

From the captains of industry to the trustees of sustainability

The positioning of the large family-owned companies' core values regarding the Green Deal for Europe's decarbonization goals

Boris Matijas

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Abstract: 367 words

Significant behavioral changes will need to be implemented to prevent the energy supply sector from tripling CO₂ emissions by the midcentury. However, within the academic research, behavior changes remain primarily focused on the individual level, while the behavior of companies that are responsible for elevated greenhouse gas emissions falls behind.

This master's thesis analyses the core values of large European family-owned companies and cross-references them to their CO₂ emissions and energy consumption reports. It does so by following the findings from environmental psychology, which indicate that on the individual level, the self-transcending values lead to better pro-environmental behavior. Additionally, the research analyses the corporate mission statements, the UN Paris Agreement pledge, and the companies' highest rankings officials' statements as the indicators of their corporate environmental beliefs. This is done within the frame of the Green Deal for Europe's aspiration to decarbonize the economy, and following the intention to define the large family-owned companies' initial stance regarding the governance that is required for achieving it.

The results obtained indicate that, when compared to self-enhancing values, the self-transcending family-owned companies' core values lead to a greater tendency to reduce CO₂ emissions and energy consumption. At the same time, these tend to a greater use of renewable energies. This indicates that the internalization of self-transcending values facilitates environmental governance and has the potential to steer the business strategy towards a shift in behavior that is needed to accomplish the decarbonization goals defined by the Green Deal for Europe. Additionally, the research shows differences in behavior among different combinations of self-transcending and self-enhancing values and indicates that different combinations provide elements for sustainability to be considered a competitive advantage.

Family-owned companies are here considered decision-making units, which, like individuals, require incentives to behave pro-environmentally. The analysis of different positions within the environmentalities framework (political ecology) allows business and policy decision-makers to reflect on additional incentives to stimulate companies' environmental behavior and to expand the scope of incentives beyond the strictly economic ones. Understanding mutual initial stands and motivation is fundamental. Values, understood as desirable goals that motivate action, are the first step in the process of mapping out future relations to manage change towards a higher pro-environmental behavior among family-owned companies.

Keywords: core values, family-owned companies, Green Deal for Europe, environmental psychology, political ecology, environmental governmentality

Word count (thesis): 11.992

"Try not to become a man of success but rather try to become a man of value. He is considered successful in our day, who gets more out of life than he puts in. But a man of value will give more than he receives". Albert Einstein

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Active Hope!

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List of acronyms

CO₂ – Carbon dioxide

CSR – Corporate Social Responsibility

EU - European Union

EM – Ecological Modernization

FOC - Family Owned Company

GDE - Green Deal for Europe

GDP - Gross Domestic Product

GHG – Greenhouse gas

IPCC - Intergovernmental Panel on Climate Change

NEP – New Ecological Paradigm

RQ – Research question

SDG – Sustainable Development Goals

VBN – Values Beliefs Norms

1 Introduction

1.1 Stakeholders of the Green Deal for Europe

The European Union has recently announced an ambitious goal of making Europe the first climate-neutral continent (von der Leyen, 2019). It plans to do so through the implementation of the Green Deal for Europe (GDE), which is aimed to lead towards a 'European Climate Law' (European Commission, 2020). This is expected to become one of the “most innovative legal regimes ever seriously proposed in the history of environmental law” (Muinzer, 2019, p.1). At the same time, it is being strategically central to the implementation of the targets defined at the EU level and the implementation of EU SDG Strategy and plans to bring the most relevant stakeholders into action (European Commission, 2019a). With an estimated economic impact of 60% on the European GDP (European Commission, 2019c), family-owned companies (FOC) should be considered as relevant stakeholders. Their more significant commitment may facilitate the implementation of the GDE.

Through values-belief-norms (VBN) theory and Foucault's multiple governmentalities, adapted to environmentalism (Fletcher, 2010), this thesis focuses on a path through which the implementation of the Green Deal for Europe may be facilitated by a) understanding the relationship between the reported core values and environmental behavior of the largest family-owned companies; and b) defining the stakeholders' position within the environmentalites framework (Fletcher, 2010). It aims to do so by analyzing the self-reported core values of the 19 largest EU family-owned companies and classifying them under the categories that are relevant to pro-environmental behavior. Following, it compares these results to each company's CO₂ emissions, energy consumption, and renewable energies use, as well as their stand regarding environmental norms and beliefs, as the indicators that predict environmental behavior.

1.2 Research aim and questions

This master's thesis determines the positioning of the largest European family-owned companies regarding the economic and industrial decarbonization goals, defined by the Green Deal for Europe. It does so by answering the following research questions:

RQ1: How do the self-transcending and self-enhancing reported core values influence the largest European family-owned companies' pro-environmental behavior?

RQ2: From the environmentalities perspective, how does the pro-environmental behavior position these companies concerning the Green Deal for Europe's governance?

1.3 Contribution to Sustainability Science

While alerting that the direct CO₂ emissions from the energy supply sector are expected to triple by the mid-XXI century, in its latest Special Report on Climate Change, IPCC (2018) asserted the need for large-scale changes in energy systems. At the same time, and due to their significant impact on energy use and associated emissions, behavior changes were addressed as well (IPCC, 2018). However, within the academic research, the behavior changes remain mainly focused on the individual level, while the research on the companies' environmental behavior falls behind. A simple illustration of this is the comparison of the following search strings ran on Mendeley.com.

- individual behavior AND environment: 20,095 results
- corporate behavior AND environment: 2,090 results
- company behavior AND environment: 2,796 results

This research is important for the political and business decision-makers because its results indicate that specific core values lead to better pro-environmental behavior, which is expressed through large family-owned companies' CO₂ emissions and energy consumption. This way, achieving environmental goals gets integrated into companies' strategies, and environmental governance is facilitated through locating companies' within the environmentalities framework. Furthermore, their pro-environmental behavior may guide other, smaller size, FOCs to follow the goals of the Green Deal for Europe.

1.4 Socio-economic importance of family-owned companies

Being family-owned is considered any company where "the majority of decision-making rights are in the possession of the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children's direct heirs." (European Commission, 2020b). Combined, small, medium, and large size family-owned companies represent the predominant form of the business organization globally (Sharma, Chrisman & Gersick, 2012). Their focus on long-term generational success, instead of short-term profits, turns the present generation in power into "momentary caretaker of the company who has the responsibility of maintaining and further developing the enterprise for the following generation" (Mandl, 2008, p.57). This underpins one of the main differences when compared to non-family-owned companies where present management often focuses mainly on the sustainability of the business during its time in power (Mandl, 2008).

While, from the historical perspective, it appears that "nothing beats family enterprise for nurturing entrepreneurs and developing new business models" (Landes, 2006, p.xvi), their significance goes

beyond their economic impact (European Parliament, 2015). These companies are strongly rooted in their location (European Parliament, 2015) and derive their strengths from the local communities, which, in return, provide for their development and viability (Mandl, 2008). Nevertheless, despite their role being recognized as important, in the EU economy, "policymakers pay them scant attention" (European Parliament, 2015, p.12).

2 Theory and background

2.1 Values and pro-environmental behavior

According to Schwartz (2012), the use of values is twofold. On the one hand, they are used to characterize cultural groups, societies, and individuals, while on the other, they explain the motivational bases of attitudes and behavior over time (Schwartz, 2012). In an overview of his theory, Schwartz (2012) summarizes values as a) beliefs strongly related to affect; b) desirable goals that motivate action; c) abstract goals unrelated to actions and situations d) indicators of standards or criteria, and e) different from norms and attitudes.

While this summary englobes all values, some features distinguish one from another. These distinctive features are associated with the type of goal or motivation that each value expresses. It constitutes the theory of fundamental values which defines ten broad values (see Figure 1) according to the motivation that lies at the core of each of them (Schwartz, 2012). What makes these categories universal is their rooting in one or more of the following universal needs of human existence: a) human biological needs; b) social interaction; and c) group's survival and welfare (Schwartz, 2012).

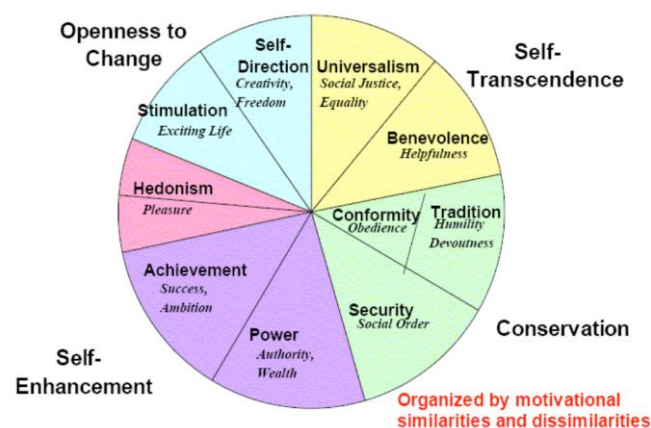


Figure 1. The theoretical model of relations among ten motivational types of values (Copyright 2006, Schwartz)

Additional to their identification, the theory provides the visualization of dynamics that interact among the types. As seen in Figure 1, the closer any two values stand anywhere around the circle, the more similar they are considering their basic motivations. At the same time, the distance from each other makes their underlying motivations opposite (Schwartz, 2006)

Values affect the strength of goals in a determined situation (Steg, Bolderdijk, Keizer & Perlaviciute, 2014) and, by doing so, influence the availability and consequences of behavioral options. In other words, values affect the preferences and choices we all have and make (deGroot & Steg 2008; Steg et al., 2014). Furthermore, values activate personal norms (Stern, Dietz, Abel, Guagnano & Kalof, 1999; Steg, Dreijerink & Abrahamse, 2005). By initiating a process of norm activation, and a sense of moral obligation to act upon them (Schwartz, 1977), values influence human behavior. This is central to the value-belief-norm (VBN) theory of environmentalism (Stern et al., 1999; Stern, 2000).

According to the findings of the research where VBN theory had been applied (Stern, Kalof, Dietz & Guagnano, 1995; Schultz, Gouveia & Franěk, 2005; Steg et al., 2005; De Groot & Steg, 2008) values influence the way and the extent to which people become aware of the negative consequences of behavior that leads to environmental degradation. Building upon Schwartz's theory, the VBN research (Stern et al., 1995; Karp 1996; Stern et al., 1999) isolated three value orientations that were relevant to pro-environmental behavior. According to Stern, Dietz, and Kalof (1993), these are self-interest, altruism towards other humans, and altruism towards other species and the biosphere. The later application of an adapted value instrument provided further results to support the reliability and validity of these categories (de Groot & Steg, 2008).

Among the main findings of VBN theory is the causality that shows how the stronger biospheric and/or altruistic values lead to higher environmental problem awareness, while the more egoistic values lead to the opposite. This causality makes values fundamental for the studying of the consequences of environmental behavior (Steg et al., 2005; De Groot & Steg, 2008; Steg et al., 2014) and its findings imply that "increases in environmental knowledge will gain motivational force only if people consider protecting the environment to be an important personal value" (Steg et al., 2014, p.108).

2.2 Values and sustainability in the family-owned companies

Values lead culture members in organizations to rely on particular sources of guidance in making sense of the world around them (Smith, Peterson & Schwartz, 2002). They give priority to specific types of behavior manifested in each organization (Stoner, 1989). This behavior is closely linked to ethical values that are rooted in each organization's culture and constitute the drivers of ethical and unethical

behavior (Grojean, Resick, Dickson & Smith, 2004). In other words, values are elements of 'collective programming of the mind' (Hofstede cited in Smith et al., 2002).

For the family-owned companies, the most important unit of time is not one year but one generation and therefore have a strong focus on assuring the sustainable generational transition (Simon, 2010). In this process, values play an essential role and are often explicitly or implicitly communicated towards stakeholders and provide support to the long-term vision, which contributes to the company's survival over decades (Mandl, 2008). Values are of vital importance for family-owned companies (Aronoff & Ward, 2011), because, while shaping the corporate culture, they provide insights that explain their behavior.

From the sustainability perspective, research shows that when FOCs recognize an environmental problem, their socio-emotional values trigger the transition to a more sustainable method (Zellweger, Nason, Nordqvist & Brush, 2013). When compared to non-family ones, FOCs show higher levels of investments in proactive environmental practices (Delmas and Gergaud, 2014; Berrone, Cruz, Gomez-Mejia & Larraza-Kintana, 2010). One example comes from the tendency manifested among family-owned companies operating in polluting industries. As reported (Berrone et al., 2010), these companies emit fewer contaminants due to the effort to enhance the family's image and do so even without tangible economic benefits derived from adopting such behavior. At the same time, some of their intrinsic characteristics position them well to face the challenges posed by the new environmental scenarios (Nuñez-Cacho, Corpas-Iglesias, Molina-Moreno & Cortés-García, 2018). Family-owned companies have a unique perspective of socially responsible behavior due to family involvement and ties to the community (Niehm, Swinney & Miller., 2008). This tends to be due to the concern for corporate-reputation, which leads the family to pursue non-financial aspects that, at the same time, meet the family's affective needs (Zellweger et al., 2013).

What is particularly crucial for this research is the fact that in family-owned companies, governance, culture, and control over the strategy are defined by the values stated by the owning family (Tàpies & Ward, 2008). This gives the owning family a fundamental role in decision making and in the definition of future business strategies and operations. Hence, despite their organizational complexity, in large family businesses, it is the owning family that plays a decisive role as a decision-making unit. This facilitates the negotiating process by narrowing the number of actors with decision-making power.

2.3 Value(s) of the Green Deal

In its communication, addressed to the EU's Parliament and the Union's main legislative bodies, the EU Commission expressed confidence in the joint ability to "transform the EU's economy and society to put it on a more sustainable path" (European Commission, 2019a, p.2). The essential part of trust in reaching this goal is placed in the Green Deal for Europe, which represents an "integral part of the Commission's strategy to implement the United Nations 2030 Agenda and the sustainable development goals" (European Commission, 2019a, p.3). It is considered a 'growth strategy', decoupled from resource use, and aimed to transform the EU into a society free of GHG emissions in 2050 (European Commission, 2019a).

The Green Deal is aimed to lead towards a 'groundbreaking' (Muinzer, 2019) European Climate Law. However, at this stage, it is not a legally binding document, but a strategic framework aimed to steer Europe on the course of sustainable and inclusive growth (European Commission, 2019a). It focuses on the means to accelerate the economic and industrial transition by implementing climate-related policy instruments and increasing sustainable public and private investment (European Commission, 2019a).

2.4 Environmentalities framework

Through the application of energy decarbonization policies, some fundamental social and environmental questions are being addressed, and the "interdisciplinary field of political ecology has the capacity to address such questions" (Bridge, Barca, Özkaynak, Turhan & Wyeth, 2018, p.1). While understanding the power as a multidirectional and disperse phenomenon¹, the theoretical entry point of this thesis begins from placing the focus on the interaction between the large family-owned families' socio-economic power and the EU's institutions' authority to implement the Green Deal for Europe as a strategic tool for sustainable growth (European Commission, 2019a). It is at these intersections where individual and collective concerns meet in the search for answers and solutions for the environmental degradation caused by economic growth. It is here where, as Luke (2016) argues, the state and/or society face the political dilemmas in their moral understandings of the environment and where, according to Fletcher (2010), government is being understood as the art of exercising power through the economy. Green Deal for Europe represents a strategic tool aimed to use that power.

¹ Power is everywhere; not because it embraces everything, but because it comes from everywhere (translation of Foucault 2004, by Jessop, 2007)

The governance of climate change poses one of the most significant global challenges humanity has ever faced, and the solutions, as Hurrell and Kingsbury (in Lövbrand & Stripple, 2013) suggested, depend on the collective ability to achieve cooperation on the global scale, under conditions of fragmentation and conflict. The Green Deal for Europe carries a promise of such ability, and the application of the environmentalities provides an "analytical toolbox" (Stripple & Bulkeley, 2013, p.10) for achieving it.

The concept of environmentalities derives from Michel Foucault's 'multiple governmentalities' perspective which, through the work of Fletcher (2010; 2017) and others (Luke, 1998, 2016; Agrawal, 2005; Jessop, 2007; Stripple & Bulkeley, 2013), was used in the study of environmental politics. Although it has mostly been used in conservation policies, it has also been applied in the analysis of institutional and teaching practices (Lloro-Bidart, 2017), as well as wind-farm development (Jepson, Brannstrom, & Persons, 2012,) and mapping complexity (Fletcher, 2019). It emerged within the complex process of conversations among different strands of social theory in the search for the answer to the "deceptively simple question of how to make political sense of climate change" (Stripple & Bulkeley, 2013, p.8). In this endeavor, it deals with how particular 'mentalities' operate in the process of governing while being conceived both as a "particular modality of power with particular contemporary significance" and as a "perspective or analytical tool through which to view power in general" (Stripple & Bulkeley, 2013, p.8).

This framework enables the awareness of "changing discursive productions of a warming world and their effects in mitigating or adapting to that world" (Stripple & Bulkeley, 2013, p.10) and embodies four different types. These are resumed by Fletcher (2010) as:

1. Disciplinary form, in which subjects internalize particular norms and values and by doing so become compelled to self-regulate;
2. Sovereign form, where the threat of punishment manages obedience to the rules;
3. Neoliberal form, which modifies the system's variables instead of seeking 'the internal subjugation of individuals' (Foucault, in Fletcher, 2010); and
4. Truth governmentality, which, according to Foucault (Fletcher, 2010), is formed in relation to the order of the world.

These different environmentalities interact and challenge each other within an ongoing contest which Foucault identifies as politics (Fletcher, 2010)

3 Research design and methodology

3.1 Theoretical framework and analytical tools

Environmentally significant behavior can be defined as one that is conducted to benefit the environment (Stern, 2000). Having in mind that the individual choices made by environmentally-aware consumers are "no match for the forces of corporate capitalism pushing environmentally irresponsible consumption" (Dryzek, 2013, p.134), companies' behavior has a great overall impact on the environment. Their relation is defined within the boundaries of economic rationalism where economic actors appear both as consumers and producers. The use of VBN theory is hence appropriate in this thesis because, although producers are organized into companies, companies behave as individuals (Dryzek, 2013).

Following the conclusion that values influence decisions, and by doing so influence our pro-environmental behavior (Dietz & Shwom, 2005; Steg et al., 2014), this research method builds upon the value-belief-norm (VBN) theory of environmentalism (Stern, 2000; Stern et al., 1999), which suggests that values affect the extent to which people are aware of the negative consequences of environmentally-harmful behavior (Steg et al., 2014)

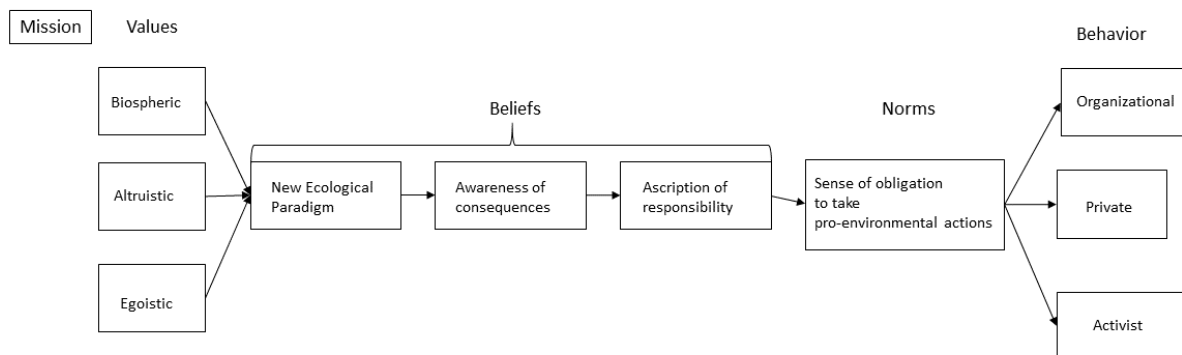


Figure 2. Value-belief-norm theory causal chain. Adapted from Steg, Dreijerink, and Abrahamse (2005). A mission statement communicates the organization's purpose. It steers the values towards the aims defined by the main stakeholders. Therefore, it is included here as an additional indicator of organizational behavior.

VBN theory (Figure 2) is considered to be the "best available explanatory account of a variety of behavioral indicators of environmentalism" (Stern et al., 1999, p.1). Compared to the individual one, behavior in organizations is additionally conditioned by contextual factors (Lülfes & Hahn, 2014). Having in mind that these factors include organizational culture, social norms, and peer pressure (Lülfes &

Hahn, 2014), this research additionally integrates mission statements and company leaders' statements as the indicators that trigger corporate behavior.

Given the fact that the aim of this research was not to analyze the details of the chain causality among different elements of VBN theory, but instead, the direct link between the core values and pro-environmental behavior, the data gathered for the indicators of eco-modernization paradigm, beliefs and norms was only used qualitatively to inform the discussion of environmentalities applied in the relation between the large family-owned companies and the GDE policy implementation.

Once the companies' classification by values was defined, and their environmental behavior was determined, environmentalities framework was applied in this research to analyze the particular environmentalities informing the large family-owned companies' positions concerning the decarbonization practices within the GDE context. Here, the literature was used to define each of the four environmentalities. This is done to establish the positions and differences that emerge among the companies, their relation to the goals of GDE, and the governance stand that EU institutions may adopt according to the results. The basis for the comparison were the results obtained from the values-behavior classification and their relation to the characteristics of each environmentality.

This analysis was approached from the same hope that Fletcher (2010) expressed in the framework's ability to define the parameters of various stakeholders' stands to provide a space for more effective communication "towards facilitating constructive collaboration in the interest of a sustainable future" (Fletcher, 2010, p.180). Given the socio-economic importance of the large family-owned companies, this methodology is aimed to facilitate a better understanding of large FOC's initial positions towards the faster transformation of the economy, with the final aim of climate neutrality (European Commission, 2019a).

Once this understanding is achieved, elements of 'regulatory and organizing actions' appear (Fletcher, 2010), and environmentalities may be used in the analysis of the process that facilitates the governance. This is achieved through understanding whether the large FOC's environmental guidance relies upon self-regulation (disciplinary), top-down state imposition (sovereign), market competition (neo-liberal) rules, or New Ecological World Order (truth environmentality). It allows to map-out the analytical process through which large, and eventually also smaller, family-owned companies may align with the decarbonization goals defined by the Green Deal for Europe. That is why FOCs are here considered as decision-making units and individual actors.

3.2 Data collection

All the data collected in this research comes from secondary sources. The data collection follows the multi-strategy research, which is commonly practiced in social science disciplines, mostly sociology, social psychology, management, and organizational behavior (Bryman, 2006). It is adapted to the different aspects of multi-strategy research typology defined by Bryman (2006, p.98) and provides that:

- quantitative and qualitative data are collected sequentially;
- quantitative data has priority over the qualitative one;
- explanation guides quantitative while exploration qualitative data;
- both follow all stages of research question formulation with qualitative data being additionally consulted in the discussion;
- data being provided from several strands associated with the same sources.

As suggested by Kuhn (cited in Jonsen, Galunic, Weeks & Braga, 2015, p.335), “company documents help to understand particular problems and prescribe appropriate behaviors for the different ways of doing things in organizations”. These are used in this research process to observe how the mission aligned with values leads to pro-environmental behavior, whose indicators, in this case, are CO2 emissions, energy consumption, and renewable energy use.

While there are many other indicators of companies' pro-environmental behavior (i.e., recycling, reforestation, water use, etc.), this thesis focuses on CO2 emissions and energy consumption because of a) their overall impact on climate change and b) because "decarbonising the energy system is critical to reaching climate objectives in 2030 and 2050" (European Commission, 2019). The method applied (Jonsen et al. 2014; Kabanoff & Daly, 2000; Ceja, Agulles & Tàpies, 2011) in the data gathering is unobtrusive and provides that the information was not generated in response to a researcher's direction (Jonsen et al., 2014).

The goal was to test the hypothesis that the self-transcending values, guided by the mission that is clearly defined so it can be managed better (Campbell & Yeung, 1991), lead to a more pro-environmental behavior (Stern et al., 1999; Stern, 2000; Steg et al., 2014). From the governance perspective, values and mission are important in the environmental policies since changes in values are seen as leading to changes in decisions (Dietz & Shwom, 2005), while mission facilitates management (Campbell & Yeung, 1991).

The main justification for combining quantitative and qualitative research in this thesis lies within the complementarity, which "seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from another" (Greene cited in Bryman, 2006, p.105). Therefore, following the Campden Family Business (See Appendices) list of the largest European family-owned companies, 50 family-owned companies' corporate web sites have been initially analyzed, to gather the information on:

1. Corporate core values.
2. Statement of mission.
3. Pledge or commitment to the UN Paris Agreement.
4. CO2 Emissions.
5. Energy consumption.
6. Amount of renewable energies deployed.
7. Beliefs (eco-modernization paradigm, the ascription of responsibility and awareness of consequences).

3.2.1 Values

The main focus on values in this research has been placed upon their important social function in motivation and control of the group members' behavior (Parsons, 1951). In the first step, the computing of the family-owned companies reported core values was conducted using the typology of values developed by Schwartz. This method provides the mapping of behavioral values and their division into value types and clusters (Stern et al., 1999). This typology was used as the base for environmental research (Stern et al., 1995; Stern et al., 1999; Karp 1996), which led to the 'value orientations' (Stern, 2000) or types of values relevant to environmentalism. The main distinction is attained within the notion that self-transcendence places personal focus outwards, towards the interests of others and the environment, while the self-enhancement places it inwards, towards self-interests (Bouman, Steg & Kiers, 2018). In other words, the self-transcending values are typically positively related to pro-environmental beliefs and behaviors, while the self-enhancing ones are considered negatively related (Bouman et al., 2018).

In the first step of identification, all the reported core values were extracted from the companies' web sites. These were accounted for and identified following Schwartz's (2006) division of values by motivational categories and value types (Table 1). In the second step, built upon Schwartz's typology, values were divided into four categories: self-transcending, self-enhancing, combined and other

categories. In this step, the values were grouped into one of the four type clusters (Table 3). The same method was applied to define the Green Deal for Europe's values (Table 4).

Table 1. Values divided by motivational categories and type (Schwartz, 1992). The table on the left shows motivational categories and values types that are relevant to environmental behavior. The table to the right shows the ones that are not relevant.

Motivational category	Value type	Categories relevant to environmentalism	Categories not relevant to environmentalism	Motivational category	Value type
Benevolence (BE)	Helpful Honest Forgiving Loyal Responsible A spiritual life True friendship Mature love Meaning in life	Self-Transcending values	Other values	Stimulation (ST)	Daring A varied life An exciting life
Universalism (UN)	Protecting the environment Unity with nature A world of beauty Broad-minded Social justice Wisdom Equality A world at peace Inner harmony			Self-direction (SD)	Curious Creativity Freedom Choosing own goals Idependent Self-respect
Hedonism (HE)	Pleasure Enjoying life	Self-Enhancing values		Tradition (TR)	Accepting my portion in life Devout Humble Respect for tradition Moderate Detachment
Achievement (AC)	Successful Capable Ambitious Influential Intelligent			Conformity (CO)	Obedient Honoring of parents and elders Politeness Self-discipline
Power (PO)	Social power Authority Wealth Preserving public image Social recognition			Security (SE)	Clean National security Reciprocation of favors Social order Family security Sense of belonging Healthy

Once the selection and accounting were concluded and values divided by categories relevant to environmentalism, Bouman et al.'s (2018) method (Table 2) for measuring the values related to environmental behaviors and beliefs were consulted. This method is based on the conclusion that people who "strongly endorse biospheric and altruistic values typically act more pro-environmentally and hold stronger pro-environmental beliefs, whereas those who strongly endorse egoistic and hedonic values are less inclined to do and think so" (Bouman et al., 2018, p.3). Hence, in this research,

those reported core values that corresponded to the description that is summed in Table 2 were identified and accounted under the biospheric, altruistic, hedonic, or egoistic category. The values that were not relevant to environmentalism were sorted under the 'Others' group. However, it is important to underline that all companies have reported a combination of different values. In this research, the relevance to environmentalism was the primary criteria and, therefore, in the results, it is the presence (or the absence) of these that determines the group under which each company folds under.

Table 2. Method for positioning values in Environmental Research. Adapted from Bouman et al. (2018)

Category relevant to environmentalism	Values related to environmental behaviors	Characteristics	Relation to pro-environmental behavior
Self-transcending values	Biospheric	Protecting natural resources Preserving nature Harmony with other species Unity with nature	Positive relation
	Altruistic	Equal opportunity for all Caring for social justice World at peace Working for the welfare of others	
Self-enhancing values	Hedonic	Pleasure and gratification of desire Enjoying life Doing pleasant things	Negative relation
	Egoistic	Control and dominance over others Authority and the right to lead/command Having an impact on people and events Seeking material possessions and money Being hardworking and ambitious	

3.2.2 Mission

Mission influences corporate strategy and is perceived as the first step in strategic management with a purpose to answer two fundamental questions: 'what is our business and what should it be?' (Campbell & Yeung, 1991). In order to trace elements of pro-environmental concern in their mission, companies' statements were extracted from each FOC's corporate web site. Those companies whose statements of mission expressed environmental and/or sustainable concerns were separated from those whose statements of the mission did not contain them.

3.2.3 Beliefs

While values represent the guiding principles in life, beliefs represent ideas about 'how true it is that things are related in particular ways' and 'refer to the subjective probability' (Schwartz, 2012, p.16). Since they do not relate to the importance of goals as guiding principles in life (which is the role of values), they are less stable than values (Schwartz, 2012).

In this research, indicators of the eco-modernization paradigm and those informing on the ascription of responsibility and awareness of consequences were gathered from the public statements made by companies' highest-ranking executive officers. The search was used to scan the corporate web site and Google search engine. The statements gathered were used as qualitative information meant strictly to inform the discussion of environmentalities applied in the relation between the large family-owned companies and the GDE policy implementation. They were not considered as part of the causal link between values and behavior.

3.2.3.1 Ecological modernization worldview

Environmental behavior is a result of specific worldviews (Steg et al., 2005). However, worldviews are less general and, same as beliefs, less stable than values. They deal with a specific domain of life and can be challenged in terms of their veracity (Stern et al., 1995). In the field of environmental policymaking, ecological modernization (EM) is considered a new environmental paradigm (Berger, Flynn, Hines & Johns, 2001; Pataki, 2009; Landrum & Ohsowski, 2018).

For this reason, this thesis uses ecological modernization theory as the indicator of the new ecological paradigm (NEP) among the large-family owned companies. The NEP is here considered as "a sort of 'folk' ecological theory from which beliefs about the adverse consequences of environmental changes can be deduced" (Stern, 2000, p.413).

In order to grade the worldview among different companies' critical political ecology view, Warner's (2010) division has been adopted. The criteria used to assign value regarding the eco-modernization paradigm was Warner's notion of eco-politics of change (2010).

- a. Variable 1: Weak eco modernization: "a process in which material environmental progress comes from more economically efficient use of natural inputs and reduction of negative outputs" (Warner, 2010, p.540).

- b. Variable 2: Strong eco modernization: a process in which the “ultimate purpose and character of the modernization process is thrown into question and transformative change becomes a quality of the modernization process itself” (Warner, 2010, p.540).

3.2.3.2 Awareness of consequences and ascription of responsibility

For the indicators of environmental belief, the awareness of consequences and the ascription of responsibility were used. In order to locate them, the considerations were designed to identify the companies' leaders' beliefs regarding the consequences of consumerism and the responsibility the companies they represent have regarding global warming. The internet search using the string:

(CEO/Highest ranking officer's name) AND environmental OR fossil fuels OR climate change OR global warming OR energy OR consume;

was conducted in search of statements of companies' leaders that associate to any of the considerations contained in the Appendices; additional information for 3.2.3.2 Awareness of consequences and ascription of responsibility.

3.2.4 Norms

“Norms are standards or rules that tell members of a group or society how they should behave” (Schwartz, 2012. P.16). They represent the consent on how things should be done properly and, in that sense, Paris Agreement, as a norm, is being considered the new international legal regime aimed at strengthening the global response to climate change (Horowitz, 2016). It is recognized as a norm by numerous companies and institutions worldwide that joined the Paris Pledge for Action with the goal of “meeting and exceeding the ambition of governments to keep the world on a trajectory that limits the global warming temperature rise to less than 2 degrees Celsius” (Cambridge Institute for Sustainability Leadership, 2016).

At the same time, it is the first universal agreement intended to create a global regime for dealing with GHG emissions and climate change (Barston, 2019), which makes it a universal indicator of a pro-environmental norm that commits to taking pro-environmental action. The Green Deal for Europe is considered a commitment to the formal political-legal EU ambition with the international Paris Agreement (Muinzer, 2019). Therefore, the commitment to the agreement is being used here as the norm indicator, leading to a sense of obligation to implement pro-environmental practices. Cambridge Institute for Sustainability Leadership's (2016) website contains the names of all the companies, administrations, and institutions that joined the Paris Agreement pledge and was used in this recount.

3.2.5 Behavior indicators

When companies' environmental behavior, within the Green Deal for Europe parameters, was analyzed the following set of indicators were used:

- Companies' reported CO2 emissions.
- Companies' reported energy consumption.
- Companies' renewable energy employed.

3.2.5.1 CO2 emissions and energy consumption trends

The performance measures for CO2 emissions and energy consumption were used as the main indicators of companies' pro-environmental behavior. These are, at the same time, the main targets of the Green Deal for Europe's decarbonization strategy. Only those companies that had publicly available (Corporate Social Responsibility, Sustainability, and/or Non-financial reports) the data on the CO2 emissions and energy consumption trends and renewable energies use were included in the final sample. Given the lack of uniformity in the standards of reporting, the same period for which all of the companies had the information available was used. Therefore, the year 2016 has been established as a baseline year for data gathering.

Since most of the companies' reports cover up to two years of the fiscal exercise period, in many cases, data was extracted from two separate reports. Only the same data indicators were combined to assure the statistical coherency. The figure used in the results is the percentage difference between the data reported in 2016 and the one reported in 2018. The limited availability of standardized reports was overcome by focusing on the period for which all the companies' reports provided the necessary information. This period coincides with the first fiscal year after the Paris Agreement, which is 2016.

3.2.5.2 Renewable energy employed

The information on renewable energy was gathered from the annual CSR, sustainability, and/or non-financial statements. The data used in the thesis corresponds to the last exercise being reported.

3.3 Quantitative analysis

The quantitative analysis is directly related to the **RQ1**: How do the self-transcending and self-enhancing reported core values influence the largest European family-owned companies' pro-environmental behavior?

3.3.1 Values and mission

Following the procedure mentioned previously, the numerical values were assigned to the corresponding core values, and the mission statement was computed. Data extracted using this analysis was introduced into a new table where the companies that had their core values reported on their corporate web sites were separated from those that do not. This way, these are cataloged regarding the typology of the environmentally relevant core values under which they fold. For the compute of mission statement analysis, the process followed was the binary differentiation. The companies who had environmental and/or sustainability-related statements in their mission were attributed a (+) sign while those that did not were attributed a (-) sign.

3.3.2 CO2 emissions and energy consumption tendency

The percentage of tendency (decreasing or increasing) was established by comparing the amount of the CO2 emissions emitted and energy used in the year 2016 with the emissions/energy from the latest year available, which was 2018. This way, the percentage difference between the two numbers was established and assigned to the corresponding company. If the CO2 emissions/energy consumption showed a decreasing tendency, a value (-) was assigned in the corresponding column. If the CO2 emissions/energy consumption showed an increasing tendency, a value (+) was assigned. (See Appendices, Table 9)

3.3.3 Renewable energy employed

The data for renewable energy employed is a single value extracted from each company's latest Corporate Social Responsibility, Sustainability, and/or Non-financial report. It corresponds to the company's reported use of renewable energy.

3.3.4 Norms

Triplet differentiation was used to identify companies that pledged the UN Paris Agreement. Those FOCs that signed the pledge were marked by numerical value 1, those that issued a statement supporting the Agreements were marked 2. All the others were marked 0.

3.4 Qualitative analysis

The aim of this research was not directed to the correlation between different elements and components of the VBN theory. Instead, elements were used to inform if and how the worldviews, beliefs, and norms are formed among the large family-owned companies' leaders.

These are mostly presidents and/or chief executive officers and represent role models of appropriate behavior because their actions have a strong influence over the ethical conduct of employees (Andrews, 1989; Waters & Bird, 1987) and exercise the primary influence on individual ethical behavior (Falkenberg & Herremans, 1995). They have a fundamental role in the companies' structure of power; therefore, it is possible to assume that the worldviews, beliefs, and norms, which they publicly state, reflect the corporate ones.

The statements of different companies' highest-ranking officers matching the results of the search highlighted in the methodology section were compared to the considerations reported in the Appendices. Statements showing high resemblance to a single consideration were assigned the corresponding alpha-numerical marker. The results of this process were not treated as quantitative but as qualitative information, providing an empirical comparison for the discussion of environmentalities.

3.5 Environmentalities perspective

The environmentalities perspective is directly associated with the **RQ2**: From the environmentalities perspective; how do companies' pro-environmental behavior results position these concerning the Green Deal for Europe's governance? Once the degree of pro-environmental behavior was determined, the environmentalities framework was applied to inform the large family-owned companies' positions concerning appropriate governance within the GDE context. Following is a summary of elements that were used in the analysis.

3.5.1 Neoliberal environmentality

In an early work on environmentality, Luke (1995) explains governmentality as the application of techniques of instrumental rationality to the arts of everyday management. In this light, environmentality is understood as the ingraining of "instrumental rationalities in the policing of ecological spaces" (Luke, 1995, p.10). Through its exercise, the state and markets define relationship that humans are expected to maintain with the environment (Luke 1998). In his view, environmentality here results in the 'politicized nature' that 'embeds' the environment into the modern economies and, by doing so, shapes the human-nature relationships to "realize tomorrow's environmentally sustainable economy" (Luke 1995, p.20). When narrowed to the market, as the main regulatory framework, this very broad interpretation of environmentality adopts elements of neoliberal environmentality, which is defined by Fletcher as one that is seeking to govern via external incentives rather than internalized norms and values (Fletcher, 2010; 2017).

3.5.2 Disciplinary environmentality

Disciplinary environmentality is best understood as an “effort to create 'environmental subjects' through the diffusion of ethical norms” (Fletcher, 2010, p.177). Contrary to the neo-liberal one, it operates through the internalization of norms and values. It shows resemblance to Luke's (1999) description of green governmentality being 'the disciplinary articulations of sustainability and development' aimed towards establishing and enforcing "the right disposition of things" between humans and their environment' (Luke, 1999, p.146). However, its full notion gets articulated by Fletcher (2010), who underlines the 'internal subjugation of individuals' which operates principally through the internalization of social norms and ethical standards. Still, this internalization may also be induced out of subjects' fears of deviance and immorality (Fletcher, 2010), which they instinctively exercise both over themselves and their group.

While describing disciplinary environmentality as an internal mandate and neoliberal environmentality as an external one, Fletcher (2010) underlines the dependence of the last. He presents it as being reliant upon certain disciplinary techniques which are required to facilitate its operation and explains: “Disciplinary governmentality would be necessary to construct the rational actors upon which neoliberal governmentality would then operate by inculcating subjects’ self-perceptions as self-interested, competitive individuals” (Fletcher, 2010, p.176).

3.5.3 Sovereign environmentality

Sovereignty is commonly associated with a state’s power to govern a country (Oxford Dictionary, 2020). Still, the state is considered solely as the versatile effect of a regime of ‘multiple governmentalities’ (Foucault in Jessop, 2017). While, more broadly, it relates to a supreme power or authority, in Foucault's view, 'sovereign' power claims the right to 'take life or let live' (Fletcher, 2010, p.175). It does so, from the top-down approach, through the construction and enforcement of codified rules that seek obedience by direct threat of punishment (Fletcher, 2010).

From the environmental conservation point of view, Fletcher (2010) describes sovereign environmentality by using the 'fortress conservation' approach. Here, resource preservation is exercised through the 'fences and fines' strategy. In other words, it is a 'command-and-control' top-down governance, in which "state-centered protectionism is authorized as the defense of nature" (Fletcher, 2010, p.177).

3.5.4 Truth environmentality

The early development of the governmentality concept evolved within Foucault's 'sovereignty-discipline-government' triad (Fletcher, 2010, p.173). This fourth environmentality emerged aligned with Foucault's concept of 'art of government according to truth' (Fletcher, 2010). From the environmental perspective, it tends to ground environmentalism in traditional ecological knowledge or diverse expressions of spirituality (Fletcher, 2017)

What differentiates this from other environmentality is that the other three operate on principles of calculation and rationality, where rules, norms, and incentives induce behavior. Whereas, with the truth environmentality it aligns with the 'fundamental nature of life and the universe' (Fletcher, 2010).

3.6 Limitations and proposed improvements

The main limitations of this research are related to the availability and quality of the data. The fact that all the data gathered comes from the secondary sources poses a risk of the confirmation bias. Companies' reputation and competitive advantage are often closely related to their environmental performance. Hence, there is a risk of the reported corporate data being presented to support more positive findings. Without a centralized and independent source of measure for the indicators used in this research, these risks will remain a challenge. At the same time, the sample size (N=19) may appear statistically low, when the entire EU economy is considered. However, it is representative, given the specific size and ownership structure of the companies that have been analyzed. This sample represents nearly 20% of the large family-owned companies list elaborated by CampdenFB (See Appendices, Table 8). On the other hand, it represents over 6% of the largest European companies, both family and not family-owned ones (See Appendices, Table 12).

Other limitations come from the theory and methodology choices. These are mainly related to the lack of extensive literature and studies that combine VBN theory and environmental governmentality framework. During the thesis methodology design, a multi-level perspective, transition theory, and cluster theory were also considered. All these provide a better literature grounding. However, given the aim of this thesis, environmental psychology and political ecology provided a more solid methodological grounding to support the research questions.

Within this methodological choice, other methods were considered. Initially, the aim was to conduct surveying and/or interviewing process within the FOCs decision-making circles. These would ideally include FOCs from different sizes and generations in power and would center at the intersections between power and control processes as the constant interactions between the owning family and the

company's management. This method was aborted due to the scale it would require. Together with a more extended critique of the governmentality approach, this method would certainly be an improvement to consider in future research.

4 Results

4.1 Values recount

Out of the 50 family-owned companies whose web sites were initially analyzed, 19 were included in the final sample. The companies were not included in the final sample if they:

1. Did not have the core values stated on the corporate web site.
2. Did not provide information on their CO₂ emissions, energy consumption, and renewable energy use.

The corporate web sites of these companies provided all the data indicators required by the methodology. Table 3 presents the division of 19 companies included in the final sample and according to value type.

Table 3. Large family-owned companies divided by values typology. Includes different combinations of self-enhancing and self-transcending values, as well as other values that are not relevant to environmentalism.

N=19	Large family owned companies divided by values type	Number of companies corresponding to each values type	Percentage of companies corresponding to each values type
Self-transcending values	Altruistic (A)	1	5.3 %
	Biospheric (B)	1	5.3 %
	A + B	1	5.3 %
Self-enhancing values	Egoistic (E)	3	15.8 %
	Hedonic (H)	0	
	E + H	0	
Combined self-transcending and self-enhancing values	(A + E)	8	42.1 %
	(B + E)	2	10.5 %
	(A+B+E)	1	5.3 %
	A + H	0	
Other values	O	2	10.5 %

From the final sample (N=19), within the category of self-enhancing values, three companies (15.8%) have egoistic (E) among the values reported. None reported hedonic (H) ones. On the other hand, within the category of self-transforming values, one company reported altruistic (A), one company reported biospheric (B), and one the combination of altruistic and biospheric (AB) as core values. Therefore, it is the same amount of companies (3) that have reported self-transcending and self-enhancing values.

A majority of the companies have reported either different combinations of self-transcending and self-enhancing values or neither of each. Altruistic and egoistic (AE) was the most repeated combination. It was reported by eight companies, which is 42.1% of the entire sample. Among other combinations, two companies (10.5%) combined biospheric and egoistic (BE) and only one (5.3%) altruistic, biospheric and egoistic (ABE) values. This is the same combination of values, identified in this research (Table 4), in the Green Deal for Europe's communication (European Commission, 2019a). Within the sample, two correspond to the 'Other values' (O) group. These are the large FOCs whose reported values fold neither under the self-transcending nor self-enhancing values category.

Table 4. The list of Green Deal for Europe's values.

Category relevant to environmentalism	Value type related to environmental behavior	Characteristics
Self-transcending values	Biospheric	Protect, conserve and enhance the EU's natural capital
	Altruistic	Just Inclusive People first Collaboration
Self-enhancing values	Egoistic	Global leadership

4.1.1 Pro-environmental behavior by values

As a group and compared to other value type groups/clusters, the self-transcending value type group showed better performance in CO₂ emissions and renewable energies use (Table 5). In these categories, they were outperformed only by the altruistic-biospheric-egoistic (ABE) values type, which is only a part of the combined values group/cluster. Self-transcending values registered 84% mean of renewable energy deployed. In the case of CO₂ emissions, these values registered a 40% mean of emission reduction tendency. On the other hand, they reported 4.5% of energy use reduction mean.

When observed separately, altruistic (A) values reported increasing both CO2 emissions and energy consumption tendency, while the biospheric (B) and the combination of altruistic-biospheric (AB) values showed a decrease in both categories.

Since there were no hedonic (H) values reported, egoistic values are the only ones that constitute the self-enhancing values group. Same as in the case of the self-transcending values group, one company registered negative performance in CO2 emissions but, in this case, two performed negatively when energy consumption tendency is considered. Altogether, egoistic values performed better than the altruistic but worse than biospheric and altruistic-biospheric (AB) values. In the case of CO2 emissions reported, the mean corresponds to a 3.75% decrease. This is better than the altruistic (4.68% increase) but lower than the biospheric (11.78% decrease) and significantly lower than the altruistic-biospheric (AB) type. When the energy consumption reduction mean is calculated those companies that reported egoistic values registered negative tendency, resulting in 2.5% increasing mean value. At the same time, when renewable energy use is taken into account, this group performed significantly worse than the self-transcending one. In comparison, while the renewable energy use, registered among the self-transcending values, was nearly 90%, the self-enhancing values group registered over seven times less.

Table 5. Compute of quantitative results. Column 3 shows the number of companies that have environmental concerns stated in their corporate mission statement. Column 4 shows those that don't. Column 5 shows companies that pledged to the Paris Agreement. Column 6 shows companies that stated commitment to the Paris Agreement. Columns 7-12 show a number of companies that have increasing or decreasing CO2 and energy consumption tendencies. Red color marks the number of companies with the increasing CO2 and/or energy consumption (i.e. negative tendency) and if the CO2 emissions and/or energy consumption mean shows increasing tendency. The numerical value is the mean measure from all the companies constituting the same value type. Column 13 shows the percentage mean of renewable energy use.

1	2	3	4	5	6	7	8	9	10	11	12	13
Values categories divided by relevance to environmentalism	Large family owned companies divided by values type	Number of companies that integrate environmental concern in their mission	Number of companies that don't integrate environmental concern in their mission	Number of companies that signed the pledge to the Paris Agreement	Number of companies that stated commitment to the Paris Agreement	Number of companies with CO2 emissions decreasing tendency	Number of companies with CO2 emissions increasing tendency	CO2 reduction (mean)	Number of companies with energy use decreasing tendency	Number of companies with energy use increasing tendency	Energy consumption (mean)	Percentage of renewable energies used scale (mean)
	Altruistic (A) N=1		1				1	4,68%		1	0,08%	80%
Self-transcending values	Biospheric (B) N=1	1				1		11,76%	1		4,08%	85%
	A + B N=1		1			1		109,86%	1		9,31%	98,50%
	Egoistic (E) N=3	2	1			2	1	3,75%	1	2	2,50%	12,62%
Self-enhancing values	Hedonistic (H) N=0											
	E + H											
	(A + E) N=8	4	4		1	6	2	13,86%	4	4	3,87%	51,91%
	(B + E) N=2	2			1	1	1	0,39%		2	8,64%	0,11%
Combined	(A+B+E) N=1	1		1			1	22,78%	1		63,34%	100%
Other values	O N=2	1	1			2		12,15%	1	1	7,63%	50%

When compared to other combinations of self-transforming and self-enhancing values, the altruistic-egoistic (AE) values type shows the highest decreasing tendency in CO2 reduction. This is more than twice compared to the biospheric and egoistic type (BE) and significantly better than altruistic, biospheric, and egoistic values (ABE), which performed negatively. It also shows a stronger tendency in energy consumption reduction when compared to the biospheric-egoistic type (BE), but significantly lower than the combination altruistic, biospheric, and egoistic (ABE). The two companies who had neither self-transcending nor self-enhancing values reported (O), have shown a similar tendency in CO2 emissions as the altruistic-egoistic (AE), but their energy use tendency has been increasing.

When considered individually, the most pro-environmental behavior was registered by the company that combined both of the self-transcending values (AB). The following are two companies from (AE) values group. As a group, the worst performance was registered by the companies who reported the combination of biospheric and egoistic (BE) values. (See Appendices; Table 9 for individual companies' results).

4.2 Mission statement

Most of the large FOCs from this sample (11/19) have environmental concerns stated in their mission (Table 6). However, more statements are found among the self-enhancing than the self-transcending values group. Resumed by value types, those companies that fold under biospheric (B), biospheric-egoistic (BE), and altruistic-biospheric-egoistic (ABE) type have all included environmentality in their mission statements. This has not been the case among those FOCs that reported altruistic (A) and altruistic-biospheric (AB) values. On the other hand, half (4/8) of the altruistic-egoistic (AE) type have stated environmental concerns in their mission, as well as a half (1/2) of those under 'Other values' (O) group/cluster. When all the results are combined, it appears that having the environmental concern stated in the mission statement does not lead to positive pro-environmental performance. It was only in the case of two (2/19) FOCs that the environmental concern stated in the mission showed a positive correlation further along the chain of indicators. (See Appendices; Table 9; (LVMH and L'Oreal))

Table 6. Large family-owned companies' statements of mission recount cataloged by value categories/types and divided into those that include environmental concerns into their mission statement and others that don't.

Categories divided by relevance to environmentalism	Companies divided by values' categories	Number of companies per category	Include environmental concerns into their mission statement	Don't include environmental concerns into their mission statement
Self-transcending values	Biospheric (B)	1	1	0
	Altruistic (A)	1	0	1
	Altruistic-biospheric (AB)	1	0	1
Self-enhancing values	Egoistic (E)	3	2	1
Combined self-transcending and self-enhancing values	Biospheric-egoistic (BE)	2	2	0
	Altruistic-biospheric-egoistic (ABE)	1	1	0
	Altruistic-egoistic (AE)	8	4	4
Not relevant to environmentalism	Other values (O)	2	1	1

4.3 Norms

While the EU ensures that the Paris Agreement remains the main multilateral framework for tackling climate change (European Commission, 2019a), only one company from the altruistic and egoistic values (AE) type and one from biospheric and egoistic (BE) have stated commitment to the Paris Agreement. It was only the company that reported altruistic-biospheric-egoistic (ABE) combination of values the one (1/19) that had signed the pledge (See 3.2.4 Norms) to the Paris Agreement (See Appendices; Table 9).

4.4 Beliefs

4.4.1 Eco-modernization paradigm recount

Nearly one-third of all the companies from the sample (6/19) associate to a strong eco modernization paradigm (Table 7). It means that these companies pursue transformative potential as a quality beyond economic efficiency, which is a characteristic of weak eco-modernization. Among these, one is from

biospheric-egoistic (BE) type, three from altruistic-egoistic (AE), one from egoistic (E), and one from the altruistic-biospheric-egoistic (ABE) type.

Table 7. Large family-owned companies' orientation towards eco-modernization.

N=19	Large family owned companies divided by values type	Number of companies per type	Weak Eco Modernization	Strong Eco Modernization
Self-transcending values	Altruistic (A)	1	1	
	Biospheric (B)	1	1	
	A + B N=1	1	1	
Self-enhancing values	Egoistic (E)	3	2	1
	Hedonistic (H) N= 0			
	E + H			
Combined	(A + E)	8	5	3
	(B + E)	2	1	1
	(A+B+E)	1		1
	A + H			
Other values	O	2	2	

4.4.2 Awareness of consequences and ascription of responsibility

When ascription of responsibility is concerned, it was only one CEO's statement that was aligned with the belief that companies on their own cannot contribute to the decrease in global warming. This is a company with a combination of biospheric and egoistic values (BE). The majority (10/19) of companies' highest-ranking executive officers' public statements aligned with the belief that the actions taken by their companies contribute to global warming. At the same time, it was only the statement issued by the CEO of one company with the combination of altruistic-egoistic values (AE) that was associated with the belief that the company's contribution to global warming is negligible. In 7 out of 19 cases, there were no statements found.

In the case of the awareness of consequences, three (3/19) statements were associated with the belief that consumerism does not influence climate change. One company belongs to the egoistic (E) values type, one to the altruistic-egoistic (AE) and one to the 'Other values' (O). Four (4/19) of the statements were associated with the belief that consumerism does influence climate change. Two of these are the statements from the highest-ranking executive officer of the companies from the biospheric-egoistic

(BE) type and two from the altruistic-egoistic (AE) one. See the Appendices for the table and full text of statements.

4.5 Results related to the environmentalities framework

The positioning of the companies within the environmentalities framework (Figure 3) is based on; a) the behavior related to companies' value types, b) approximation from the analyses of the qualitative results c) the motivational sources of the guidance contained in the quantitative and qualitative results.

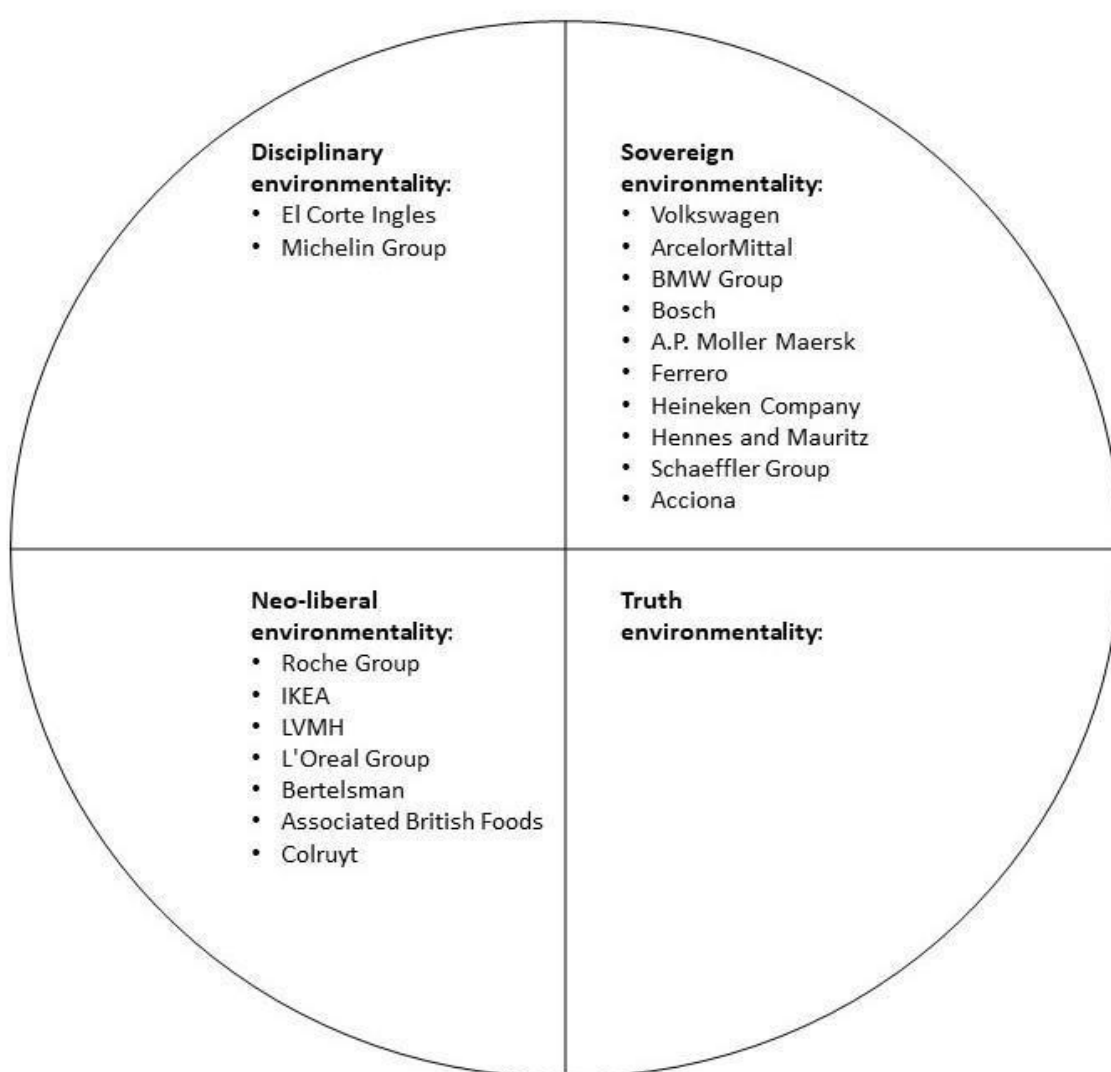


Figure 3. Large family-owned companies positioned according to the environmentalities framework. Positioning is relative to the guidance behind companies' environmental behavior. See Appendices; Table 9, for each company's behavior indicators.

4.5.1 Position relative to internal guidance

Overall, the behavioral results among those companies that fold under the self-transcending category show that values associated to greater environmental awareness performed better when behavior indicators considered than those belonging to the self-enhancing category. However, BMW (altruistic values) showed an increasing tendency in both CO₂ emissions and energy consumption. Therefore, it is only El Corte Ingles (altruistic-biospheric) and Michelin (biospheric) that fold under this category. These large FOCs show that the internalization of self-transcending values leads to better pro-environmental behavior and are therefore subject to disciplinary environmentality.

4.5.2 Position relative to top-down guidance

All the companies, to varying degrees, are subject to sovereign governmentality. However, those companies that show negative performance are farther from the EU's carbon neutrality goal. Thus these are more likely to be exposed to sanctions in the form of higher taxes and/or fines. The negative tendency performance suggests the need for legislative and other top-down mechanism approaches to be applied. It is hence associated with sovereign environmentality.

Within the sample, this corresponds to the company that reported altruistic (A) values, those companies that have combined biospheric-egoistic (BE), altruistic-biospheric-egoistic (ABE), and half of those under egoistic (E), 'Other values' (O) and altruistic-egoistic (AE) ones. Altogether, the companies positioned within the sovereign environmentality are 52.6% (10/19) of the entire sample.

4.5.3 Position relative to market guidance

Neoliberal laissez-faire principles dominate market mechanisms, and stakeholders are considered as “self-interested rational actors who respond first and foremost to economic incentives” (Fletcher, 2010, p.172). Neoliberalism redefines the relation between the state and the economy by relating the rationality of the government to the rational action of individuals, favoring the entrepreneurial and competitive behavior of economic-rational individuals and turning the responsibility for social risks into a problem of ‘self-care’ (Lemke 2001, p.200). It is guided by the rational evaluation of utilitarian reality according to (among others) a model of rationality provided by cost-benefit analysis (Pearce, Atkinson & Mourato, 2006) and eco-modernization paradigm.

In this sense, those companies that combine altruistic, considered transcendental values, with the egoistic ones, related to a more materialistic pursues of power and achievement, show elements of market induced motivation that goes beyond simple compliance to the state legislation. It shows that

their pro-environmental behavior not only complies with the state-imposed rules but also benefits their self-interest. Furthermore, most (4/7) of these companies adopt weak eco-modernization paradigm stand.

4.5.4 Position relative to truth guidance

No company from this sample has gathered the elements needed to be included in this category.

Acciona is the only company that has combined altruistic, biospheric, and egoistic (ABE), which is the same value combination related to the Green Deal of Europe. It adopts the strong eco modernization paradigm and is the only one that pledged to the Paris Agreement, which is being considered the new international legal regime aimed at strengthening the global response to climate change (Horowitz, 2016). Furthermore, this company manifests the best overall performance when behavior indicators considered and integrate environmental concern into its mission. All these elements combined should make Acciona the only company associated with the Foucauldian 'art of government according to truth' (Fletcher, 2010). However, due to the increasing CO2 tendency results, it folds under a sovereign environmentality group.

5 Discussion

The Green Deal for Europe is a valuable strategic framework for achieving the decarbonization of the EU economy. However, because the GDE implementation requires collective effort instead of spontaneity and ingenuity (Dryzek, 2013), a new mentality of power is needed to promote cooperation instead of competition. Understanding how the core values influence companies' actions is a solid point of departure.

This thesis aims to contribute to Sustainability Science by looking into particular sets of values that influence the large family-owned companies' pro-environmental behavior. By doing so, it determines if these are subject to internally or externally driven environmental governance. In other words, if their initial stand towards the defined goals is expected to be proactive or reactive.

5.1 Environmentalities perspective

Companies, the same as individuals (Burch & Harris, 2016), need incentives to behave pro-environmentally. The analysis of different positions within the environmentalities framework allows the EU's call to reflect on additional incentives to stimulate companies' environmental behavior and expand the scope of incentives beyond the strictly economic ones.

The expressed desire to transmit the company to the next generation is one of the main distinctive characteristics that define family-owned companies (Smyrniotis, Potziouris & Goel, 2013). However, in the case of this type of companies, besides the wealth, there are important social and emotional elements that are important parts of generational transmission. This also includes the notion of family generations being linked through the transmission of values, knowledge, skills, and ideas (Joshi, Dencker & Franz, 2011) and families having affective needs (Zellweger et al., 2013). The importance of these intangible aspects in family-owned companies' continuity is what makes disciplinary environmentalism particularly relevant to consider when designing environmental governance approaches to family-owned companies'.

5.1.1 Internalization of decarbonization goals

From the environmental perspective, when compared to the companies with reported self-enhancing values, the results from this research show that the internalization of self-transcending values leads to companies' better pro-environmental performance. This associates those large FOCs that reported the biospheric and altruistic-biospheric combination of values to the disciplinary environmentalism. It further indicates their openness towards the implementation of the GDE's decarbonization goals without further external guidance or additional vigilance and makes these companies more 'compelled to self-regulate' (Fletcher, 2017).

According to the results, these companies show a greater disposition to reach the decarbonization goal defined by the Green Deal for Europe, without additional external intervention. Therefore, these values provide a basis to facilitate environmental management framed by the GDE, and their internalization may be considered an alternative for those additional incentives, mentioned in 5.3. It indicates that the fulfillment of environmental goals may become a part of the business strategy and eventually turn its achievement into a sense of accomplishment.

This is different in the case of the companies that reported egoistic values. These values are related to a more materialistic pursuit of power and achievement. Therefore, they respond to market-driven motivation manifested through competition as a predominant form of behavior. As such, these companies entail neo-liberal mentality, which characteristically envisions a rational actor that seeks to maximize its material utility by assessing the costs and benefits of alternative courses of action (Fletcher, 2017). The vast majority of privately owned, market-oriented companies follow the intrinsic purpose of maximizing the profit to be economically sustainable. The fact that 14/19 of large family-owned companies in this sample reported present egoistic values indicates so.

However, this research shows differences in behavior among different combinations of self-transcending and self-enhancing values. Those companies that combine altruistic with the egoistic values show better performance than the ones that combine biospheric and egoistic. This may be explained through understanding that altruistic values are mainly associated with values considered beneficial for the common good (e.g., equality, social justice, a world at peace) (Bouman et al., 2018). As such, they are socially desirable and anticipate an incentive in terms of providing better market positioning and promotion of companies' products and services. Combined with egoistic values, which pursue individual and materialistic interests (e.g., wealth, social power, influence, ambition) (Bouman et al., 2018), this combination provides elements for competitive advantage.

This partly explains the negative pro-environmental behavior among the companies that combine biospheric and egoistic values. Biospheric values are directly associated with preventing pollution, protecting the environment, respecting nature, and unity with nature (Bouman et al., 2018). As such, and being considered motivational goals, they should lead to a more significant commitment and a more proactive approach to environmental behavior. However, the egoistic drive appears as a more potent pro-environmental driver among the altruistic than the biospheric values. This indicates that fulfilling the social, motivational goals is a stronger driver than it is meeting the environmental ones. Hence, the biospheric achievement puts less pressure to act pro-environmentally than the more socially induced altruistic values do.

5.1.2 Compete for less!

Neoliberalism rests upon freedom and rationality. Nevertheless, while absolute freedom is being claimed, according to Foucault, permanent 'vigilance, activity and intervention' are essential to the neoliberalist sense of free-market (Fletcher, 2010, p.3). It is so because, from the neoliberal governmentality perspective, the state is required to implement "the market's parameters, monitor its outcomes, and consequently adjust these parameters to achieve the most optimal results" (Fletcher, 2010, p.3). This partly explains why the environmental governance of 17/19 companies in this sample associate with either sovereign or neoliberal environmentality.

Although from today's perspective, it is difficult to find a positive correlation between the neoliberalism and environmentalism, it is important to remind that Foucault considered neoliberalism as "a possible vehicle for the exercise of biopower" (Fletcher, 2010, p.176), which is understood as the "exercise of power in the interest of nurturing and sustaining 'life' (Fletcher, 2010, p.176). Still, to get closer associated to environmentalism, neoliberalism would first need to be decoupled from the credo that "without the creative power of man's intelligence, raw materials remain just so many raw

materials" (Rand, 1967, p.12), which is the root of the egoistic pursuit of self-interest that has propelled the economic growth. The evaluation of these actions was rooted in the 'rational standard of value' (Rand, 1967) and was based upon the belief that the human intrinsic characteristic is our rationality. However, it ignored the fact that one cannot be rational without emotions (Lakoff, 2010).

Emotions play a central role in determining human behavior (Burch and Harris, 2016) and influence power relations. Without emotions, the rational faculty would be paralyzed because it would lack motivation; hence one would not know what to want (Lakoff, 2010). Values are an essential element in this process because they motivate action. Therefore, from the environmental perspective, what makes egoistic rationalism inadequate is the caution that "if everyone is a rational egoist, then the commons will always be abused, polluters will continue to generate externalities, and the government will do absolutely nothing to remedy the situation" (Dryzek, 2013, p.143).

Understanding values that drive companies' actions is a process that requires a systemic approach and circularity. Here, the stocks and flows are influenced by apparent contradictions. As discussed earlier, egoistic values lead to negative environmental behavior, and although in the case of the companies, energy-saving might be strictly associated with the egoistic pursuit of saving money, it still positively relates to pro-environmental behavior (Bouman et al., 2018). However, this inevitably presents the Jevons (1906) paradox situation, where more efficiency leads to more productivity, hence more natural resources being depleted.

The fact that most of the companies in this research combine the self-transcending and self-enhancing values shows that sustainability has elements of competitive advantage. Being rational actors, companies tend to regard the excess of energy consumption or CO₂ emissions more as inefficient management than the environmental hazard. Green Deal for Europe can use this as an advantage to provide a framework where companies would compete to emit less CO₂ and use less energy.

5.1.3 Make it a value proposition!

Eco-modernization (EM) is a dominant environmental paradigm within the economy. As such, it stands at the intersection between companies and the Green Deal for Europe's techno-managerial characteristics and is embedded in the EU's energy and environmental policies (Bridge et al., 2018). Ecological modernization theory emphasizes market-driven innovation as the basis for environmental improvement (Lynch-Wood & Williams, 2010). One of its main propositions is the confidence that material and energy streams can be decoupled without posing a threat to economic growth (Lynch-Wood & Williams, 2010). In other words, it suggests that more sustainable resource efficiency can

mitigate environmental problems, while at the same time maintaining the capitalist production and consumption system functioning (Zhu, Sarkis & Lai, 2012). It is considered a 'virtuous fusion' (MacNeil, 2017) of economic growth and environmental recovery that, according to some authors (Christoff 1996; Hajer, 1997), can be easier implemented in social democratic welfare states than in neoliberal ones.

MacNeil and Paterson (2012) call upon extensive literature to claim that EM practices are increasingly deployed in Europe and argue that the states that favor the implementation of EM are those which feature cooperative and corporatist political-economic systems. Accordingly, these are associated with a culture of cooperation among business, government, and environmental groups (MacNeil & Paterson, 2012). Within the EU's mixed model of the economy, where free market and social welfare are combined, the recently presented strategy behind the Green Deal for Europe holds more similarities to this culture.

This shows elements of administrative rationalism which "seeks to organize scientific and technical expertise into the bureaucratic hierarchy of the state" (Dryzek, 2013, p.88). Here, the top-down planning first centrally defines the targets and then determines the ways of accomplishment, while techno-managerial abilities are valued above else (Dryzek, 2013). Nevertheless, the transition towards a low-carbon economy is not simply a techno-managerial question. It also requires "creating the institutional rules and enabling environments that foster a change in values" (Burch & Harris, 2016, p.168)

From the sovereign environmentality perspective, the EU's quest for the 'additional incentives' (European Commission, 2019a) indicates that the Green Deal for Europe's governance is more inclined towards the same preference expressed in the British Petroleum's vice president statement: "We believe that the incentives are the right approach, as opposed to penalties." (Greg Coleman cited in Lowell, 2010, p.57). Given that the market conditions provide the opportunity for the large family-owned company to become a leader in the transition to a low-carbon economy, the question of incentive may also be contained in the stand that the government may pose to them: "Do you wish to be defensive or constructive" (Coleman cited in Lowell, 2010, p.69). One way of combining the incentive and punishment may be creating a well-publicized list of the biggest corporate greenhouse gas emitters (Dryzek, 2013) and energy consumers. This way, the competitive drive would pursue the egoistic goal of not being blacklisted and could drive positive corporate pro-environmental behavior.

Most of the companies, in this research, show elements of weak eco-modernization. Still, there are six (6/19) among them who go beyond economic efficiency and consider transformative change as a

“quality of the modernization process itself” (Warner, 2010, p.540). This way, the transformative change becomes an incentive to pursue. One of these companies has pledged to the Paris Agreement, believes that companies’ actions contribute to global warming, that consumerism influences climate change, it has environmental concerns stated in the mission, and performs better than most other companies in this sample, with the exception of CO2 emissions. This is Acciona, the only large family-owned company that combines altruistic, biospheric, and egoistic values, which is the same set of values behind the Green Deal for Europe.

The case of Acciona provides an opportunity to promote greater environmental ambition among the large family-owned companies. It has the potential to do so, not by bringing together the neoliberal and truth environmentalities through “the charismatic authority exercised by ‘conservation celebrities’ who champion environmental causes on behalf of BINGOs and their corporate partners” (Fletcher, 2010, p.177), but instead through joining the sovereign and truth environmentality. It may do so through the implementation of pragmatic moral principles where “managers can create better outcomes for their company and the environment in which it operates” (York, 2009, p.107). The similitude with this stand is expressed in the words of José Manuel Entrecanales (Acciona, 2019, p.6), Chairman of Acciona:

"Breaking the inertia of the fossil fuel-based production and consumption model that has been the cornerstone of a flourishing economy for decades is no easy task. Therefore, further attention must be drawn to the situation. Not only because of the risks entailed in a failure to act, but also because of the new and interesting opportunities that could be brought about by the change."

It is apparent that "businesses have a vital role to play in the sustainability transition" (European Commission, 2019, p.26). But an important part of the implementation of this transition relies upon the ability of policymakers and business decision-makers to collaborate and manage change. Understanding mutual initial stands and motivation is fundamental. The environmentality framework permits mapping out the relations to manage the transformative change which, among others, requires a shift in values, because;

"After all, sustainability is largely a value proposition: we make choices about how much climate risk we are willing to accept, what our notion of progress is, and what role the natural environment plays in our lives" (Burch & Harris, p.190)

5.2 From the captains of industry to the trustees of sustainability

In the political economy that was rooted in the first two industrial revolutions, the exploitation of natural resources was entrusted onto 'businessmen' as its 'most efficient trustees' (Rand, 1967). It was entrusted onto the entrepreneurs who were considered the main actors of the social system set upon the 'moral-political-economic principles' triad as its main principles (Rand, 1967). However, these ideas ignored the finite nature of natural resources and, above all, the devastating ecological impact that nowadays is being manifested by the anthropocentric influence on the planetary boundaries (Steffen et al., 2015).

Power and achievement cannot be studied without having in mind the circumstances that led to their manifestation. Hence, in this thesis, the political ecology theory was used to set the focus on the intersection between EU policymakers and large family-owned companies as business decision-makers. It was chosen because the problems of government are also the problems of economics (Hardin, 1998). This claim takes its origin from Joseph Schumpeter, who argued that economic analysis also applies to the government (Hardin, 1998) and whose theory of capitalism paid special attention to the entrepreneurs. To them, he referred to as the 'captains of industry' who, as principal agents of capitalist development, played a crucial role in the innovation (Bottomore, 1985).

It was these entrepreneurs and their families who had significant historical importance during the first two industrial revolutions (Tàpies, San Román & Gil López, 2014). Since then, they have undergone important processes of transformation, with professionalization being fundamental among them. During this process, the owners of these companies learned to delegate control over to the management while still retaining the power (Chandler, 1977). The crucial element of the power they retained has to do with shaping the company's mission and culture through family values (Tàpies & Ward, 2008). Throughout the previous industrial revolutions, this power has been efficiently placed in the service of economic growth. Today it needs to be refocused towards a collective effort of providing 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' (Bruntland, 1987)

5.3 Although Green; It's still a deal!

The Green Deal for Europe is considered an example of eco-socialism in practice with the potential of opening up a path to eco-socialist transition on a world scale (Schwartzman, 2011). Its implementation is placing environmental agenda central to the EU economy, and its success relies upon engaging the economic actors, such as large family-owned companies. This is contained within the European

Commission's announcement of the process to "reflect on different forms of additional incentives for businesses to integrate SDGs in their operations" (European Commission, 2019a) and provides a framework for strategic actions that can bring governments and employers together. While it is true that additional incentives may be necessary to boost the transition, other sources of guidance and motivation should not be ignored. It is why this master thesis has focused on family-owned companies' core values. These initiate the sequence of pro-environmental behavior and may provide supplementary, non-economic incentives with the potential to operate as sources of guidance.

Most of the large family-owned companies behave as rational economic actors and, as such, pursue the best possible deal. Thus, they are prone to techno-managerial solutions for environmental problems. Hence, the eco-socialist nature wrapped into administrative rationalism of scientific and technical expertise sounds like a 'good deal'. But, to prosper, it still needs to deal with the uncertainty that emerges from one of the most challenging questions sustainability eventually encounters: 'What will humans do?' (Busch & Harris, 2016, p.190). That is where values play a fundamental role.

6 Conclusion

The environmental performance of the majority of the large family-owned companies, from this sample, is subject to external guidance. As such, these require either market rules or top-down state approach in governance, which operate on the balance between the economic incentives and administrative fines. Therefore, concerning the RQ2, most of the large family-owned companies' position is expected to be reactive concerning the Green Deal for Europe governance. Nevertheless, while answering the RQ1, this thesis shows that the reported self-transcending values do lead to better pro-environmental behavior among the large family-owned companies.

Although the correlation needs to be further studied to inform a more detailed link, there are indications to support the disciplinary form of pro-environmental self-regulations as environmentally beneficial. These show that having internalized determined self-transcending values, which are positively relevant to environmentalism, may lead to a behavior that is needed to accomplish the decarbonization goals defined by the Green Deal for Europe. It allows the business and policy decision-makers to identify additional incentives to stimulate companies' environmental behavior and to expand the scope of incentives beyond the strictly economic ones. This requires a collective redefinition of desired goals by placing nature central to business performance. Such a process can benefit by learning from nature and understanding that "a tree can be only as strong as the forest that

surrounds it” (Wohlleben, 2015, p.17). This entails using those values that lead to positive pro-environmental behavior as seeds for a carbon-free economy.

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8 Appendices

Table 8. List of European largest family-owned companies extracted from CampdenFB. The column to the far right indicates companies' status in the research.

Rank	Company	Family	Country	Status
1	Volkswagen	Piëch	Germany	Included
2	ArcelorMittal	Mittal	Luxembourg	Included
3	BMW	Quandt	Germany	Included
4	Fiat	Agnelli	Italy	No data available
5	PSA Peugeot Citroen	Peugeot	France	No longer family owned
6	Aldi	Albrecht	Germany	No data available
7	Auchan Group	Mulliez	France	No data available
8	Robert Bosch	Bosch	Germany	Included
9	AP Moller Maersk	Mc-Kinney Moller	Denmark	Included
10	Roche Group	Oeri/Hoffman	Switzerland	Included
11	Novartis Group	Landolt	Switzerland	No data available
12	Bouygues	Bouygues	France	No data available
13	ABInBev	Stichting Foundation	Belgium	No data available
14	Haniel	Haniel	Germany	No data available
15	Ikea	Kamprad	Sweden	Included
16	Koc Group	Koc	Turkey	Outside EU
17	LVMH	Arnault	France	Included
18	L'Oreal	Bettencourt	France	Included

19	Heraeus Holding	Heraeus	Germany	No data available
20	PPR	Pinault	France	No data available
21	El Corte Ingles	Alvarez	Spain	Included
22	Bertelsmann	Bertelsmann	Germany	Included
23	Michelin	Michelin	France	Included
24	Heineken	Heineken	Netherlands	Included
25	Sodexo	Bellon	France	No data available
26	Mercadona	Roig	Spain	No data available
27	BCD Holdings	Van Vlissingen	Netherlands	No data available
28	Boehringer Ingelheim	Boehringer	Germany	No data available
29	Fomento de Construcciones	Koplowitz	Spain	No data available
30	Hennes and Mauritz	Persson	Sweden	Included
31	Grupo Ferrovial	Del Pino	Spain	No data available
32	SHV Holdings	Fentener Van Vlissingen	Netherlands	No data available
33	Sonepar	Coisne/Lambert	France	No data available
34	Tengelmann	Haub	Germany	No data available
35	Associated British Foods	Weston	UK	Included
36	Inditex	Ortega	Spain	No data available
37	Otto Group	Otto	Germany	No data available

38	Haci Omer Sabanci Holdings	Sabanci	Turkey	Outside EU
39	Tchibo Holding	Herz	Germany	No data available
40	Lactalis	Besnier	France	No data available
41	Oetker Group	Oetker	Germany	No data available
42	Porsche	Porsche/Piech	Germany	No data available
43	Jeronimo Martins	Soares dos Santos	Portugal	No data available
44	Schaeffler Group	Schaeffler	Germany	Included
45	Liebherr Group	Liebherr	Germany	No data available
46	Colruyt	Colruyt	Belgium	Included
47	Acciona	Entrecanales	Spain	Included
48	Ferrero	Ferrero	Italy	Included
49	C&A	Brenninkmeijer	Netherlands	No data available
50	Bolloré	Bolloré	France	No data available

Source: <http://www.campdenfb.com/article/top-100-family-businesses-europe-0>

Table 9. Companies' individual indicators. A sign (+) in the mission column indicates the company has environmental concerns in their mission statements, while (-) indicates the opposite. In the eco-modernization column the value 1 indicates strong while value 2 indicates a weak eco-modernization paradigm. Value 1 indicates the pledge while blue color and 2 indicates the stated commitment to the Paris Agreement. For the CO2 emissions and energy consumption (+) sign positive (decreasing) tendency, while the (-) sign the negative (increasing) one.

	Company name	Values category	Mission	Eco-modernization paradigm	Paris Agreement	CO2 emissions tendency	CO2 reduction tendency mean	Energy reduction tendency	Energy consumption mean	Percentage of renewable energies used
1.	Volkswagen	O	(+)	1	0	(+)	8,74%	(-)	14,35%	37%
2.	ArcelorMittal	BE	(+)	2	2	(+)	0,50%	(+)	1%	0,23%
3.	BMW Group	A	(-)	1	0	(+)	4,68%	(+)	0,08%	80%
4.	Bosch	AE	(+)	2	0	(+)	4,00%	(+)	3,13%	0,68%
5.	A.P. Moller Maersk	E	(-)	1	0	(+)	7,95%	(+)	16,14%	2,68%
6.	Roche Group	O	(-)	1	0	(-)	15,57%	(-)	6,72%	63%
7.	IKEA	AE	(-)	2	0	(-)	15,94%	(-)	12,80%	74%
8.	LVMH	E	(+)	2	0	(-)	4,03%	(-)	10,59%	27%
9.	L'Oreal Group	AE	(+)	1	0	(-)	37,60%	(-)	36%	66%
10.	El Corte Ingles	AB	(-)	1	0	(-)	109,86%	(-)	9,31%	98,50%
11.	Bertelsman	E	(+)	1	0	(-)	15,17%	(+)	1,85%	8,18%
12.	Michelin Group	B	(+)	1	0	(-)	11,76%	(-)	4,08%	85%
13.	Heineken Company	AE	(-)	1	2	(-)	11,76%	(+)	4,08%	85%
14.	Hennes and Mauritz	AE	(+)	1	0	(-)	34,26%	(+)	16,94%	96%
15.	Associated British Foods	AE	(-)	1	0	(-)	5,71%	(-)	1,73%	50%
16.	Schaeffler Group	BE	(+)	1	0	(-)	0,89%	(+)	7,64%	0%
17.	Colruyt	AE	(+)	2	0	(-)	13,33%	(-)	7%	100%
18.	Acciona	ABE	(+)	2	1	(+)	22,78%	(-)	63,34%	100%
19.	Ferrero	AE	(-)	1	0	(+)	3,66%	(-)	2,37%	14,60%

Additional information for 3.2.3.2 Awareness of consequences and ascription of responsibility:

Following are the considerations designed to identify the companies' leaders' beliefs regarding the consequences of consumerism and the responsibility

1. Awareness of consequences (AC).

- a) Consumerism influences climate change
- b) No stated opinion
- c) Consumerism does not influence climate change

2. Ascription of responsibility (AR).

- a) Our actions contribute to global warming
- b) Our contribution to the global warming is negligible
- c) Companies at their own cannot contribute to the decrease in global warming
- d) No stated opinion

Table 10. Statements from the large-family owned companies' leaders from the sample sorted according to the answers to the questions in chapter 3.2.3.2. Empty boxes indicate no statements found.

Company name	Ascription of responsibility	Awareness of consequences	Values category
Volkswagen		AC3	O
ArcelorMittal	AR3	AC1	BE
BMW Group			A
Bosch	AR1	AC1	AE
A.P. Moller Maersk	AR1		E
Roche Group			O
IKEA	AR1	AC1	AE
LVMH		AC3	E
L'Oreal Group	AR1		AE
El Corte Ingles			AB
Bertelsman	AR1		E
Michelin Group	AR1		B
Heineken Company	AR1		AE
Hennes and Mauritz		AC3	AE
Associated British Foods	AR2		AE
Schaeffler Group	AR1	AC1	BE
Colruyt	AR1		AE
Acciona	AR1		ABE
Ferrero			AE

Table 11. Extracts from the statements used

Company name	Eco-Modernization Paradigm	High ranking officer's statement	AR - ascription of responsibility	AC: awareness of consequences
Volkswagen	There is absolutely no reason for driving bans. Nitrogen oxide pollution has been reduced by 70 percent since 1990, even though traffic has increased by 50 percent. In the last year alone, the situation improved by 12 percent, even in particularly heavily polluted cities like here in Stuttgart. So looking ahead, the problem in cities is being resolved as the fleet undergoes renewal. Diesels are getting better from one generation to the next.	Herbert Diess CEO		There is absolutely no reason for driving bans. Nitrogen oxide pollution has been reduced by 70 percent since 1990, even though traffic has increased by 50 percent. In the last year alone, the situation improved by 12 percent, even in particularly heavily polluted cities like here in Stuttgart. So looking ahead, the problem in cities is being resolved as the fleet undergoes renewal. Diesels are getting better from one generation to the next.”
ArcelorMittal	Yes, we must continue to be alert about the risks of overcapacity and overproduction on a global basis, but at the same time we must embrace the opportunities for steel in an increasingly circular economy.	Lakshmi N. Mittal	No industry can decarbonise by itself. There must be collaboration and partnership between political, business and civil society leadership to establish a system that supports and enables sustainable decarbonisation, taking into account the unique economics and drivers for each industry.	While steel may have a lower carbon intensity than many other materials, the large volumes of steel produced globally mean that the industry emits over three gigatons of CO2 annually. Now that the unintended consequences of using fossil fuels have become clear, the world needs to find a new way of doing things that enables further economic and social development while minimising environmental damage.

BMW	<p>Our industry has always accomplished great things and continues to play an important role in the economy and society at large: as an employer, as a taxpayer and as a driver of innovation. So, let us focus our full attention on the shift towards sustainable, digitalized mobility. Mastering that challenge is the central task facing the German automotive industry –and nothing else.</p>	Harald Krüger		
Bosch	<p>As early as 2020, Bosch will be carbon neutral at its 400 locations worldwide. When it comes to the climate, words are not enough. We need deeds as well.</p>	Volkmar Denner	<p>Globally as well, we can witness the temptation to shift responsibility — whether into the future (after all, the targets are long term in nature), or into other people's backyards: countries or industries that, either in fact or allegedly, emit more carbon dioxide. But anyone who wants to do something about global warming instead of just talking about it has to answer three key questions: why not now, why not here, why not in our own backyard?</p>	<p>When it comes to road-traffic CO₂ emissions, we need complete transparency: from fuel consumption to the production of fuel and electricity. "Anyone who takes climate action on our roads seriously must consider all sources of CO₂ emissions, from well to wheel.</p>
AP Moller Maersk	<p>Energy efficiency has been an important tool which has helped us reduce CO₂ emissions per container with 41% over the last decade and position ourselves as a leader 10% ahead of the industry average.</p>	Søren Skou	<p>Shipping is responsible for 2-3% of global greenhouse gas (GHG) emissions, so the industry has significant potential to help create a carbon-neutral economy by 2050. Maersk is determined to play its part by leading the development and scaling of future solutions.</p>	

Roche Group	<p>Sustainability is an integral part of what we do at Roche. Laying the foundations now for future generations so they can live longer healthier lives and still have the resources they need. I strongly believe that our main contribution to the society is improving health care, developing tests and medicines to meet some of the most urgent medical needs. That is at the end of the day what it is all about. If we are successful in exactly doing this will have a long and lasting impact And we will make a valuable contribution to a good health and wellbeing. An important sustainable goal of the UN.</p>	Severin Schwan		
IKEA	<p><i>Torbjörn Lööf CEO, Inter IKEA Group:</i> We will innovate across the value chain – from the raw materials we use to how products are used in people's homes, and how the materials can be re-used in the future. We are also working to inspire and enable people to live more sustainably, through products and solutions that make it easy to reduce waste, save energy and conserve natural resources.</p>	Jesper Brodin	<p>It is action that is going to help us and make this important issues go away. Together we need to test and find better ways for the future.</p>	<p>The biggest concern we have is that the clock is ticking when it comes to climate and resource scarcity and we need to find new business models.</p>

LVMH	Our position as a leader entails social and environmental responsibilities. We need to go further than simply meeting standards.	Bernard Arnault	Three months from the COP 21, this renewed commitment shows L'Oréal's will to taking part in the fight against climate change. This initiative demonstrates the Group's capacity to leverage its innovation power in order to address a major environmental challenge alongside its suppliers and communities. Companies must play a leading role in the quest for solutions to the challenges of our time.	Arnault told journalists that he preferred “positive solutions that allow us to get towards a more optimistic position”, as opposed to what he views as negative rhetoric put forth by Greta Thunberg. The French chairman went on to say that her vision “has a demoralising side to it for young people”, concluding, “she’s not proposing anyway, aside from criticism.” Reuters Her vision “has a demoralizing side to it for young people. She’s not proposing anyway, aside from criticism,” Arnault, 70, told journalists. “I prefer positive solutions that allow us to get towards a more optimistic position.”
L'Oreal Group	We work to do our part for the limitation of global warming at 2C having already reduced by 50.2% in absolute terms the CO2 emissions of our operations between 2005 and 2014 while increasing our production by 22% over the same period.	Jean-Paul Agon		
El Corte Ingles	At the El Corte Inglés Group, we are committed to and concerned for the environment and are making continuous efforts to improve impacts related to our commercial activity. In this regard, our main efforts are related to reducing the consumption of materials, energy and water, as well as those aspects concerning the control of greenhouse gas emissions and waste management.	Marta Álvarez		

Bertelsman	<p>Thomas Rabe: The diversity of Bertelsmann's businesses requires different, bespoke solutions. In our planning, we assume individual divisions will achieve the goal of climate neutrality more quickly than others. The first few units, such as the Corporate Centre in Gütersloh, will already achieve climate neutrality this year, others in the following years. In 2030, Bertelsmann will be a climate neutral company.</p>	Thomas Rabe	<p>With our decision to achieve climate neutrality by 2030, we are taking responsibility in the battle against climate change and global warming.</p>	
Michelin Group	<p>Everything will be sustainable". It means that the Michelin Group is committed to a profitable development for the company and its employees, with the greatest respect for our planet and its inhabitants.</p>	Jean-Dominique Senard	<p>Convergence and synergism in action plans are essential to mobilize the private sector, through the emergence of significant new markets, and to reduce the cost of transformation. Timely investment in innovative solutions will be critical to the success of both environmental and social goals, including job creation, a worldwide concern. This requires visibility on regional and global roadmaps.</p>	
Heineken	<p>Jean-François van Boxmeer: Our strategic priority is biased towards growth. This can only be achieved through continued focus on innovation, operational excellence and social and environmental sustainability, so consumers can enjoy our brands, our customers' expectations are exceeded and we continue to enjoy the trust of the communities in which we operate.</p>	Jean-François van Boxmeer	<p>At Heineken, we try hard to make a contribution to the essential goal of limiting global warming by making thoughtful choices about resource usage.</p>	

Hennes and Mauritz	We must reduce the environmental impact, Persson told Bloomberg. "At the same time, we must also continue to create jobs, get better healthcare and all the things that come with economic growth."	Karl-Johan Persson		H&M CEO Karl-Johan Persson, the third in his family to hold the helm of the fast-fashion company, told Bloomberg that he was concerned about protests that encourage consumers to "'stop doing things, stop consuming, stop flying.'"
Associated British Foods	George Weston: We expect our businesses to do the right thing and hold our leaders to account for ensuring their business operates according to the standards we expect.	George Weston	George Weston has hit back at criticism that fast fashion retailers had a big carbon footprint by saying that physical shops are greener than online stores. Weston, the chief executive of Primark parent company AB Foods, said that physical stores have a lower carbon footprint compared to online delivery vans "puffing their way up and down a street".	
Schaeffler Group	Successful product innovations in the areas of mobility and industrial processes prove the effectiveness of our corporate strategy "Mobility for tomorrow". In order to remain the innovation leader in the future, we invested more than ever before in research and development with EUR 847 m in 2018. We have purposefully created more scope for embracing technologies with future potential.	Klaus Rosenfeld	Many of our decisions in Group management have a global impact. Therefore, we are committed to the principles of the UN Global Compact, the National Action Plan on Business and Human Rights, and the goals of the United Nations 2030 Agenda for Sustainable Development. With the Schaeffler Group's opportunities and skills, we can make a significant contribution to making the world a bit cleaner, safer, and smarter.	Energy efficiency and preservation of resources The increasing scarcity of fossil fuels and raw materials, rising energy prices, and the continuing growth of the Earth's population mean we have to be more and more responsible in our handling of resources and energy. The social climate protection targets that are in place with the aim of achieving significant reductions in greenhouse gas emissions also mean that consistent action must be taken globally. We are fully aware of our social and corporate responsibility, because the only way we can achieve success in the long term is to reduce consumption wherever possible. It is our obligation to manufacture our products using the

				most efficient and climate-friendly processes possible.
Colruyt	<p>For more than half a century, sustainability has run through all of our activities as a common thread. Our ambitions are far-reaching. We want to be a reference point for sustainable entrepreneurship in Belgium. We put many people and resources into this. We are proud of what we have achieved over the years, while realising that sustainable entrepreneurship never ends. So, day after day, we do our best to make a meaningful difference together. Step by step.</p>	Jef Colruyt	<p>Through this annual report, we aim to show clearly that financial and non-financial information have equal status for us. Because our impact on society extends beyond economic added value alone. We play a significant role socially and ecologically as well. I am not suggesting that we are there yet. Nor am I saying that our company has no further steps to take. But we do our best every day and are learning all the time. Whether it is through our own projects or smart partnerships.</p>	

Acciona	<p>Although the calls to action are unequivocal, the pace of change remains insufficient. And geopolitical tensions do not help. Breaking the inertia of the fossil fuel-based production and consumption model that has been the cornerstone of a flourishing economy for decades is no easy task. Therefore, further attention must be drawn to the situation. Not only because of the risks entailed in a failure to act, but also because of the new and interesting opportunities that could be brought about by the change. Not only because of the risks entailed in a failure to act, but also because of the new and interesting opportunities that could be brought about by the change.</p>	José Manuel Entrecanales	<p>The acceleration of CO2 concentrations in the atmosphere was confirmed this year. If we were alarmed in 2010 when we reached 400 parts per million, this figure is expected to reach 412 ppm in 2019. Unfortunately, this brings us dangerously closer to the 420 ppm set by scientists as a red line.</p>	<p>Breaking the inertia of the fossil fuel-based production and consumption model that has been the cornerstone of a flourishing economy for decades is no easy task. Therefore, further attention must be drawn to the situation. Not only because of the risks entailed in a failure to act, but also because of the new and interesting opportunities that could be brought about by the change</p>
Ferrero Group	<p>Giovanni Ferrero: This Report is a testimony to our renewed support for the United Nations Global Compact, the world's largest corporate sustainability initiative.</p>	Giovanni Ferrero		

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Table 12. The following companies are included in the Statista Toplist. It displays the largest 300 companies in Europe ranked by revenue.

Royal Dutch Shell (Shell) plc	Rosneft PAO	Eni SpA
Bp plc	Fiat Chrysler Automobiles N.V.	Deutsche Telekom AG
Volkswagen AG	Hydro Aluminium Deutschland GmbH	Peugeot SA
Glencore plc	Lukoil PJSC	PSA Group SA
Daimler AG	Bayerische Motoren Werke AG	Assicurazioni Generali SpA
Total SA	Nestlé SA	Enel SpA
EXOR SpA	Carrefour SA	Tesco plc
Siemens AG	NK Lukoil PAO	Electricite De France SA
Allianz SE	Uniper SE	ArcelorMittal SA
Imperial Logistics International & Co KG	Robert Bosch GmbH	United Parcel Service Inc.
Airbus Group SE	Vodafone Group plc	Novartis Pharma GmbH
Ahold-Delhaize N.V.	Münchener Rückversicherungs-Gesellschaft AG	Vinci SA
Koninklijke Ahold Delhaize N.V.	Auchan SA	Continental AG
BASF SE	Roche Holding AG	Christian Dior SE
Deutsche Post AG	Telefonica SA	Koc Holding AS
DHL Supplychain Subsidiary	Unilever plc	Deutsche Bahn AG
Engie SA	Repsol SA	BNP Paribas SA

Rewe Group JSC	Anheuser-Busch Inbev N.V.	Compagnie Deint Gobain SA
HSBC Holdings plc	Novartis AG	Orange SA
Renault SA	LVMH Moët Hennessy Louis Vuitton SE	Volvo AB
INGKA Holding B.V.	Groupe Casino SA	Innogy SE
Zurich Insurance Group AG	Imperial Brands plc	Sainsbury's plc
Bayer AG	ACS Actividades De Construcción Y Servicios SA	Thyssenkrupp AG
BHP Billiton plc	ZF Friedrichshafen AG	Bancontander SA
Fonciere Euris SA	Centrica plc	Gazprom Neft PAO
SSE plc	Deutsche Lufthansa AG	Fresenius SE & Co. KGaA
GlaxoSmithKline plc	Sanofi SA	Poste Italiane SpA
Accenture plc	Bouygues SA	Talanx AG
CNP Assurances SA	Lyondellbasell Industries N.V.	CRH plc
PricewaterhouseCoopers LLP	Iberdrola SA	Société nationale des chemins de fer français (SNCF) SOE
Ernst & Young Ltd.	L'Oréal SA	A.P. Moeller/Maersk AS
Prudential plc	Arcelik AS	Ferguson plc
ABB India Limited Ltd.	CNH Industrial N.V.	Inditex SA
British American Tobacco plc	Türkiye Petrol Rafinerileri AS	LafargeHolcim Ltd.
Chubb Ltd.	Industria de Diseño Textil (Inditex) SA	Anglo American plc

E.ON SE	Veolia Environnement SA	PHOENIX Pharmahandel GmbH & Co. KG
BT Group plc	Barclays plc	SAP SE
Compass Group plc	Air France-KLM SA	Danone SA
Edeka Group AG	Migros-Gruppe Genossenschaft	Group Danone SA
Lloyds Banking Group plc	Schneider Electric SE	British American Tobacco (Germany) GmbH
IAG - International Airlines Group S.A.	Bolloré SA	Adidas AG
International Consolidated Airlines Group SA	OMV AG	Groupe Adeo SA
Gas Natural SDG SA	Mercadona SA	Aviva plc
Hochtief AG	Ikea Group Corp.	Sonepar SA
Adecco Group AG	Nokia Corp.	Metro AG
Standard life plc	Heineken N.V.	Wm Morrison Supermarkets plc
Randstad Holding N.V.	Telefonaktiebolaget L.M. Ericsson AB	Celesio AG
Heraeus Holding GmbH	Compañía Española de Petróleos SAU	Safran SA
ALDI Einkauf GmbH & Co. KG	Cie Generale des Etablissements Michelin S.C.A.	L'Air Liquide SA
Mapfre SA	Michelin SA	Air Liquide SA
Aegon N.V.	Telecom Italia SpA	Sberbank Rossii PAO
X5 Retail Group N.V.	Boehringer Ingelheim GmbH	WPP plc
EnBW Energie Baden-Württemberg AG	Eaton plc	National Grid plc
Bae Systems plc	Tui AG	Shire plc
Sodexo SA	Rolls-Royce Holdings plc	Swiss Life Holding AG

H&M Hennes & Mauritz AB	Credit Suisse Group AG	Steinhoff International Holdings Ltd.
Endesa SA	Valeo SA	Skanska AB
Thüga AG	Associated British Foods plc	Royal Philips N.V.
AstraZeneca plc	Kuehne + Nagel Group AG	HeidelbergCement AG
Henkel AG & Co. KGaA	Hannover Rueck SE	Banco Bilbao Vizcaya Argentaria. SA
NN Group N.V.	Magnit PAO	Reckitt Benckiser Group plc
Bertelsmann SE & Co. KGaA	BayWa AG	Groupe Lactalis SA
Jeronimo Martins SGPS SA	DCC plc	Edp - Energias De Portugal SA
Suez SA	British Airways plc	Evonik Industries AG
Galp Energia SGPS SA	Thales SA	Novo Nordisk A/S
Norsk HydroA SA	Adient plc	Neste Oyj
Carnival plc	EDP Energias de Portugal SA	Linde AG
ALDI SÜD Dienstleistungs-GmbH & Co. KG	SCOR SE	Diageo plc
Eiffage SA	Evrast plc	Covestro AG
Delhaize Group SA	El Corte Inglés. SA	Scania AB
Vattenfall AB	Liberty Global plc	Electrolux AB
Kingfisher plc	Marquard & Bahls AG	UnipolSai Assicurazioni SpA
Groupama SA	Siemens Healthineers AG	Inter RAO UES PJSC
Altice N.V.	BSH Hausgeräte GmbH	ING Groep N.V.

John Lewis Partnership plc	RWE AG	Voest-Alpine AG
Johnson Matthey plc	Rexel SA	Dixons Carphone plc
Vivendi SA	Transneft PAO	Tatneft PAO
Vedanta Resources plc	Capgemini SA	Brenntag AG
Unipol Gruppo Finanziario SpA	Colas SA	Co-operative Group Ltd.
Kering SA	Marks and Spencer Group plc	Strabag SE
Umicore SA	Mondragon Corp.	Novatek PAO
John Wood Group plc	GKN plc	Bunzl plc
Atos SE	AGEAS AS	Decathlon SA
Leonardo SpA	Thomas Cook Group plc	Compagnie Financière Richemont SA
Syngenta AG	Credit Agricole SA	ASML Holding N.V.
ICA Gruppen AB	Koninklijke FrieslandCampina N.V.	Solvay SA
MAN S.E.	Essity AB	Novolipetsk Steel (NLMK) PAO
Ferrovie dello Stato Italiane SpA	Coca-Cola European Partners plc	UniCredit SpA
Dr. August Oetker KG	Hapag Lloyd AG	Essilor International SA
Royal Mail plc	Inchcape plc	Selex Gruppo Commerciale S.r.L.
Swisscom AG	AFK Sistema PAO	XL Group Ltd.

Securitas AB	Arla Foods A.m.b.A.	SOLVAY GmbH
Keskoj Oyj	Aurubis AG	Prysmian SpA
DSV A/S	Societe Generale SA	Dong Energy A/S
Royal Bank of Scotland Group plc	DKSH Holding AG	Seagate Technology Ltd.
Swiss Re AG	Red Bull GmbH	Balfour Beatty plc
Sandvik AB	Saras SpA	Atlas Copco AB
MMC Norilsk Nickel PJSC	Kesko Corp.	Vienna Insurance Group AG
The Ferrero Group JSC	Ternium Sa	Botas Petroleum Pipeline Corp.
Stora Enso Oyj	VNG - Verbundnetz Gas AG dm-drogerie markt + Co GmbH & Co. KG	