainable development strategy, ranging from reactive to a proactive strategy. When doing this, it is possible to see what stakeholder that influences Pilkington to take on a reactive or proactive environmental strategy.

Although top management considers environmental issues, it was found that green investments need to provide economic gains, which propose that top management take on a reactive environmental stance, according to Hart (1995).

When it comes to Employees the focus lies mainly on internal activities such as reducing waste and energy consumption. This is in line with the proposed reactive (pollution prevention) strategy from Hart (1995).

The authors found that the affect from the shareholders could be categorized towards the product stewardship strategy provided by Hart (1995) due to their global sustainability policy that involves external stakeholders such as suppliers.

In some aspects is the customer influencing Pilkington in a way that contribute to benefits for both the customer and the firm which shows a strategy in line with Hart's (1995) definition of product stewardship.

When analyzing Suppliers, it was found that firms that only do constantly improvements and not focus on the whole product life cycle shall be categorized as reactive (Hart, 1995).

Firms who are involving their suppliers in improvements is Hart (1995) describing as those that are in the possession of a product stewardship strategy.

Firms guided by regulation as Pilkington, are acting in line with a pollution preventive strategy (Hart, 1995) where improvements are done in order to keep up with laws. Henriques and Sadorsky (1999) support this by arguing that a firm's reactive environmental strategy is related with high pressure from the government.

When analyzing the stakeholder Public interest, it was found that firms involving and consider external stakeholders as Pilkington, presents an environmental strategy moving from reactive towards product stewardship according to Hart (1995). As found in this research, the influence from media affects Pilkington to undertake a reactive environmental strategy (Hart, 1995).

6. CONCLUSIONS

6.1 Answer to Research Question 1

Our first research question was;

What are the main stakeholders in the energy intensive industry in Sweden?

The authors of this thesis identified the main stakeholders of the Swedish energy intensive industry by gathering empirical data of the chosen research company, Pilkington. Possible relevant stakeholders were from beforehand identified from the literature, presented in the theoretical frame of references while examining the relationships in the analysis part. The authors of this thesis found evidence suggesting that the presented stakeholders except NGO's have an influence on Pilkington's environmental strategy. However, as the research question is proposing, this paper aimed to identify the main stakeholders. It was found that the perceived influence was in line with the perceived importance of the stakeholders. The authors found that the highest influence and importance derived from the following stakeholders:

- Government
- Top Management
- Shareholders
- Employees

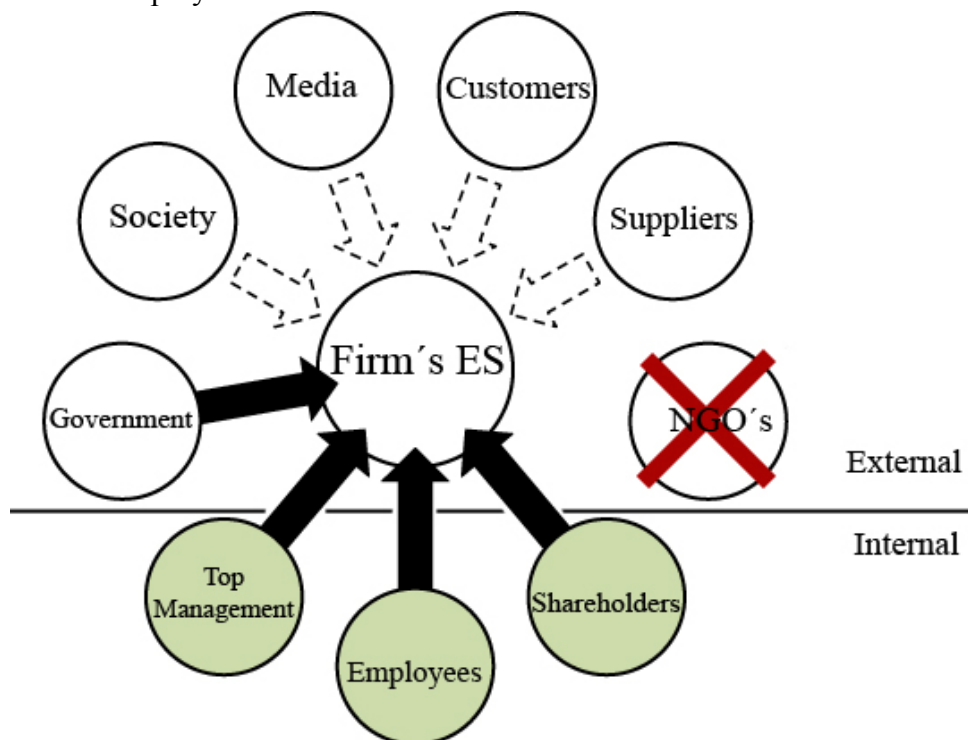


Figure 3: Overview of Stakeholders' Influence on the Firm's Environmental Strategy.

Stakeholders' influence on Pilkington's environmental strategy can be illustrated as in the figure above. The black bold arrows represent the main stakeholders (government, top management, shareholders and employees). The crosshatched arrows represent the other four stakeholders (suppliers, media, society and customers). Data from the interviews and the

questionnaires made the authors of this thesis able to determine between two stakeholder groups, those with high importance and influence and those with less importance having less influence.

6.2 Answer to Research Question 2

Our second research question was;

In what way do they affect the environmental strategy of the firm?

The three strategy definitions from Hart (1995) was found to be limited in some aspects as it appeared to be difficult to categorize stakeholders in specific groups. The authors have instead looked on stakeholders' influence and the environmental strategy as a flexible relationship. What is also important to recognize is that a high influence from the stakeholders doesn't necessarily mean that they influence in a proactive way.

It was found that the **Government** is the stakeholder with significant highest influence on Pilkington's environmental strategy. The firm has to follow regulations as Pilkington otherwise will face financial charges, which therefore are used as a strategic frame for their environmental strategy. The government can affect the firm's environmental strategy in several aspects. As an example Pilkington's environmental impact decreases due to the regulations of emissions, a direct way for the government to control the firm and their environmental strategy.

The negative impact from the government is that they decide whether Pilkington is allowed to get rid of their waste heat in a more efficient and beneficial manner. If Pilkington can provide the society with district heating instead of cooling it off, they are becoming more environmental. Such actions would provide Pilkington with a lowered energy consumption that in turn improves their environmental strategy.

One role of the government is to regulate the amount of CO² emissions for firms. In order for them to meet the requirements, improvements such as optimizing the production process will occur. These regulations determine what changes Pilkington needs to do, which therefore affect their environmental strategy.

It was found in the literature as well from the interviews that government has the ability to influence firms to become more environmental friendly. They can provide firms with allowance, however it was not found to be environmentally driven, rather economically.

Top Management has proven to have a big influence on firms' environmental strategy. They decide on investments, which directly influence the firm's environmental impact. They have the possibility to influence whether Pilkington choose to employ less harmful technology etc. Actions from top management have a direct influence on the firm's environmental strategy through their decisions and goal setting.

The authors found an overall influence from the **Shareholders**. On the one hand, they outline a global policy that creates a framework for Pilkington to develop their environmental strategy. This global policy functions are used through all organizations within the corporate group, which tend to be of less importance in countries with high governmental regulation, as

Sweden. On the other hand, NSG approve all large investments, which in that aspect gives them a direct influence.

The influence from **Employees** is found to derive from their ability to affect the environmental strategy through top management. Indirect will their inputs of knowledge and ideas support further decisions taken by managers. Moreover, it is suggested from the interviews that employees at Pilkington possess “green” competences and by their execution of the environmental goals they are ensuring that the emission requirements are met as well as they have a good insight in providing Pilkington with further improvements that can result in economically and environmentally benefits.

The categorization of Hart’s strategies were used in order illustrate in what way stakeholders can affect the environmental strategy of the firm. However, the concepts were not “clear cut” for the analysis but conclusions can still be drawn. Firstly, government can influence the environmental strategy in two directions: one more to the reactive strategy while just following the law and on the other end promote firms to engage in energy efficiency programs and get a tax relief, which therefore suggest a product stewardship strategy. Secondly, top management take decisions based on economic aspects, following the pollution prevention strategy (reactive). Thirdly, shareholders’ influences propose that they are more in line with the product stewardship strategy. Finally, employees’ influence derives mainly from improvements of internal activities, which suggest a pollution prevention strategy. From the findings it is also possible to distinguish between stakeholders that have a direct respectively an indirect influence. The main stakeholders have this in common, i.e. they all have a direct influence on Pilkington’s environmental strategy. When it comes to the other four stakeholders that appeared to have limited influence, it was harder to categorize them in Hart’s strategies as well as distinguish between a direct or indirect influence. Their influence were harder to determine as the gathered data showed inconsistency in the interviewees perceptions. However, the following section will provide information about how those stakeholders influence Pilkington’s environmental strategy.

6.3 Discussion

Pilkington noticed a demand for policies such as ISO 14001 from some parts of their **Customers**. As a consequence, Pilkington undertook actions to satisfy those needs. However, “money talks”, i.e. the customer is interested in the price. Pilkington is acting B2B and deliver intermediate goods for the automotive- and construction industry. This could be one reason for why the customer doesn’t have such a big influence. Buysse and Verbeke (2003) discuss that customers have limited influence when it comes to intermediate goods and that the level of customer pressure increases the closer the firm gets to the end customer (Gonzales-Benito & Gonzales-Benito, 2006).

Influence from **Media** is showed to be limited for this industry but Pilkington is still conscious of their behaviour because of media. It has resulted in a higher degree of transparency in their actions.

While the local community affect the firm in a way that creates a **Social** responsibility, it was found from the interviews that the interviewees believed that society influenced Pilkington in

a direct way, but when the authors examined the real underlying reason, it was found that the society was not having a very big influence on Pilkington's environmental strategy. This may be due to several reasons; one could be that as an employee you really want to preserve the environment and would like to think that the society has a big influence on Pilkington, which therefore also results in an answer saying so.

The authors have found that **Suppliers'** influence of the firm's environmental strategy was limited. The model illustrating the theoretical framework (figure 2) suggested that this paper aims to look at how stakeholders influence the environmental strategy of the firm, with the arrows pointing only in one direction. From the interviews it was found that suppliers don't have a very big influence on Pilkington. In fact, due to their "none environmental behaviour", Pilkington tries to influence them to become greener. As an example, Pilkington evaluates suppliers and only make business with those that have environment management system. Further on Pilkington tries to influence their customers to provide them with crushed glass and recycle it and in order to manage this they educate the customers so the handling of materials is made in a correct manner. The literature is mentioning this and argues that a proactive environmental approach can improve the relationship with the stakeholder and in turn influence the stakeholder (Shrivastava, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).

This study shows that the glass industries' main stakeholders derive from internal stakeholders as well as the government, which is distinctive for firms having a reactive stance. These firms are as Pilkington, often acting towards another industry (B2B) and not directly towards the end consumer. The industry and end consumer value things differently and in general it is found to be higher restrictions for items and products sold towards the end consumer, which are in line with the findings of this study.

The data also indicates the importance of the price of the product, as Pilkington's customers value a low price over environmental impact, the firms strategically actions will therefore be guided by this desire. Products like this, i.e. glass products such as windows, consumers are evaluating mainly on price and functionality which further supports why the stakeholder group concerning the customers do not have a very big influence on Pilkington's environmental strategy.

Found from this thesis was that people working within Pilkington have different perceptions of the environmental strategy. If people differs in perception, they might also value the strategy differently which implies that it can create diversity throughout the organisation, which can result in misunderstandings and unmet goals. Preferably firms want their general strategies and policies to be recognized throughout the organization regardless of department or employee position. Therefore, it seems to be important that the environmental strategy is communicated throughout the company.

Pilkington in Halmstad act as a small producer in a global corporation and the strategies and policies that NSG formulates shall be applicable to a large number of actors within the group. This is one of the reasons to why actors that faces regulation stricter then the group policy as in Sweden tend to put more attention to the laws rather than the global policy. This also shows that the government can exert a great influence on the firm's environmental strategy, which in

turn also determine the level of competitiveness. Firms acting on the same market with different prerequisites can therefore get a competitive advantage. As an example, firms more affected by environmental regulations supposedly need to use more resources ensuring that such requirements are met while less regulated firms may focus on other improvements directly connected to economic gains.

At this moment, the biggest motivation factor for Pilkington to become more environmental is through economic gains. In other words, in order to make green investments it needs to have a beneficial pay off time and contribute to lowered costs. This finding suggests that the firm's proactiveness is related to improvements where Pilkington can benefit financially.

6.4 Implications

6.4.1 Theoretical implications

From a theoretical perspective our findings provide existing and future research with empirically data examining stakeholders' influence on firms' environmental strategy. Previous researchers have done similar research focusing on companies with high environmental impact such as paper-mill and chemical industries, while this study examines the float glass industry. This paper provides a perspective to companies acting in industries within the energy intensive industry. As the factors affecting the glass industry are similar to those in the energy intensive industry in general will the result be transferable to a extent that shows pattern and how to group the most relevant stakeholders.

Our thesis only scratches the surface of the research area but provides researchers with a perspective from the Swedish energy intensive industry, which suffers from strict regulations compared to other countries. Moreover, it gives a deeper understanding of how such industries are affected by their stakeholders in an environmental perspective. Sweden is far ahead in their environmental work, which makes this study's topic relevant for existing and future research. This thesis has examined the relationship between different stakeholders and the environmental strategy of the firm. It contributes to new generic knowledge by the exploitation of two main streams: stakeholder theory and environmental strategy. Further, this thesis has explained how stakeholders in the glass industry affect and how their influence contributes to a reactive or proactive environmental strategy. An important contribution of this thesis is that we have found that the people working in the company stands for a great deal of influence determining the stakeholders importance, something that has been included in this thesis and what also may provide directions for further research.

6.4.2 Practical implications

In addition to the theoretical contributions described, this thesis has provided new insights for practitioners by addressing the most important stakeholders that need to be considered in order to develop the environmental strategy of the firm more efficiently. By focusing on the most important stakeholders for the firm's environmental strategy, it is possible to use resources in a more efficient manner. When the main stakeholders are identified, firms can

ensure that their interests are met and that their involvement results in an environmental strategy that is of interest for both the stakeholder and the firm.

After reading our thesis, managers should have more information about stakeholders influence on the environmental strategy and that stakeholders' role differs in importance at different positions within the firm.

6.5 Further Research

One of the limitations in this study is the choice of making a case study and it would therefore be of interest in the future to look on a larger sample and do a quantitative study. This could provide additional perspective to the frame of stakeholders found, to confirm or deny these findings.

One interesting finding is that people at different positions within the firm have different perceptions about the stakeholders as well as different stakeholders influence their work in different ways and to various extents. As an example, one interviewee experienced a lot of pressure from the government in the daily work while another felt no pressure. Moreover, this could be a future research area, focusing on and examine the correlation between stakeholder and employee position.

This research has examined stakeholders' influence upon the environmental strategy of the firm. However, the data also indicated that the firm's environmental strategy affects the stakeholder. By examining this relation in more depth, it could provide research with a deeper understanding in explaining how the firm's influence on stakeholders makes them adapt certain strategies.

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APPENDIX

1. Interview Guide

RQ: What are the main stakeholders and in what way do they affect the environmental strategy of the firm?

Presentation of the interviewee

- Name
- Position at Pilkington + years of employment
- Education

Part 1

Explanation of environmental strategy

Explanation of stakeholders

- Do you get in contact with environmental issues?
- If yes, in what way?
- To what extent?
- What environmental aspects do you need to consider?

- What stakeholders influence Pilkington's environmental strategy?
- What stakeholders influence your work?

Part 2 – Internal stakeholders

Top Management

- Does the top management influence Pilkington's environmental strategy?
- If yes, in what way?
- To what extent?

- How does it affect Pilkington's environmental goals?
- How do you see results of Pilkington's decisions concerning environmental questions?
- Does Pilkington see environmental work as a competitive advantage?

- Does top management affect your work? (question asked to people not in the top mgt)
- If yes, in what way?
- To what extent?

Employees

- Do employees influence Pilkington's environmental strategy?
- If yes, in what way?
- To what extent?

Shareholders

- Does NSG influence Pilkington's environmental strategy?
- If yes, in what way?

- To what extent?
- How do Pilkington communicate with NSG when it comes to environmental questions?
- What demands is NSG putting on Pilkington?
- How do Pilkington handle these demands?
- Does NSG influence your work (from an environmental perspective)?
- If yes, in what way?
- To what extent?

Part 3 – External stakeholders

Customer

- Does the customer influence Pilkington’s environmental strategy?
- If yes, in what way?
- To what extent?
- What demands is the customer putting on Pilkington? (e.g. ISO 14001)
- What does the customer value? (e.g. price, quality, energy efficient etc)
- How do Pilkington handle these demands?
- Does the customer influence your work (from an environmental perspective)?
- If yes, in what way?
- To what extent?

Society

- Does the society influence Pilkington’s environmental strategy?
- If yes, in what way?
- To what extent?
- Are people living near by for example complaining on smell, noise, emissions etc?
- What demands is the society putting on Pilkington?
- How does Pilkington handle these demands?
- Does the society influence your work (from an environmental perspective)?
- If yes, in what way?
- To what extent?

Media

- Does media influence Pilkington’s environmental strategy?
- If yes, in what way?
- To what extent?
- How is Pilkington affected by publicity in radio and newspapers?
- How does Pilkington handle this?
- Does media influence your work (from an environmental perspective)?
- If yes, in what way?

- To what extent?

Suppliers

- Do suppliers influence Pilkington's environmental strategy?
- If yes, in what way?
- To what extent?
- What determines the choice of supplier? (e.g. price, environmental impact, quality etc)
- What demands are the suppliers putting on Pilkington?
- How does Pilkington handle these demands?
- Are the suppliers affecting your work (from an environmental perspective)?
- If yes, in what way?
- To what extent?

Government

- Does the government influence Pilkington's environmental strategy?
- If yes, in what way?
- To what extent?
- How does Pilkington work to keep up-to-date about laws and regulations from the government?
- What demands is the government putting on Pilkington?
- How does Pilkington handle these demands?
- Does the government influence your work (from an environmental perspective)?
- If yes, in what way?
- To what extent?

NGO's

- Do NGO's influence Pilkington's environmental strategy? (e.g. Greenpeace)
- If yes, in what way?
- To what extent?

Part 4 - Other

Politicians

Universities

Competitors

Partners

Consumers

Banks

Insurance companies

Is there anything else that you would like to add?

2. Questionnaire

1. What stakeholder do you consider having the greatest influence on Pilkington's environmental strategy? Rate the stakeholders' influence. 1- least, 6- highest.

Customers	—
Suppliers	—
Government	—
Top management	—
Society	—
Media	—
Shareholders (NSG)	—
NGO's	—
Employees	—

2. What stakeholder do you consider is the most important for Pilkington's environmental strategy? Rate the stakeholders' importance. 1- least, 6 - most.

Customers	—
Suppliers	—
Government	—
Top management	—
Society	—
Media	—
Shareholders (NSG)	—
NGO's	—
Employees	—

3. What stakeholder has the highest influence on your job?
Rate the stakeholders' influence. 1 – least, 6 – highest.

Customers	—
Suppliers	—
Government	—
Top management	—
Society	—
Media	—
Shareholders (NSG)	—
NGO's	—
Employees	—

4. What interest do you have for environmental issues? Rate (1 – low, 6 – high)

5. How would you rate your knowledge about environmental issues? Rate (1 – little, 6 – much)

Thank you for your participation!