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**"THE EVOLUTION OF ENVIRONMENTAL DISCLOSURE IN
SUSTAINABILITY REPORT: A CASE OF ENERGY UTILITIES
COMPANY"**

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1. INTRODUCTION

This dissertation will be structured in four chapters: the first one will depict an overall picture about corporate social responsibility (CSR) and sustainability.

In particular, I will go through the most important theories since '30s, facing stakeholders and stockholders' approaches. More, thanks to the literature available, I will reason about the relationship between corporate social responsibility and sustainability.

Furthermore, I will introduce the topic of CSR and sustainability communication, analysing the past and recent studies, the benefits that derive from their disclosure and the addresses of this process.

After having built the theoretical foundations of my thesis, I will present the tools available to declare social, economic, and environmental subjects, considering the evolution of voluntary communication with the reasons behind the companies' choice to disclose.

I will also underline the effects of the European Union Directive 95/2014 on sustainability disclosure. I will introduce the different types of reporting, mentioning the social, environmental and sustainability ones.

I will show the most popular guidelines used to draft these kinds of reports and I will concentrate on Global Reporting Initiative (GRI) principles, adopted by the company I chose.

In chapter 3, I will present the instrument I use. In this regard, I will face the topic of content analysis, the one that allows me to study sustainability reports through the interpretation of the text.

In particular I will use the Clarkson et al. (2008) index, that is a helpful tool to investigate the quality of the companies' environmental disclosure, assigning a score based on the presence or absence of an information.

The index is coherent with reports drafted following GRI standards and it is the most popular and suitable index, published in a renowned accounting magazine, to test my thesis.

Then, I will briefly present the energy and utilities industry and also the company I have decided to analyse: Snam.

Chapter 4 is the fulcrum of my dissertation, as it has the aim to analyse the evolution of the environmental disclosure in Snam.

The query of this work is: *“Is there an evolution in environmental disclosure, through years, in the energy utilities company I have chosen to analyse?”*.

In order to be able to answer, I will read and analyse the text of Health – Safety – Environment (HSE) and sustainability reports available on the website from 2002 to 2019, and I will apply the Clarkson et al. (2008) index.

I will bring back relevant information and Snam noteworthy initiatives. I will, finally, go through the tables of content of each report and the GRI adoption. I will make comments on scores reached every year, and I will try to make suggestions where there is room for improvement. Lastly, I will try to individuate if there is an identifiable trend in the quantity of environmental documentation, and in the scores obtained.

2. CHAPTER 1

2.1. CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY

2.1.1. DEFINITION AND EVOLUTION OF THE CSR CONCEPT: STOCKHOLDER VIEW VS STAKEHOLDER VIEW

The roots of the corporate social responsibility (CSR) go back to the 1931 when the scholar Berle stated that a firm's or the management's powers should be exercised only with the aim to realize shareholders' benefits. This thought finds its rationale in the fact that in this way all the other stakeholders of the firm would be better off: the fiduciary duties of the managers towards shareholders are justified by the public policy. However, this concept is very limited. In 1932 Dodd contradicted Berle suggesting that managers should care also of the society deliberately. During the same years, other researchers, like Barnard, put in the management's hands greater responsibilities considering it as the company's ethic values promoter. In this way the firm has a sort of instrumental role for the society (see Crivellaro, Vecchiato, Scalco, 2012, p. 38).

The definition of the CSR's role was resumed in '60s by other scholars. In Mc Guire's *Business and Society* work, the company has a social responsibility that goes beyond the mere economic and legal obligations and that concerns the society. This contribution was supported and enlarged by Carroll's studies in the end of '70s (see Crivellaro, Vecchiato, Scalco, 2012, p. 39).

In 1979 the author wrote *A Three-Dimensional Conceptual Model of Corporate Performance* laying the foundation for his next work, considering four responsibilities of CSR: economic, legal, ethical and discretionary, in response to those that retained separate the economic facet from the social one (Carroll, 1979).

Even if the idea that the management has also an ethic responsibility is widely accepted, the recipients of such obligations are divided in two categories: on one hand there are shareholders, and on the other one stakeholders (Crivellaro, Vecchiato, Scalco, 2012).

The stockholder theory expects that managers have the moral duty of ensuring the increase in return for shareholders; thus, the ethic responsibility actually implies in this case, the respect for their proprietary rights. In 1962, Friedman claimed for a managerial attitude completely separated from any forms of resources' involvement in different activities other than business,

like social ones. The social dimension, according to Friedman, should be only a government's concern and resources, that represent a cost for the firm, should be invested in a way that increases profits. The author took a cue from the *invisible hand* theory of Adam Smith, for whom, pursuing an individual's objective it leads to realize also social benefits, consequently. In Friedman's opinion managers could deal with social matters but always in a strategic manner, in order to reach greater profits. It derives a negative conception in which the CSR is seen as a mechanism that would protect the company reputation from negative external judgements showing an apparent commitment (see Crivellaro, Vecchiato, Scalco, 2012, p. 41).

Going through this approach, in 1970 Friedman wrote *The social responsibility of business is to increase its profits*, in which he reinforces his idea that only people have responsibilities, and since corporations are artificial people, they have artificial responsibilities. Business cannot be said to have them. In a firm, people who are responsible for the company are the managers, since they are the owners' employees and for this reason, they have to increase profits for them. Managers, as individuals, could feel entitled of social responsibilities; thus, they would like to spend their money for worthy causes. Acting so, they are principles, but in the corporation, they are agents, and they have their employers' money into the hands (Friedman, 1970).

The stakeholder view sees the firm like a stakeholder among stakeholders, in this way it is important to involve all the stakeholders in the value creation process. Freeman belongs to this current of thoughts with his work *Strategic management: a stakeholder approach* of 1984 in which he highlights the relationship between ethic and competitive strategy (Crivellaro, Vecchiato, Scalco, 2012).

Freeman and Evan (1988) pointed out the theory according which the management builds a trust relationship not only with shareholders but also with other stakeholders. Behind this approach it can be found the Kantian principle that considers people like ends and not means. From this standard, the authors of *A stakeholder theory of the modern corporation: Kantian capitalism*, it follows that two pillars are fundamental. The first one states that the company has to be managed considering all stakeholders, granting their rights and their welfare. The second provides that the management establishes a trust relationship with the company and the stakeholders, and it has to ensure the survival of the former and the interests of the latter in a long-term perspective because both parties are equally important. It is clear that in case of conflict of interests the firm has the priority over the other stakeholders. The authors also underline a new definition of the company's purpose, that is to coordinate stakeholders'

interests; profitable relationships with them actually influence positively the firm's ability to generate returns. In this optic, relationships can be seen as assets that affect the value creation. Freeman highlights the management's responsibility to preserve the company's health through balancing all existing claims among stakeholders, from the financial returns of the owners to the better wages of the employees (see Crivellaro, Vecchiato, Scalco, 2012, pp. 44-45).

In 1991, also Carroll with *The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders*, reviewed the four dimensions of CSR and he analysed deep the relationship with stakeholders. Corporate social responsibility is made by the four aforementioned pillars:

- (1) economic, maximizing profits, maintaining a strong competitive position and a good level of operating efficiency;
- (2) legal, being compliant with regulations, consistent with government's expectations, fulfilling obligations;
- (3) ethical, following social mores, respecting ethical norms that stakeholders consider fair and do not avoid them to achieve company's goals;
- (4) philanthropic, acting in a charitable way, participating in voluntary activities to support local communities and enhancing the quality of life.



Figure 1: The pyramid of corporate social responsibility
Source: Carroll, 1991, p. 42

Carroll emphasises the nexus between CSR and stakeholders that have claims: firms' executives prioritize one stakeholder over another, looking at legitimacy and powers; thus, through stakeholders' management, executives and stakeholders' objectives are reconciled trying to satisfy all parties in play to achieve a win-win result. Carroll suggested a matrix in which links between responsibilities and stakeholders appear evident. It is important to identify stakeholders and their stakes, their opportunities, the firm's CSR towards them and understand the strategies to be implemented in order to exercise these responsibilities (Carroll, 1991).

To sum up, the two approaches differ in the motivation that push managers to consider all stakeholders' interests: the stockholder view expects to do that in order to increment profits, the stakeholder view considers this as the right thing to do (Crivellaro, Vecchiato, Scalco, 2012).

In the most recent years corporate social responsibility and stakeholder theory were reviewed in order to understand better the differences and the similarities. Both concepts point out the importance to embody society's interests in the business operations, but stakeholder approach consider all parties as equally important, instead CSR tend to attribute less priority to, for instance, financiers and suppliers, focusing on labour practices and environmental matters and considering society at large. Both concepts pay attention to communities and society, but stakeholder view concentrates on local communities rather than considering a global commitment as the CSR does, and this confirms the prioritized engagement of corporate social responsibility towards communities, employees, customers. Thus, if stakeholders are treated as equally important it can be told about corporate responsibility; on the contrary, the adjective *social* should be added when some stakeholders are prioritized and society is seen at large (Freeman, Dmytriyev, 2017).

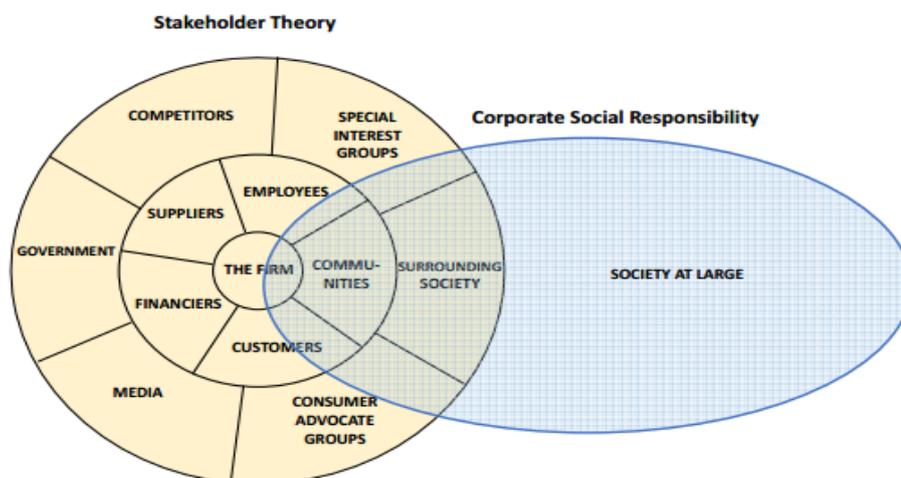


Figure 2: The relation between stakeholder theory and CSR
 Source: Freeman, Dmytriyev, 2017, p.11

In 2006 a new approach is proposed by Porter and Kramer who started from four facets of CSR individuated by some CSR defenders: moral obligation, sustainability, license to operate and reputation.

- (1) Moral obligation revolves around the capacity to achieve business goals showing consideration for communities, people, environment and respecting ethical values; but the authors found out a problem since, when moral obligation is not mandatory like faithfulness in financial statements or not easy to apply and understand, corporations are having to cope with decisions of interests, values, expenses.
- (2) Sustainability¹ is intended like the capacity to satisfy the current generation's needs without compromising those of the future ones. This means that firms should pursue the long-term objective to create value without harming in the short-term the society and the environment. However, the notion could appear blurred in some situations.
- (3) License to operate regards the governments and communities' approval to conduct the economic affairs. This approach considers social issues that concerns stakeholders incentivising dialogues with them, but sometimes it is difficult that they understand the trade-offs that the company is facing, and CSR cannot be seen as a way to mitigate stakeholders' pressures.
- (4) Reputation is improved through CSR because the company can have a better image, brand, share values. Even though, like the third approach, this one is too much focused on external subjects.

Porter and Kramer suggested to integrate the society and the business in order to increase value creation sharing it. This process starts identifying crossing points with the society and understanding the context in which the company operates: types of inputs, rules of the competition, features of the local demand, regional accessibility of supporting industries. All these elements can create opportunities for corporate social responsibility. After this study, it is important to focus on few social issues, since it is impossible to solve all of them; social issues are divided into three categories: generic social issues, value chain social impacts, social dimensions of competitive context. Then, a corporate social agenda is prepared in order to catch social and economic advantages at the same time; the result is responsive and strategic CSR (Porter, Kramer, 2006).

¹ Sustainability concept will be analysed in deep in the next chapter

2.1.2. SUSTAINABILITY CONCEPT AND ITS RELATIONSHIP WITH CSR

Before understanding the relationship between CSR and sustainability, the latter's meaning has to be defined. As the term is often associated with sustainable development, it is relevant to understand first what it is meant with the word *development*. J. A. Du Pisani, in his article *Sustainable development – historical roots of the concept* of 2006, summarizes the historical path of sustainable development concept. Development, in this work, can be intended with Bury (1932) definition as the progress the society makes, is making or will make in a worthwhile direction considering technological and tangible, ethical improvement (see Du Pisani, 2006, p. 84).

From Van Zon's work (2002), it emerges that the word *sustainability* has been used for the first time in the Oxford English dictionary in the last part of the 1900s, associated to the meaning of long lastingness. Despite this, the concerns about environmental matters and organic materials date back to ancient populations like Greek, Roman and so on (see Du Pisani, 2006, p. 85).

It was during the Industrial Revolution period that the consciousness that acting in a sustainable way is vital increased, due to the inhabitants' increment, the consumerism, the natural resources in jeopardy. Societies were worried about the possibility that next generations would have been harmed. The awareness that raw materials are scarce has even more spread in '50s and '60s when the increase in consumption boomed. During the following decades, after the two World Wars, the myth of progress may be busted, as society realized that technological development could have destroyed the environment, therefore, the population was thrown into a state of panic for this ecological issue (Du Pisani, 2006).

Paxton (1993) (see Du Pisani, 2006, p. 91) pointed out the concept that development is the opposite to conservatism, since the former provides for an exploitation of natural materials and the latter the safeguard of environmental resources. From an ecological point of view, sustainability has started to be referred to a state that can last for unlimited time.

As said before, since 1970 the word sustainability has been associated to its environmental facet and this was mainly due to the intention to decrease the pollution. Two years later, United Nations (UN) Conference on Human Environment took place in Stockholm ending with the setting up of UN Environmental Program that stressed out critical environmental matters (Giovannoni, Fabietti, 2014).

In 1987, the UN engaged twenty-two people from developing and developed territories in order to stress out durable environmental procedures (Du Pisani, 2006).

The World Commission Environment and Development (WCED) drew up the last report in which the concept of sustainable development was clarified by Brundtland as it follows: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”²

From Brundtland proposal several aspects were brought to light, for instance human beings' requirements, worldwide equity fighting poverty to ensure that all individuals could fulfil their primary interests. In this perspective, sustainability was founded on collectivity justice and fairness, economic development, environment respect and safeguard. The Commission also dealt with cultivation, production, sources of power issues. Besides, after many environmental damages, sustainable development intended as the Brundtland definition became a priority and his meaning was embraced by most scholars (Du Pisani, 2006).

However, this concept was highly criticized by poorer countries that retained sustainable development a thought imposed by the riches to sustain the space that lies among more and less developed nations and state harsh regulations to help them. Around sustainability and social equity, another aspect emerged: distributional problems. In fact, poorer nations could get better in terms of quality of life, without damaging the next generations' interests. This situation could occur if rich countries shift their wealthy to the poor and give up to progress in favour of less developed nations (Du Pisani, 2006).

As regards corporations, until 90's companies had been acting in a reactive manner to environmental problems; only then, firms started to proactively face these kinds of issues trying to forecast the consequences of their activities on the environment, in order to gain economic benefits. Although sustainability concept was primarily based on its environmental side, social aspect was not being neglected. Indeed, the WCED statement aforementioned considers the present and the future generation demand; though, the social dimension of sustainability was still more linked to CSR³ (Giovannoni, Fabietti, 2014).

Three years later the Kyoto Conference on Climate Change in 1997, United Nations created Millennium Development Goals which deal with poverty, health, intolerance; in 2012 United Nations Conference on Sustainable Development (Rio+20) was arranged in order to highlight the importance to fill the lack of Sustainable Development Goals and drawing attention to social and environmental questions (Giovannoni, Fabietti, 2014).

The third and last aspect of sustainability, other than environment and society, regards the economic sphere and it is intended by Dyllick and Hockerts (2002) (see Giovannoni, Fabietti,

² Source: see Giovannoni E., Fabietti G., 2014. What Is Sustainability? A Review of the Concept and its Applications, p. 25

³ These two concepts will be related in the next paragraph

2014, p. 27) as the fact that firms are needed to do business consuming resources at a lower rate than their ordinary replication and pollute at a lower rate than the environment's ability to digest these outflows; moreover, corporations should avoid all operations that harm the ecosystem. In this sense, (Doane, MacGillivray, 2001; Dyllick, Hockerts, 2002) (see Giovannoni, Fabietti, 2014, p. 27) economic sustainability is conceived as the competence to endure on time considering money-making, productive capacity and financial conduct, handling social and environmental capital constituents. In other terms sustainability is defined as the capacity to fulfil actual stakeholders' necessities avoiding undermining the future ones.

Even if sustainability concept may seem clear after this literature review, Gray (2010)⁴ in his work discusses the ambivalence of the term.

He starts sharing the definition of above proposed by Burndtland in 1987 but he found the concept very elusive. The controversy lies the most in the relationship between modernity and sustainability as nature is no longer intended to be overwhelmed by progress; but, at the same time the values embraced through sustainability, like social involvement, reminds of an acceptance of modernity (Gray, 2010).

Few years earlier, Gray and Milne (2002)⁵ had already treated of sustainability concept, highlighting that this word is referred to as not only an efficient allowance and assignment of resources over years, but also a fair distribution of them among generations and "a scale of economic activity relative to its ecological life support systems" (Gray, Milne, 2002, p.4).

Sustainability recommends wider ecosystem-founded proposals which need a good knowledge of environmental mutations, modern and advanced decision-making planning. Sustainability needs also, in the authors' opinion, a certain degree of joint and common decision-making for the public welfare (Gray, Milne, 2002).

Ten years later, another long period of debate, always speaking of the term, came to conclusion. The discussion dealt with the differences between sustainability and corporate social responsibility. The debate had started since 90's in the institutional framework and it had concluded when these two notions have been reconciled, since CSR stands for paying attention to economy, society and territory just like sustainability. In summary, when sustainability is applied to corporate social responsibility, it focuses much more on the economic and social dimension, rather than being concentrated on environment (Zarri, 2009).

⁴ Source: Gray R., 2010. *Is accounting for sustainability actually accounting for sustainability... and how would we know? An exploration of narratives of organisations and the planet.*

⁵ Source: Gray R., Milne J. M., 2002. *Sustainability Reporting: Who's Kidding Whom?*

This aspect is very important, as in many cases sustainability is confined in environmental shades, like energy saving, waste management or eco-compatibility, completely ignoring the other dimensions of CSR and sustainability (Persico, Rossi, 2016).

Always starting from the UN definition and exercising sustainability to CSR, according to Chirieleison (2004) (see Zarri, 2009, p. 23), the sense becomes to create profits in the long-term, satisfying both stakeholders and shareholders' interests, managing risks and seizing opportunities from contextual changes.

Being sustainable means that a new relationship between firms and society is built, and it is based on collaboration and reciprocity; therefore, even when it is written *CSR*, it is read like *sustainability*. In this respect, sustainability is strictly connected with a more responsible way to do business, considering future generations; being sustainable embraces the concept of innovating, generating value added and gaining a competitive advantage (Crivellaro, Vecchiato, Scalco, 2012).

Also, The Corporate Responsibility Research Conference that took place on the 4th and 5th September in Dublin confirmed the fact that CSR and sustainable development are often used as synonyms (Ebner, Baumgartner, 2006).

In this respect, sustainability and sustainable development are considered in the most of studies as synonyms too, as proven by Poveda (2017) (see Ashrafi et al., 2018, p. 2).

The Conference based its studies investigating the thought of many scholars in different papers. It emerges that in 17 articles CSR and sustainable development or corporate sustainability (CS) are interchangeable (Ebner, Baumgartner, 2006).

Actually, the definitions of CSR and CS are based on the same underlying fact that they both generate favourable value for the society and for the environment, all combining environmental, social, and economic dimensions. CS, whose definition comes from sustainable development⁶, is in fact the company engagement in these three subjects (Ashrafi et al., 2018). To conclude, in literature it is frequent that sustainability, sustainable development, corporate sustainability and corporate social responsibility are treated like synonyms; therefore, I will assume the same too.

⁶ Source: Dyllick & Hockert, 2008 (see Ashrafi et al., 2018, p. 3)

2.2. CSR COMMUNICATION TOOLS

2.2.1. FROM SR DEFINITION TO CSR ACCOUNTABILITY AND REPORTING

In 90's the focus on CSR switched from the need to define the meaning of corporate social responsibility to the accountability of CSR. Thanks to development of the stakeholder approach in those last years, social and environmental reporting increased their popularity in order to fully represent the company's actions and satisfy all the players requirement of knowing. In 1986, Parker, dealt with accountability and reporting, investigating three subjects: what drove and prompted social and environmental reporting, their objectives and how to measure CSR performance (see Zarri, 2009, p. 21).

The first matter was simply explained deeming the new and evolving relationship between companies and the stakeholders responsible for the increasing need in this kind of reporting. As regards the scopes of social and environmental reporting, the willing of safeguard and improve the firm's image is one of the most important ones together with the defence of the company's reputation informing all the stakeholders about the activities and the resources deployed.

Gray, Adams and Owen, in 1996, saw reporting and accounting as a process. The fundamental assumption is that the economic behaviour is set into a greater context that comprehend social, cultural, ethical and environmental dimensions. Always in this context, society is considered as an aggregation of different individuals that can exercise powers and are involved in the political and decisional process. Therefore, people, in this democratic vision, need to be informed and thus, reporting becomes an instrument of information and companies' transparency a requirement. In such context individuals have, in a certain way, the rights to be informed of economic and political powers, in order to exercise their citizen powers (see Zarri, 2009, pp. 22-23).

For the authors social and environmental reporting become the process through which social and environmental effects are notified to parties belonging to the society. For all these reasons it is no longer sufficient that enterprises disclose only economic and financial results, ignoring the other subjects: accounting is a duty. In this case, it provides for the existence of a person who need information, and another one who must disclose it; this relationship is based on the conception of the social responsibility. Therefore, companies choose to act adopting a CSR behaviour and having a corporate transparency inclination (see Zarri, 2009, pp. 22-23).

A different approach is proposed by Bebbington and Thomson in 2002⁷ for whom social and environmental accounting should have an educational function, teaching to stakeholders the environmental context (see Zarri, 2009, pp. 23-24).

Actually, social and environmental reporting (SER) in Bebbington and Thomson's work⁸ is considered impersonal, stationary, an objective representation of the company's relationship with the environment and the society. In SER lies the tacit conviction that through the appropriate allocation of responsibilities, the generation of systems of appraisal, bringing into play objectives and aims, the company's repercussions can be mitigated and overseen. The authors found out that a lot of corporations and SER critics think that social and environmental reporting is able to educate and make capital markets, lenders, regulators aware of the company's solid team of executives, since it can contrast risks and control stakeholders and environment that affect the organization. Bebbington and Thomson retain this like a sort of "banking mindset" because of the undeclared aim to show that it is all good to the public disincentivising it for interrogating more the corporations and for interacting, as a normal educational process would be (Thomson, Bebbington, 2002).

As stated above, SER appears motionless and impersonal for the authors, when it ought to be subjective and liable to transformation. Feedbacks would cover an important role in this conversion process and dialogical education, but the truth is that there are too many passive readers or not even interested in being informed. This problem may be due to the fact that having rights to be informed, in the guise of a stakeholder, is unlike to be in need; education is essential to make stakeholders in need to be SER active readers, changing their habits to be passive and non-responding. Thus, to make stakeholders understand the corporation's interactions with the environment and the society, it is important to make them aware of their engagement, since it encourages dialogues (Thomson, Bebbington, 2002).

⁷ The work to which it is referred to is Social and environmental reporting in the UK a pedagogic evaluation, 2002

⁸ The study is referred to UK

2.2.2. THE TRIPLE BOTTOM LINE METHODOLOGY

“Is it progress if a cannibal uses a fork?”, from this question to which the scholar John Elkington answered affirmatively descended the Triple Bottom Line (TBL) accounting methodology. In his work, *Cannibals With Forks: The Triple Bottom Line of 21st Century Business*, on one hand there are cannibals that represent corporates in quick development which are impatient to eat their business competitors; on the other hand there is the fork, that mirrors the sustainable business definition and that may lead to a society's evolution, since everybody would benefit from the fork usage. Talking about sustainable business is nothing new, but this definition includes, from those years, the TBL aspects, that are strictly connected even if, sometimes, at odds.⁹

In fact, in the middle of 90s, after that the concepts “sustainability” and “sustainable development” were coined, it has been forged the mentioned-above accounting framework by John Elkington. This model, the so-called Triple Bottom Line¹⁰ was innovative as concern the consideration of environmental and social dimensions, encouraging the promotion of sustainability goals. This framework is also known as the Three Ps, since it includes people performance (social), profit performance (financial) and planet performance (ecological or environmental) (Slaper, Hall, 2011).

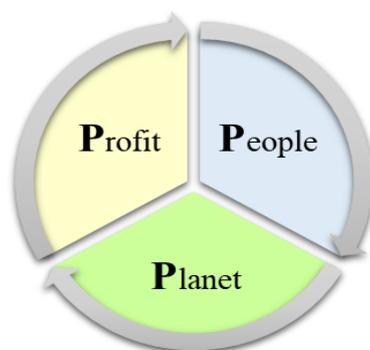


Figure 3: The Three Ps framework
Source: Own Elaboration

It is evident that corporations, in order to maintain their business and survive, need to generate profits; although it is important to create wealth for shareholders, it becomes indispensable to make all stakeholders benefit from the value generated. In this way the P of profit mixes itself with the other two Ps. It is essential that companies look after people granting them an

⁹ Source: Jeurissen J., 2000. *Reviewed work: John Elkington, Cannibals With Forks: The Triple Bottom Line of 21st Century Business by John Elkington*. Journal of Business Ethics 23(2), pp. 229-231

¹⁰ The bottom line referred to as the line drawn in the annual report that highlights the profit or loss. Triple bottom line underlines the concept through which all three dimensions should be considered.
Source: Crivellaro, Vecchiato, & Scalco, 2012, p. 58

adequate compensation but also offering a proper safety and health conditions; at the same time it is vital that firms safeguard the environment and the eco-system taking care of the ecological impacts of their activities (Persico, Rossi, 2016).

As regard the accountability of these three aspects, since only profits can be measured in terms of money, an index is used for all dimensions to avoid this problem of differences in unit of measure. Economic measure referred to as the inflow and outflow of cash, encompassing costs, revenues, payroll, taxes; environmental estimate consider waste management, energy consumption, water usage, pollutants, air quality; social facet quantifies equity, quality of life, unemployment rate, health and well-being, poverty (Slaper, Hall, 2011).

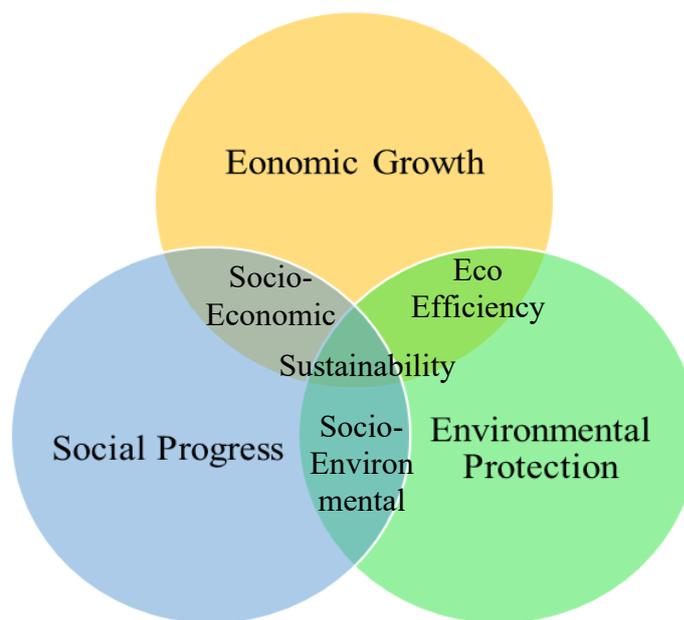


Figure 3: TBL
Source: Own Elaboration from Crivellaro, Vecchiato, Scalco, 2012, p.58

From the figure several objectives are delineated. Economic: ROI, revenues, cash flows; social: diversity respect, human rights respect, safety; environmental: waste management, no polluting emissions, recycling; socio-economic: skills improvement, new workplaces; socio-environmental: health orientation, environment safeguard; eco-efficiency: efficient of resource, product orientation (Crivellaro, Vecchiato, Scalco, 2012).

However, it can't be ignored that at the centre of the Triple Bottom Line a slight trade-off is perceptible; in fact, there are several circumstances where economic convenience is in contrast with social or ecological interests and it is very improbable that the latter will be received priority over the former. It should be recalled that a firm must be run considering

first the economic result, or nobody would direct the company. In this perspective the social and environmental aspects sneak into the discretionary areas, in which there is no trade-off with economic results and in which they impact favourably. A true TBL accounting framework must declare that the financial dimension will be predominant and that this tension among the three dimensions exists (Milne, Gray, 2004).

Even if TBL seems a good tool to highlight sustainable businesses, scholars like Milne and Gray (2012) argued the validity of this concept.

In their paper *W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting*, the authors debate the notion of TBL considering it not enough to speak of sustainability, but actually of unsustainability.

Conceptualising sustainability like the continuing conservation of the Earth's ecosystem's vital capabilities needs the subjection of financial aspects to social and environmental ones, but it is natural to be sceptic about this sacrifice in terms of profits that shareholders and executives would make to safeguard society and the planet. Another problem is that it is impossible to understand the real support to or distancing from sustainability, since this form of accounting does not disclose it (Milne, Gray, 2012).

It is known that Triple Bottom Line model has gained fame and it has been largely accepted, diverging the attention from the fact that the definition comprehends three different underlying facets. On one hand, SustainAbility (2003) and Vandenberg (2002) have demonstrated that TBL may be considered as a tool used by executives that incorporates principles, strategies to follow in order to reach financial, social and ecological goals (see Milne, Gray, 2012, p. 6). On the other hand, TBL is just a framework that provide for registering and highlighting in the annual report three different dimensions of the business. Lastly, it subsists the idea that sustainable development (SD) encompasses the collectivity, the planet and the business, and it flows into the concept that identifying economic, social and environmental aspects coincides with sustainability and, thus, TBL is often used to replace wrongly the term sustainability (Milne, Gray, 2012).

Milne and Gray (see 2012, p. 6) to support their thesis they cite Henriques and Richardson (2004) who underline that sustainability could mistakenly seem to be made by three dimensions that can be reachable easily without changing the business. According to Norman and MacDonald (2004) (see Milne, Gray, 2012, p. 6) environmental, social, and economic objectives are not reciprocal encouraging and it is unlikely to uniformly fulfil the different three aims.

2.2.3. CSR RECIPIENTS: STAKEHOLDERS

In the previous paragraph the shift from CSR definition to CSR accounting has been discussed¹¹. Therefore, it is relevant to understand to whom CSR is addressed. Beginning from this, stakeholders can be considered as the recipient of the CSR. In 1984, Freeman defined stakeholder as the people or the person who are able to influence or being influenced by the corporation's achievement of the objectives. Four years later, this concept of stakeholder, being very broad, has started to include almost everyone: suppliers, customers, employees, shareholders, management, local community. In the Green Book of the European Commission, stakeholders are human resources, shareholders, clients, suppliers, financial partners, government and communities that furnish infrastructures and markets, whose legislation must be respected and to whom taxes must be paid, public administration, local authorities, the environment (Crivellaro, Vecchiato, Scalco, 2012, Clarkson, 1995).

An important definition of stakeholders was wrought by Clarkson in 1995: they "are persons or groups that have, or claim, ownership, rights, or interests in a corporation and its activities, past, present, or future"¹². These ethical or judicial rights and interests derived from business and negotiation with the firm, and they may be isolated or in common. Stakeholders are divided in two categories: primary and secondary (Clarkson, 1995).

The former class comprehends people without whose involvement the company is not able to continually endure. These stakeholders are the ones nowadays comprised in the Green Book. As a consequence, a significant degree of interdependence between the firm and the primary stakeholders is established; in fact, if any person of this category turned discontented and cut off the bounds with the company, the last would be truly harmed. The latter class contains stakeholders that have an impact on or are subject to the power of the company, but they are not indispensable for the firm's livelihood; this category includes, for instance, the media and a broad variety of other particular stakeholders who have the ability to change collectivity' mind positively or negatively with respect to the company's performance (Clarkson, 1995). To press the point, once having defined the concept of stakeholder and embraced the stakeholder theory it appears evident that this group is the main corporate social responsibility's recipient.

¹¹ As already specified, I use CSR and sustainability in an interchangeable manner when possible, respecting the term and the meaning adopted by the authors cited

¹² Source: Clarkson M. B. E., 1995. *A stakeholder framework for analysing and evaluating corporate social responsibility performance*, p. 106

2.2.4. CSR ADOPTION ADVANTAGES

After having laid out CSR's primary addressees, it is relevant to understand why it is so important to adopt corporate social responsibility.

Crivellaro, Vecchiato and Scalco¹³ suggest many benefits that derive from this approach based on the dialogue with stakeholders in order to increment mutual satisfaction and trust.

- (1) Corporate reputation improvement: precisely, the high commitment in social responsibility can lead to a better company image through a better understanding of stakeholders and building beneficial relationships; the whole is translated in an increase in intangible assets that differentiates the firm from competitors.
- (2) Improvement of human resources management: it may result in an increment of security and safety preventing from likely risks. To implement this strategy, it is crucial that the company is oriented towards a transparent and open-mind culture.
- (3) Staff retention and loyalty: engagement in corporate social responsibility establishes a peaceful working environment which motivates the personnel to be loyal. Therefore, through a quiet and open atmosphere there would be place for innovation and an increase in employees' productivity.
- (4) Efficient environmental resources management: procedures that involve a low emission production and waste, a great recycling and a significant reduction in electric and water consumption lead to a decrease in costs and a higher competitiveness.
- (5) Effective risks management: acting socially responsible allows to reduce plenty of risks that could seriously harm the company survival; for instance, environment disasters, financial scandals and so on.
- (6) Betterment of relationships with financial institutions: considering the previous improvements that increment the reputation and image of the firm, it is possible that it leads to less burdensome financing.
- (7) Upgrading of enterprise attractivity on the financial markets: CSR and ethical finance can also positively trigger the economy. Indeed, if investors put all their money in socially responsible firms, other corporations would, consequently, act in the same way too in order to be attractive.
- (8) Increase in profits: all the advantages listed above, in the long-term can increase returns resulting in a long-lasting competitive advantage. It has become apparent and demonstrated that there is a connection between economic performances and social

¹³ Source: Crivellaro M., Vecchiato G., Scalco F., 2012. *Sostenibilità e rischio greenwashing. Guida all'integrazione degli strumenti di comunicazione ambientale*. Pp. 66-69

and environmental ones. For instance, optimising resources use can lower costs; decrease emissions can disfavoured environmental scandals; review an incentive plan can increase employees' fidelity and productivity (Crivellaro, Vecchiato, Scalco, 2012).

2.2.5. WHAT, WHY AND HOW TO COMMUNICATE CSR?

Once ascertained the previous topics, it is relevant to understand more precisely what, why and how communicate to stakeholder this firm's attitude.

To declare corporate social responsibility is important for many reasons: it leads to long-lasting relationships with stakeholders interested in being updated; it improves corporate reputation; it increases benefits aforementioned in the previous sub-chapter. Reputation is in fact dictated by the combination of all the stakeholder's opinions and judgements made upon the company's behaviour. For these reasons it is necessary to establish good rapports with stakeholders that could: strengthen customer's dependence on a brand; make savers willing to make socially responsible investments; make collaborators feel satisfied with the company to which they belong being aware of its CSR (Crivellaro, Vecchiato, Scalco, 2012).

Considering what should be reported for firms' CSR, scholars have recommended that stakeholders would be alerted to all social causes in which companies are involved, like public education, environmental matters, health-linked purposes; it is true that what to disclose is left to the discretion of the firm but it should concern social issues linked to their activities that could significantly increase the credibility (Go, Sevick Bortree, 2017; Kim, Ferguson, 2014).

Another significant debate among scholars about what to communicate concern those who think that the firm should declare values, visions, principled and those who believe in something more concrete like the process' quality, projects' results, R&D matters. Besides, communication should be customized and suitable for each recipient, for instance, the market, the employees, the community, the environment and so on (Crivellaro, Vecchiato, Scalco, 2012).

Besides, as already noted, showing CSR and great expertise increments profits. Other scholars have also found out that third-parties' approvals or certain types of partnerships are indispensable to decrease customers' scepticism about CSR disclosure (Go, Sevick Bortree, 2017; Kim, Ferguson, 2014).

In Kim and Ferguson's article (see 2014, p. 2), it emerges that some previous authors (Morsing, Schultz, 2006; Pomeroy, Dolnicar, 2009; Schlegelmilch, Pollach, 2005) dealing with communication channels, as media or experts, have judged them like more reliable than pure firm-dependent communication.

Firm-generated communication sources comprehend ads, brochure, website, social media, annual reports, instead of independent channels like news media, experts' reports, uncontrolled social media. Social media are very popular since they involve a certain degree

of interactivity. Social media are actually much impactful as both corporations and public can engage and discuss about CSR. In this respect, in order to gain understanding among stakeholders, it is important to create a twin-track communication tool for social and environmental issues. The type of communication tool used depends on the subject to be disclosed, firm's resources and capabilities, audience (Go, Sevick Bortree, 2017, Kim, Ferguson, 2014, Crivellaro, Vecchiato, Scalco, 2012).

For Schlegelmilch and Pollach (2005), Stoll (2002), Webb and Mohr (1998) (see Kim, Ferguson, 2014, pp. 3-4) a massive advertising strategy is not so efficient because it can scatter disbelief in CSR commitment, and the exaggerate expense in CSR publicity is considered as phony. Even if advertising and promotion's costs often depend on the disclosure's recurrence, when stakeholders realise that firms pay out too much in showing their CSR engagement, they tend to see this behaviour as suspicious. Frequency, consistency and transparency¹⁴ are the most relevant factors in this sense (Go, Sevick Bortree, 2017; Kim, Ferguson, 2014).

There are many principles, in fact, to be applied when CSR is being communicating other than consistency, periodicity and transparency. For instance:

- (1) regular commitment;
- (2) verifiability of data;
- (3) completeness of information;
- (4) relevance of special indicators and activities;
- (5) accuracy in order to make stakeholders develop a sort of credibility towards firm's information;
- (6) clarity of data through detailed disclosure;
- (7) comparability over years;
- (8) neutrality avoiding external contaminations and equivocation.

Still talking about how to communicate CSR and, more precisely, about the instruments available to firms, there are different tools suitable to highlight a socially responsible acting. Formal useful and efficient instruments appropriate for lots of sectors are: social and environmental certifications; social, environmental, sustainability and integrated reports (which will be discussed in depth in the next chapter, in particular environmental and sustainability reports); responsible innovation; social marketing; behavioural code; social responsibility (Crivellaro, Vecchiato, Scalco, 2012).

¹⁴ The importance of transparency has been displayed by Coombs and Holladay (2011) (see Kim, Ferguson, 2014, pp. 4-5)

In disclosing CSR, firms can face a criticality when they are selecting the right tone or well-chosen words. From this, many problems may arise greenwashing, overemphasis, opaqueness, and incoherence.

- (1) *Greenwashing* mirrors the companies' attitude to show an environmental positive orientation in order to generate a confident image for their business diverting people's attention from the firms' negative environmental impacts. However, the question deals with smoking out the real or unreal engagement that lies behind the communication.
- (2) Overemphasis arises when a company exceed in underling its values, presenting them as extraordinary. In fact, considering CSR as a values' communication tool it is important to remember that information should be disclosed in an accuracy manner to let the public gets a clear idea.
- (3) Opaqueness may be caused from the lack of clarity and transparency, using complex sentences, distracting addressees from the drawbacks highlighting the positive aspects or through *greenwashing*.
- (4) Incoherence may occur when CSR communication is inconsistent with the corporation's values and activities; this is a crucial aspect, since stakeholders' loyalty and long-lasting relationships are actually built on coherence and belief in disclosed information (Crivellaro, Vecchiato, Scalco, 2012).

3. CHAPTER 2

3.1. SUSTAINABILITY REPORTING

3.1.1. VOLUNTARY DISCLOSURE

In the previous chapter, it has been explained why, what, how and to whom disclose CSR, that it is considered by many scholars as sustainability. In this respect, there are two types of disclosure. However, before addressing the topic of voluntary and mandatory disclosure, it is important to underline the significance of sustainability accounting and disclosure. “Sustainability accounting is the term used to describe new information management and accounting methods that attempt to create and provide high quality, relevant information to support corporations in relation to their sustainable development.” (Schaltegger, Burritt, 2010, p. 377).

As regard mandatory and voluntary disclosure, they are the two different types of corporate declaration. The former is compulsory; therefore, the firm is obliged to disclose some information in order to comply with law. The latter regards additional details that are not mandatorily required by regulations (Shehata, 2015).

Actually, regulations have the objective to make investors’ minimal information requirements satisfied, in order to make effective investment choices easily, as demonstrated by Griffin and Williams (1960), and Wolk et al. (1992) (see Shehata, 2015, p. 18). In this respect, companies can inform investors directly by their financial reports and press releases, or indirectly by way of financial or information intermediaries (Haley, Palepu, 2001).

Meek (1995) considers voluntary reporting a practice freely chosen by executives in order to satisfy information requirements of annual report’s readers in order to take decisions (see Scaltrito, 2016, p. 17).

According to Akerlof (1970), companies presenting higher results are more likely to disclose their performance in terms of social, economic, and environmental perspective to prove their superiority over competitors. Moreover, as claimed by Ross (1979) and Milgrom (1981), firms which obtain scarce results are more reluctant to report their non-mandatory information, but it could be considered as a bad signal by the market (see Scaltrito, 2016, p.18).

Also, voluntary disclosure can be seen as a tool that allows stakeholders to have an overview about the company's sustainability in the long run; moreover, it decreases information asymmetry and agency problems between managers and investors (Healy, Palepu, 2001; Boesso, Kumar, 2007) (see Shehata, 2015, p. 19).

Voluntary disclosure practices can be explained by four main theories in literature, as reviewed by Shehata (2015).

(1) *Agency theory* was proposed by Jensen and Meckling in 1976 (see Shehata, 2015, pp. 19-20), and it is based on the assumption that a party (the principal, who is the shareholder) devolves to another one (the agent, who is the manager) the power to make decisions on his behalf. As they have different interests, shareholders have to pay for monitoring managers' activities (agency costs). Information asymmetry may arise from this situation since managers are more informed than shareholders.

Managers, through voluntary disclosure, can communicate more and reduce agency issues, as demonstrated by Barako et al. (2006); additionally, voluntary declaration can make external users think that executives are behaving in the most efficient way, as Watson et al. proved (2002) (see Shehata, 2015, p. 20).

(2) According to Verrecchia (1983), as a consequence of information asymmetry, the *signalling theory* states that companies tend to signal voluntarily more information to persuade investors and improve their reputation (see Shehata, 2015, p. 20).

(3) According to *capital need theory*, voluntary disclosure supports firms in attracting new capital, debt, or equity, at a lower cost, as demonstrated by Choi (1973) (see Shehata, 2015, p. 20). Actually, the cost of capital embodies a premium that represents the investors' uncertainty about the available information's sufficiency and exactness. Therefore, voluntary disclosure reduces the average cost of capital for companies and investors decrease their probability to misallocate their money (Financial Accounting Standards Board, 2001).

(4) The last theory that justify the adoption of voluntary disclosure is the *legitimacy theory*. According to this theory, companies are legitimate to exist only when their values correspond with those of the society in which they work (Dowling, Pfeffer, 1975; Lindblom, 1994; Magness, 2006) (see Shehata, 2015, p. 20).

This theory relies on the perception of the society; thus, the management has to communicate all the information that could affect external users' perceptions about the firm, as shown by Cormier and Gordon (2001) (see Shehata, 2015, p. 20).

As regards the motivations behind the choice to disclose voluntarily some information, Shehata (2015) assembled six determinants found out by Healy and Palepu (2001) and by Graham et al. (2005).

- ✚ Capital costs transactions and information asymmetry: as demonstrated by Myers and Majluf (1984) (see Healy and Palepu, 2001, p. 420), when managers plan to issue public equity or debt and they do not disclose the superior information they own about the future trend of the business, the transaction results more costly for the company's shareholders. Barry and Brown (1985, 1986) and Merton (1987) (see Graham et al., 2005, p. 55) highlighted the fact that when managers own more information than external investors, the latter demand for a premium in order to compensate the risk they take. In this perspective, voluntary disclosure may reduce this problem.
- ✚ Corporate control motivations: the underlying assumption is that managers are held responsible for stock trend by board of directors and investors. Thus, as suggested by Warner et al. (1988) and Weisbach (1988) (see Healy, Palepu, 2001, p. 421), CEO turnover is correlated with poor results. In this sense, voluntary disclosure may decrease the probability of turnover by disclosing the reasons behind the poor performance (Healy, Palepu, 2001).
- ✚ Increased analyst coverage: Bhushan (1989a, b) and Lang and Lundholm (1996) (see Graham et al., 2005, p. 57) pointed out that managers own information that has not to be mandatorily disclosed. Therefore, voluntary disclosure may decrease the information acquisition expenses incurred by analysts, increasing in this way information availability, and enabling a higher number of analysts to cover that firm.
- ✚ Management talent signalling hypothesis: according to Trueman (1986) (see Healy, Palepu, 2001, p. 424), talented managers, who voluntarily disclose earnings forecasts showing their ability to predict the future business performance, increase market value as it is correlated with the investors' opinion about the management's talent.
- ✚ Limitations of mandatory disclosure: Voluntary disclosure fills the empty space let out by mandatory disclosure, satisfying investors' information needs (Graham et al., 2005). This is the result of the fact that laws and regulations require that just the small amount of information, that enables investors to make choices, has to be declared (Al-Razeen, Karbhari, 2004) (see Shehata, 2001, p. 21).
- ✚ Stock compensation: Since Managers are recompensated through stock-based compensation plans, they are motivated to disclose voluntarily more information for two main reasons. The first is that managers who want to trade their shares have the incentives to declare owned information in order to meet the insider trading rules'

requirements. Actually, managers are encouraged to disclose private information in order to correct undervaluation before the stock option award expires. The second reason is that managers, who behave in the shareholders' interests, are encouraged to report voluntary disclosure to decrease expenses correlated with stock compensation for new workers. This form of remuneration is fair for shareholders and managers if share prices accurately reflect the company value. If not, managers will ask for a premium that offset the risk of wrong value estimation; therefore, companies that use stock compensation plans have incentives to disclose more (Healy, Palepu, 2001).

3.1.2. EUROPEAN UNION DIRECTIVE 95/2014

In the last twenty years things have changed a lot, as the communication of non-financial issues has been treated in deep by scholars and professionals, pushing corporations to modify the way they treat some important factors in the corporate disclosure (Doni et Al., 2019). Researches of Amel-Zadeh (2016) and Amel-Zadeh, Serafeim (2018) underline that (see Gulenko, 2018, p.3) regulatory bodies have imposed firms to disclose about CSR, conscious that this kind of information is fundamental not only for shareholders but also for stakeholders. In this sense, an innovative step in the sustainability reporting has been achieved with the issuance of the European Union Directive 95/2014 of the 22nd October, which has been in force since 2017 (Doni et Al., 2019).

The EU Directive 95/2014 imposes that organisations which belong to EU that count more than 500 employees on average basis at the closing date of the balance sheet, shall publish a consolidated non-financial report which include information about the environment, the society, the workers, anti-corruption and anti-bribery actions, the safeguard of human rights; additionally, companies shall report their policies and how they face connected risks, the results obtained.

As early as August 2018, 6000 companies could be counted as concern the obligation to report non-financial information for the previous fiscal year (Gulenko, 2018).

In this respect, the most crucial questions are the choice of the guidelines to be followed in order to disclose mandatory information, and where put this non-financial matters, if drafting a separate report rather than including it in the annual report, since the directive does not impose anything (Doni et Al., 2019).

Regarding the guidelines that could be accepted, the EU Directive 95/2014 allows a certain flexibility; actually, in the subsection number 9 of the Directive, they are cited, for instance, the UN Global Compact, ISO 26000, OECD Guidelines for Multinational Enterprises, Global Reporting Initiative principles and others.

The amendment of a new tool like a European Directive has aroused many doubts in those who believe that this kind of disclosure was supposed to stay voluntary as a whole instead of mandatory from a certain point of view. In fact, drawing up non-financial report risks of culminating in the merely legislation compliance at the expense of the real quality. Besides, some researchers¹⁵ (see Doni et Al., 2019, p.4) have demonstrated that the EU Directive may be inefficient if the non-financial disclosure lacks of elements or facets, and the comparability between companies' reports may be meaningless.

¹⁵ Van Hulle, 1993; Theunisse, 1994; Thorell and Whittington, 1994; Herrmann and Thomas, 1995.

However, according to Hess (2007), in itself, organisation self-regulation may provoke information asymmetry as it becomes difficult for stakeholders to understand if executives are truly behaving in a responsible way. As a consequence, Lopatta et al. (2016) have concluded that it may be that sustainable performance is undervalued by investors, and reckless acting overvalued (see Jackson, 2019, p. 323).

In this regard, governing bodies promote transparency through laws, to ensure that stakeholders are well-informed about CSR and trust companies. In this way it may be possible to remunerate and honour responsible organisations and penalise irresponsible ones (Jackson, 2019).

In drafting non-financial reports several issues come out, others than deciding where placing the information and the standards to use. Some authors¹⁶ (see Doni et Al., 2019, p.6) found out that compactness and connectivity of non-financial disclosure are incisive elements.

As regards the sustainability disclosure specifically, that is covered over the present entire work, the EU Directive 95/2014 states basilar information to be declared, environmentally speaking: actual and likely activities' impact on the territory and the wellbeing of individuals; water usage; atmosphere pollution; the greenhouse gas emissions; renewable and non-renewable energy sources employed. In respect to social matters, organisations shall report policies that show the engagement in gender non-discrimination; working state; regard trade unions rights and employees' right to be updated; safeguard and discuss with local communities and so on.

To shed light, (Cominetti, Seele, 2016) there are several guidelines with different degrees of compulsion, accuracy and delegation. Skimming in this manner, there are hard law and soft law. The former ones are binding, more specific and tend to assign the interpretation to third parties; the latter are voluntarily adopted, less precise and the meaning of the law is left to the concerned parties.

Therefore, there are four sub-categories of law (Cominetti, Seele, 2016):

- (1) Soft soft laws: they are voluntary guidelines, and the non-conformation does not imply punishments or, at most, soft ones. Among these standards there is the United Nations Global Compact (treated in the next sub-chapter), which is deliberately accepted by companies; in this case, the associates of the initiative that do not comply with the obligation of disclosing every year the steps reached may be punished with the expulsion.
- (2) Hard soft laws: they are intentional guidelines that imply soft punishment in case of noncompliance and that are very structured; an example of this kind of law are Global

¹⁶ Melloni et Al., 2017; Michalak et Al., 2017; Sinnewe, 2017

Reporting Initiative standards (treated in the next sub-chapter too). GRI, are structured in the sense that its principles to follow, when the report is being drafted, are very specific.

- (3) Soft hard laws: they are mandatory law but with a low degree of formalisation that provide soft penalisation in case of noncompliance; among these laws there is the aforementioned EU Directive, which is imprecise and smooth in the application. Statements drafted are, actually, controlled but non verified.
- (4) Hard hard laws: these laws are mandatory and very formalised, for this reason the noncompliance is strongly punished through the application of severe civil and penal penalties.

3.1.3. SUSTAINABILITY REPORTING

As ascertained in the previous subchapter, non-financial disclosure is mandatory for large organisations that respect EU Directive's requirements. In this perspective, it is also useful to analyse voluntary tools available to companies to present non-financial information. Reporting frameworks, that follow the triple bottom line approach treated in chapter 1, are: social report, environmental report and sustainability report.

The social report is the most popular kind of reporting to disclose social performance through dedicated numerical and qualitative gauges. This statement is separated and independent from the ordinary accounting documentation. The social report is considered as a complementary tool that allows to comprehend better the information and the items presented in the annual report. The aim of firms which use this type of disclosure is to keep their stakeholders informed about activities and results, social, economic and environmental impacts, increasing transparency; to depict the overall picture of the performance to encourage dialogue and communication; to be focused on the company's results in order to achieve improvements. (Persico, Rossi, 2016; Crivellaro, Vecchiato, Scalco, 2012).

It is important to underline that the objective of the social report is to evaluate the coherence between the real targets reached and the goals set in line with the core values of the organisation. To ensure comparability among social reports, there are several guidelines that may be followed during the drafting process, for instance, AccountAbility 1000, London Benchmarking Group, Business in the Community (Crivellaro, Vecchiato, Scalco, 2012).

Due to the recent care and attention for the environment, an increase in regulation that promotes its safeguard and the society's awareness, environmental damages have been concerning more business activities. Time ago, the territorial element represented just the outline of the overall organisation management, but nowadays it has become a fundamental factor that must be considered in the corporate planning. In this sense, environment has started to assume the role of a strategic component (Persico, Rossi, 2016).

The environmental report is an accounting environmental instrument that shows the interactions between the company and the surrounding territory. The disclosure contains indicators which explain the environmental performances through qualitative and quantitative information related to activities that affect the environment. Many indicators to understand environmental results are the environmental management, the way that issues are faced; absolute measures of elements that influence the territory; probable impacts of the company's

activities; actual change of the environment due to the business (Crivellaro, Vecchiato, Scalco, 2012).

As the social report, also the environmental report is addressed to stakeholders like the management, shareholders, politicians, competitors, customers, suppliers, local communities, mass-media, employees, banks, insurance agencies, environmental organisations. The structure of the environmental report includes monetary and numerical information about materials employed, scraps, garbage, air pollutants, water contaminants, soil defilement, noise, energy consumption, waste management. From this disclosure the firm can benefit from the waste detection, individuation of new technologies that would affect less the environment, safeguard the whole ecological system, understand business criticalities connected with environmental impacts, development of tools that improve this kind of communication in order to better the company's reputation and the stakeholders' trustworthiness (Crivellaro, Vecchiato, Scalco, 2012).

At the beginning of the environmental reporting era, in the middle of '80s, reports were drafted mainly by German, English and Nordic steel and chemical industry. The first Italian report was drawn up in 1992 by IBM (Persico, Rossi, 2016).

From the environmental report it is possible to derive the Input-Output Report that includes all relationships between the ecosystem and the organisation. This latter tool is a sort of inventory, comprehensive of all resources and materials used in productive process and the related impacts and output. Therefore, the document contains raw materials amount, energy consumed, water employed, liquid and air emissions, dangerous waste, radiations and so on. Another document, always obtained from the environmental report, is the Life Cycle Assessment (LCA), which evaluates how a specific product, along its total life, affects the environment¹⁷ (Persico, Rossi, 2016).

In the ecological disclosure, a relevant aspect concerns accountability, given that some expenses directly incur to prevent the organisation from any typology of pollution. The significance of these costs is high; therefore, it is essential that the companies monitor, verify, and plan the expenditure attributing them to the products responsible for (Persico, Rossi, 2016).

The sustainability report is the disclosure framework studied in my dissertation and it involve the communication of the environmental and social engagement, the whole mixed with the economic results information.

¹⁷ The Input-Output Report refers to the process; the LCA regards the product during its existence, from the materials extraction and transformation, to the usage and the waste.

In this sense the report may be viewed as the blend of the social and the environmental reports (Persico, Rossi, 2016; Crivellaro, Vecchiato, Scalco, 2012).

Based on the concept of sustainability that embraces three dimensions, the report includes:

- (1) Economic sustainability, which regards the organisation's capacity to create value added for itself and the society through the retribution of the parties, as banks, government, employees and so on;
- (2) Environmental sustainability, that concerns, as said before, the safeguard of the territory, understanding the impacts of the activities and resources used;
- (3) Social sustainability, which deals with ensuring the health protection and safety of the workers inside the company and preserving human rights.

Through the sustainability report it becomes possible to join different business functions, from the marketing one, to the human resources one or to finance department. The recurring disclosure of social, economic and environmental subjects increases financial stability, reducing investors' fluctuating decisions. Additionally, sustainability reports are mainly sketched following the Global Reporting Initiative guidelines that will be treated in the next subchapter (Persico, Rossi, 2016; Crivellaro, Vecchiato, Scalco, 2012).

Recently, the advent of rating agencies which assess sustainability matters has made this kind of report more valuable and strategic, allowing companies to be judged from three points of view and not only from the financial one. Rankings determined by the agencies are able to influence stakeholders' opinions with respect to organisations. For these reasons, over years the attention paid to the sustainability report drafting has increased and new job positions, like the sustainability manager, have been created (Persico, Rossi, 2016; Crivellaro, Vecchiato, Scalco, 2012).

Actually, to understand the numerical trends over years of corporate responsibility reporting¹⁸, one can refer to KPMG periodically reports.¹⁹ KPMG makes research about N100 and G250²⁰ showing the evolution of the reporting rate.

In the most recent report (KPMG, 2017), the percentage of companies that have drafted the corporate responsibility reporting was 75% for N100 and 93% for G250. The growth tendency is positive: the historical data of N100 date back to 1993, starting from a 12% and the proportion has been continuing to increase, except for a small drop was registered in 2002. As regards G250, data has been collecting since 1999 with a 35%; the trend is always positive except from 2011 to 2015, during which a slight decline (3% over 4 yers) was accounted.

¹⁸ I assume, as already discussed, that CSR reporting can stand for sustainability disclosure

¹⁹ The 2019 or 2020 report has not been published yet

²⁰ N100 includes the biggest organisations in terms of revenues of 49 Nations; G250 comprehends the 250 biggest firms per revenues based on the Fortune 500 ranking of the previous year with respect to the report

Below, the chart depicted by KPMG shows more specifically the percentages reported each year²¹.

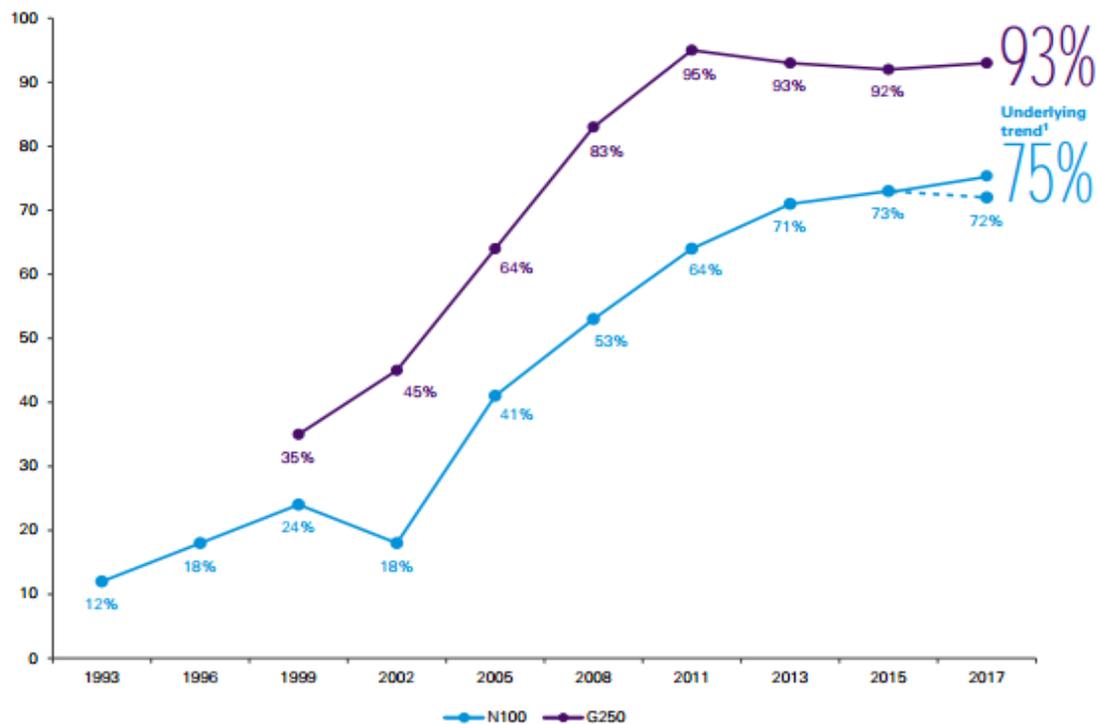


Figure 4: Growth in global CR reporting rates since 1993
Source: KPMG, 2017, p. 9

From 2015, huge increments in CR reporting were registered due to the implementation of new regulations. For instance, Mexico recorded a significant jump from 58% in 2015 to 90% in 2017; Taiwan from 77% to 88%. As regards Italy, the Country has registered over the 2 years gap a small increase of 1%, reaching the 80% (KPMG, 2017).

As said before, reporting non-financial information, regardless of the fact of stating a single report for it or including it in the annual report, has become mandatory for large companies since the fiscal year 2017. Despite this, the real effects of the European Directive 95/2014 were not really evident in KPMG report of 2017.

At the time of the last publication CR disclosure, G250 which include non-financial information in their annual reports were 78%, against the 44% in 2011.

An important environmental topic linked to the CR reporting concerns the climate risk reporting. From the KPMG 2017 analysis, it appears that, among the 250 greater corporations in terms of revenues, less than 48% acknowledged the climate risks. Even so, there are many differences of percentage between States: French firms that dealt with climate issues, in 2017, were 90%, against the 48% of Japanese ones.

²¹ The 72% referred to N100 in 2017, below the 75%, includes 5 more States not incorporated in the previous sample

In this regard, it is noteworthy the legally binding Paris Agreement derived from the conference in December 2015²²; the European Union officially ratifies it in October 2016. The Paris Accord provides worldwide initiatives in order to prevent from serious climate changes and consequences that may harm the world.

The aim of the agreement is to reinforce the global reaction to the danger put in place by climate modifications. It is important to set the increase of the universal mean temperature inferior to 2°C, over pre-industrial degrees and have a target of 1.5°C; to decline the production of greenhouse gas; encourage sustainable development. In this sense, the parties of the arrangement shall implement national initiatives to contrast climate issues and reach temperature objectives. To support this cause financial resources and new technology are required. Additionally, every five years, all governments meet to take stock and assess the progress made and encourage the improvement of the national determined contributions (NDC), updating the other parties about the manoeuvres practised to safeguard the climate (United Nations, 2015).

In the KPMG report of 2015, when disclosing non-financial information was not yet mandatory, climate concerns, in particular carbon reporting, have been already treated. KPMG investigated about G250 carbon declaration in annual reports and CR reporting, suggesting to firms to be clear and transparent, revealing the organisation's results with respect to the carbon targets and inform stakeholders about advantages derived from the cutting down of the carbon outflows (KPMG, 2015).

Findings (KPMG, 2015) showed that in 2015, only one third of the companies, which disclosed carbon target, explained why the goal was actually that and 47% did not even declare carbon target; just half of the total disclosed carbon information in their statements; transport and leisure sectors reported the most and oil and gas, which is actually a high carbon sector, the least. Among countries of G250, the best disclosers in terms of target declaration and information inclusion, are Germany and UK. Instead, considering companies that make use of independent assurance societies for their carbon information, France and UK stood out, recording a 100%.

²² All information are available on the official website of the European Union: <https://ec.europa.eu/clima/policies/international/negotiations/paris_en> and of the United Nations Framework Convention on Climate Change: <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>>

In the KPMG 2017 report, another relevant subject arises: Sustainable Development Goals (SDGs), which are shown in figure below. It appears that 39% of N100 linked the CR report to SDG and 43 % of G250. In the top ten raking, the tenth Country is Italy where 41 firms over 100 connect CR with SDG (KPMG, 2017).



Figure 5: SDGs

Source: United Nations website:

<<https://www.un.org/sustainabledevelopment/news/communications-material/>>

On the United Nations Development Programme website²³ there is detailed history of the SDGs' birth. These 17 economic, political and environmental objectives were designed in 2012, for the Rio de Janeiro Conference occasion. The goals were created in order to replace the old Millennium Development Goals (MDGs) of 2000 to counteract poverty, starvation, killer diseases and to spread children schooling.

In 2015, the United General Assembly issued a complete set of 169 targets that would have coordinate developing States as well as developed Countries (Pradhan et al., 2017).

The SDGs are meant to be followed for a period of 15 years before being updated in 2030, covering several subjects: poverty (1, 5), dignity (2, 3, 4), planet (6, 12 – 15), partnership (17), justice (16) and prosperity (7 – 11) (Leal Filho et al., 2017).

²³<[41](https://www.undp.org/content/undp/en/home/sustainable-development-goals/background.html#:~:text=The%20Sustainable%20Development%20Goals%20(SDGs,economic%20challenges%20facing%20our%20world.>></p>
</div>
<div data-bbox=)

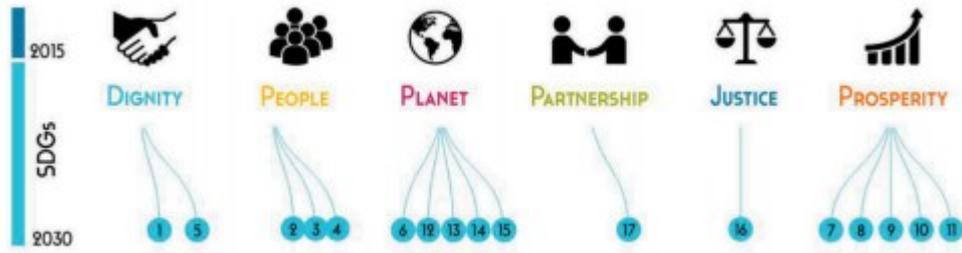


Figure 6: Thematic areas and sustainable development goals
 Source: Leal Filho et al., 2018, p. 133

However, Nilsson et al. (2016) research demonstrates that the complexity of the battles to be fought, following the targets, may lead to opposite results, since SDGs are interconnected (see Pradhan et al., 2017, p. 1169).

Pradhan et al. (2017) work investigates synergies and trade-offs, and therefore positive and negative correlation, between SDGs. For instance, *Decent work and economic growth* (SDG 8) is in conflict with 12 other SDGs (1 – 7, 9, 10, 13, 15, 17); *Industry, innovation and infrastructure* (SDG 9) is negatively correlated with 9 SDGs (1, 2, 4, 6, 8, 11 – 13, 15). Moreover, developed Nations, which ensure a stronger well-being, shall face an important ecological and material challenge to reach *Responsible consumption and production*. As regards synergies, *No poverty* (SDG 1), *Good health and well-being* (SDG 3) and *Clean water and sanitation* (SDG 6) are notable.

Given the focus on environmental thematic in the next chapter, SDG 14 and SDG 15 are particularly noteworthy: *Conserve and sustainably use the oceans, seas and marine resources for sustainable development* and *Protect, restore and promote sustainable use of territorial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss* (Leal Filho et al., 2018).

3.2. GLOBAL REPORTING INITIATIVES STANDARDS

3.2.1. GRI'S HISTORICAL OVERVIEW

These next paragraphs treat in depth Global Reporting Initiatives principles, as the firm selected to be analysed in the empirical part follows these standards.

Despite this, it is informational to underline that other guidelines and tools to judge and draft sustainability reports exist. Marimon et al. (2012) listed these methods in the literature review section; thus, before overviewing GRI principles and its historical path and development, few other methodologies are presented below.

*UN Global Compact Principles*²⁴ provide general standards world-widely accepted that deal with anticorruption, stopping any types of inducement oppression, coercion; human rights preventing from any forms of abuses; labour, avoiding forced work or employment of children; environment, safeguarding the territory and promoting green technologies (Marimon et Al., 2012).

Another set of principles are *OECD Guidelines for Multinational Enterprises*²⁵, that have the aim to improve the economic and social environment to better people's lives; they concern, as the previous guidelines, ecological territory, bribery, human rights, working contexts, taxation and so on (Marimon et Al., 2012).

Then, it can be found the *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policies*²⁶ that assist companies in being environmentally socially responsible, suggesting a series of statements for organisations, employers, governments about subjects like training, employment, conditions of work and life and industrial relations.

Among social responsibility tools there is ISO 26000 which is a support for all kind of organisations in drafting sustainability reports (Marimon et Al., 2012).

As regards social and ethical responsibility AA1000 Framework²⁷ is popular, providing support to firms in developing their accountability and social responsibility (Marimon et Al., 2012).

²⁴ On the website the ten principles are available: <<https://www.unglobalcompact.org/what-is-gc/mission/principles>>

²⁵ On the website the guidelines are available to be downloaded in several languages: <<http://mneguidelines.oecd.org/guidelines/>>

²⁶ In order to find more information the following official website reports the principles upon which the guidelines are based on: <https://www.ilo.org/empent/areas/mne-declaration/WCMS_570332/lang-en/index.htm#:~:text=The%20Tripartite%20declaration%20of%20principles,responsible%20and%20sustainable%20workplace%20practices.>.

²⁷ Principles are downloadable on the website: <<https://www.accountability.org/standards/>>

Speaking of human rights, it should be recalled SA88000²⁸, which states laws about everything concerning the working treatment. “It is an auditable certification standard based on international workplace norms of International Labor Organisation (ILO) conventions, the Universal Declaration of Human Rights and the UN Convention on the Rights of the Child” (Marimon et Al., 2012, p.134).

Finally, before mentioning GRI, among environmental focused framework there is ISO 14001, that gives support to corporations for ecological issues (Marimon et Al., 2012).

Switching to GRI, in the official website of Global Reporting Initiative²⁹ a detailed history is available. In 1997, GRI was created in Boston, in the United States thanks to the non-profit organisation CERES³⁰, the Tellus Institute and the engagement of the UNEP³¹. In charge of this initiative there were the Executive Director of CERES Robert Massie and the Chief Executive Allen White who wanted to draw up an accounting framework to be respected by firms to safeguard the environment and it would be addressed to investors.

The first round of accountability principles was completed in March 1999. Few organisations served as pilots in following the set of standards, like Baxter, Body Shop, Bristol-Myer Squibb, British Airways, Eastern Group, Electrolux, FSB AB, Excell Industries, Ford, Henkel, ITT/ Flygt, KST Hokkaido, NEC Corpn., Novo Nordisk, Proctor & Gamble, Riverwood International, SOSAL, Shell, Sunoco and Van City Credit Union. At the beginning, the guidelines furnished suggestions about what the reader would have expected to find declared in the sustainability report, that had, predominantly, an environmental footprint (Bebbington, 1999).

Bebbington (1999) in his work *The GRI sustainability reporting conference and guidelines* selected Eastern Group (an English company of the electricity industry) to analyse the strengths and the weaknesses of one of the 21 pilots-firms above mentioned. Its report included ecological information typical of an electricity utility company like global warming, acid rain and also social and economic concerns as fuel distress and fair transactions with suppliers. Eastern Group also reported environmental risks and the way they were dealing with it and presented social issues they made their disclosure not only a simple environmental report. As regards weaknesses, for instance, Bebbington pointed out that sometimes the report

²⁸ More information is available and updated on the website: <<https://sa-intl.org/programs/sa8000/>>

²⁹ The source of information of these paragraphs is available on: <<https://www.globalreporting.org/information/about-gri/gri-history/Pages/GRI's%20history.aspx>>, consulted on 11th August 2020. When the source used differs from GRI, it is specified

³⁰ CERES stand for Coalition for Environmentally Responsible Economies

³¹ UNEP stands for The United Nations Environment Programme

cited sustainable business, and this could alienate the real focus on collectivity and territory that are in the author's opinion the main sustainability's concerns.

Already one year later a Steering Committee was built up to control the organisation and social and economic concerns were introduced and the sustainability Reporting Guidelines were published in 2000³².

GRI became an uncontrolled non-profit organisation in 2001, detaching itself from CERES; in the following year another version of the standards was made, G2, which remained in effect until 2006.

During this year G3 was drafted and the request for guidelines to follow to draw the sustainability report has highly increased. In writing this third version, more than three thousand specialists took part of this process showing the real multi-stakeholder approach on which GRI is based. G3 was presented at the Global Conference on Sustainability and Transparency, that took place in Amsterdam enjoying the presence of over one thousand people who appeared for corporations, financial market, collectivity, labour and so on.

Despite this, GRI received many criticisms, (Moneva, Archel, Correa, 2006) as they were used in an unfair manner, as many firms had pretended to be GRI disclosers, but actually they were not acting responsibly³³. This discrepancy (Larrinaga et al., 2002; Owen, Gray, Bebbington, 1997) could be due to an incorrect understanding of the definition of sustainable development or to GRI standards' inability to convey the concept sustainability. Sustainable development was merely intended as providing details about economic, social and environmental measures, and this creates a hole between firm performance and firm influences and effects. Therefore, the Global Reporting Initiative principles could be seen like "an administrative reform that is insufficient to enable new accountability relationships" (see Moneva, Archel, Correa, 2006, p.122).

Bebbington (2001) (see Moneva, Archel, Correa, 2006, p.130) considered the development of precise principles delineating the borders of the communication like a complicated challenge and that had evolved in an essential need. To mark out the edges, Global Reporting Initiative was progressing the idea of an operational and a temporal extent, concerning the reporting company's stakeholders, with the purpose of accounting for economic, ecological and social effects of the company that had drafted the report. In this sense, confining disclosure just to certain sections of the corporation activities, it may have determined the presence of company hidden unsustainability.

³² The source of information of these paragraphs is available on: <<https://www.globalreporting.org/information/about-gri/gri-history/Pages/GRI's%20history.aspx>>, consulted on 11th August 2020. When the source used differs from GRI, it is specified

³³ Like "some health care companies in South Africa" (Moneva, Archel, Correa, 2006, p.122)

In 2010, *GRI and ISO 26000: how to use the GRI Guidelines in combination with ISO 26000*³⁴ was published regarding the relationship between the two standards with respect to social responsibility. Besides, a Memorandum of Understanding was formed with the UN Global Compact, for the occasion of the third sustainability conference, with the objective that GRI would include the ten UN pillars in following version of GRI guidelines³⁵.

In 2011, the G3 edition underwent to a revision that embraced an enlargement of principles inherent in gender, human rights performance. In 2012, as mentioned in the previous chapter, Rio+20 UN conference about sustainability in which also GRI participated.

In 2013 for the fourth GRI meeting, G4 guidelines were written to ensure an accounting framework and an implementation guide to be followed in drafting sustainability reports, suitable for each kind of firm's size and industry. The next year the GRI Index Service was created to offer a validation system for the precision and lining up of the Content Index of G4-founded disclosure.

In 2014 the European Union Accounting Directive about reporting non-financial details became effective boosting the GRI usage. In the same period, with the new CEO M. Meehan, a higher degree of transparency was promoted for all the guidelines and a modern Global Sustainability Standards Board (GSSB) was built.

During 2015, in which the fifth GRI congress took place, GRI created an assessment consisting in sixty questions that allows people to understand their competences to follow and adhere G4 standards. After the exam, those who have completed it gain an attestation and have their firm posted on the GRI website.

The last update of GRI standards occurred in 2016³⁶ by GSSB, with the publication of worldwide guidelines for sustainability reports, which allow firms to disclose economic, social and environmental performances. The innovation with respect to G4 lies in the easier framework, more straightforward, with understandable requisites and more flexibility. Actually, the content of new GRI standards arise from G4, thus, for a firm that has already been reporting sustainability using it, the consequences of the application is smaller³⁷. All sustainability reports drawn up after the first July 2018 are prescribed to be in conformity

³⁴ ISO 2600 is a standard drawn up in 2010 which has the aim to be followed in order to contribute to the sustainable development in relation to the social responsibility. It deals with the trends, features, definition of CSR; the identification and engagement of stakeholders; the communication of the company's performance and commitment and so on (Crivellaro, Vecchiato, Scalco, 2012, pp.124-15)

³⁵ The source of information of these paragraphs is available on: <<https://www.globalreporting.org/information/about-gri/gri-history/Pages/GRI's%20history.aspx>>, consulted on 11th August 2020. When the source used differs from GRI, it is specified

³⁶ Other updated came into force in 2018 for certain principle like GRI 303 and GRI 403, that will be discussed in detail in the next paragraph

³⁷Source: <<https://www.globalreporting.org/standards/questions-and-feedback/transitioning-from-g4-to-gri-standards/>>

with GRI standards, if it is not so the report cannot be supposed to be GRI-founded. In case that a company drafts its own report following the ancient principles G4 it is just considered GRI-referenced, due to the flexibility that GRI grants.

GRI's mission is to ensure that organisations make choices that allow social, environmental and economic advantages for people. Following GRI principles enables corporations to build relationships with stakeholders, improve the image and the reputation, increase fidelity, safeguard the territory, and better collectivity lives. All companies can choose to refer to GRI standards: private, public, of every size³⁸.

³⁸ Source : <<https://www.globalreporting.org/information/about-gri/Pages/default.aspx>>, consulted on 11th August 2020

3.2.2. GRI STANDARDS IN DETAIL

As said before, sustainability reporting, based on GRI standards, is an accounting framework that discloses economic, environmental and social effects, beneficial or unbeneficial, in the perspective to reach sustainable development. In this way, stakeholders can make informed choices, considering the corporation's impacts (GRI, 2016).

GRI standards are formed by several interrelated principles, divided into four categories: series 100 which comprehends GRI 101 *foundation* about accounting principles, GRI 102 *general disclosure*, GRI 103 *management approach*; series 200, 300, 400 that include specific and detailed standard connected, respectively, to economic aspects, environment and society. To sketch a sustainability report of a certain calibre GRI principles are essential.

GRI 101 incorporates few precepts³⁹ to outline the content, that are:

- ✚ “Stakeholders inclusiveness”: the corporation in its report must define the stakeholders, which definition has been stated in the previous chapter, and list how it has answered to their needs, requirements, demands, projections. It must be remembered, however, that not all stakeholders will read the sustainability report and that some of them are not able to declare their own vision.
- ✚ “Sustainability context”: the firm has to collocate its activities in the broader meaning of sustainability showing how its performances degrade or progress the economic, ecological and social environment. Regarding this principle it is important the analyse the performance considering the restrictions and requirements imposed on ecological and social resources in the local, regional and international perspective.
- ✚ “Materiality”: it is fundamental that the information disclosed are relevant in terms economic, financial, environmental and social effects and that affect stakeholders' choices. In this sense, it is important to set a threshold above which a thematic is considered material; for instance, it may concern stakeholders' worries, social expectations, supply chain's needs, the mission of the corporation.
- ✚ “Completeness”: the report must contain all material themes and their borders in a satisfactory manner to allow report's addressees to understand the corporation's performance in social, financial and ecological way. Information reported shall be completed with respect to the time they refer to, they shall include subsidiaries, joint ventures.

³⁹ The following information are taken from (GRI, 2016; Persico, Rossi, 2016, pp. 95-105; Marimon et al., 2012, pp.132-144)

In GRI 101 several quality standards are enclosed to determine the goodness of the sustainability report, granting a suitable description of the subjects faced:

- ✚ “Accuracy”: the information disclosed must be enough and precise to understand the company’s results; qualitative and quantitative measures shall be reported, together with techniques employed to gather data, margin of errors.
- ✚ “Balance”: the report must show the two sides of the coin, beneficial and damaging aspects to have an overall image of the ongoing activities. It is important that amount of information disclosed for a certain topic is proportional to the relevance of it.
- ✚ “Clarity”: information shall be handy and comprehensible for stakeholders, it is better that several summaries, indexes, tabs, graphs are shown.
- ✚ “Comparability”: reports shall be drafted in a similar way to allow to understand how performances are modified through time; it is an essential feature also to enable among other organisations.
- ✚ “Reliability”: subjects reported shall be sound and trustworthy, ensuring the value of what is disclosed and allowing stakeholders to track down the sources of information to prove verifiability of them.
- ✚ “Timeliness”: sustainability reports shall be drawn up on a recurrent basis in order to make reasonable choices analysing activities over regular periods and information shall be recent and be referred to the period declared.

Considering that I will investigate, in the next two chapters, the environmental matter, it is appropriate to dig a little deeper in GRI ecological standards. Currently, nine different principles⁴⁰ are in force: from GRI 301 to GRI 308⁴¹.

- (1) GRI 301 2016 “Materials”: the company shall disclose the volume or the weight of products employed for generating and boxing the most important commodities; the proportion of recyclable raw substances used in the process; proportion of recovered products and their boxing inputs for each product class and explain how information has been gathered.
- (2) GRI 302 2016 “Energy”: it is essential to report the total amount of renewable and non-renewable energy consuming indoor and outdoor the firm, the kind of source of

⁴⁰ Every principle cited below are taken from the downloadable fold of the GRI website after registration. The names of the standards are directly copied to avoid any misunderstanding.

⁴¹ GRI 303 is divided in two parts, currently: water (old version 2016, it can be used until the thirty-first December of 2020) and water and effluents (updated version 2018, it will enter into force the first January of 2021).

energy employed and how data are calculated; the energy intensity; the total decrease in energy consuming due to improvements in efficiency specifying the category of fuel; the lowering of energy need for traded products and services.

- (3) GRI 303a 2016 “Water”: the sustainability report shall include the volume of water withdrawal define the origin; the impact of these actions on the sources of water; the volume and the proportion on the sum of the recycled water.
- (4) GRI 303b 2018 “Water and effluents”: the sustainability report shall provide information about the interoperation with water, indicating the withdrawal, the consuming, the release, considering the activities’ impact on this source; it is important to underline the objective related to water⁴²; precise the principles followed with respect to the quality of the water outlet; it shall be indicated also the activities that impact, and thus the effects, on sources of water.
- (5) GRI 304 2016 “Biodiversity”: the report shall provide the information about all sites own, leased or near of protected areas and with the presence of consistent biodiversity outer the safeguarded territory; the effects of manufacturing and products on biodiversity; the details of protected areas; declare protected species (on IUCN⁴³ red list and national conservation list) affected by firm’s activities.
- (6) GRI 305 2020 “Waste”: the sustainability report shall include the whole amount of litter, specifying the different constituents; waste diverted from disposal dividing in hazardous⁴⁴ and non-hazardous and defining the process of recovering; rubbish directed to disposal recognizing hazardous and non-hazardous litter and precisning the type of removal.
- (7) GRI 306 2016 “Emissions”: the company shall declare on a chosen recurrent period the total direct and indirect volume of greenhouse gases (GHG) rates, carbon dioxide, global warming potential, techniques of computation, origins of emissions; the intensity of GHG emission; the decrease in GHG outflows due to particular actions; the production of all ozone-depleting substances that may damage the ozone coat (ODS⁴⁵); issuance of nitrogen and sulphur oxides.

⁴² In the new version of GRI 303 it is recommended to disclose the water usage over the whole value chain to which the firm belongs.

⁴³ IUCN is International Union for Conservation of Nature: <<https://www.iucn.org/>>

⁴⁴ It is meant every litter with features contained in Annex III of Basel Convention or considered hazardous by the National law. Source: GRI 305.

⁴⁵ Under the Montreal Protocol all ODS are reported in the following website: <<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>>

- (8) GRI 307 2016 “Environmental Compliance”: the corporation shall disclose non-monetary punishments and notable penalties due to the non-compliance with regulations and environmental laws, describing shortly the issue has developed.
- (9) GRI 308 2016 “Supplier Environmental Assessment”: it is important that the report contains the proportion of new suppliers found considering environmental standards and through due diligence; the number of suppliers that may affect badly the territory and declare the termination with them; current or likely ecological antagonistic effects on supply chain.

4. CHAPTER 3

4.1. CONTENT ANALYSIS

4.1.1. CONTENT ANALYSIS DESCRIPTION

In this chapter I will face two important topics: the first one concerns the methodology used in the final chapter for my empirical research. In this sense, I review the literature of the content analysis and, in particular, I will go through the index chosen. The second topic regards the company I have decided to analyse and the reasons behind this choice.

Starting from the beginning, Miles and Huberman (1994) and Tesch (1990) have demonstrated that since '90s scholars have been keener to employ qualitative practices to analyse business occurrences. The aforementioned content or text analysis is a sort of mixture between qualitative and quantitative analysis that allows to study many complex topics, as proven by Carley (1993), Morris (1994) and Woodrum (1984) (see Duriau, Reger, Pfarrer, 2007, p. 5).

Scholars like Shapiro and Markoff defined, in 1997, content analysis as “any methodological measurement applied to text (or other symbolic materials) for social science purposes”⁴⁶.

As shown by Sapir (1944) and Whorf (1956), the context analysis' key point is the language relevance in the human perception and awareness. Easily speaking, word recurrence is supposed to be a good proxy of cognitive relevance (Huff, 1990). In fact, one of the fundamental assumptions, on which content analysis is based, is that a certain set of words discloses latent topics (Huff, 1990; Weber, 1990) (see Duriau, Reger, Pfarrer, 2007, p. 6).

Among the benefits related to the usage of the content analysis there are (see Duriau, Reger, Pfarrer, 2007, p. 7):

- (1) the flexibility of the method; actually, it is applicable to a wide set of organisational issues, as corporate social responsibility subjects, not easily analysed through numerical methodologies (Ullmann, 1985). Besides, longitudinal studies are enabled

⁴⁶The work of Shapiro and Markoff I refer to is Shapiro, G., Markoff, G. (1997). In C. W. Roberts (Ed.), *Text analysis for the social sciences: Methods for drawing statistical inferences from text and transcripts* (pp. 9-31). Mahwah, NJ: Lawrence Erlbaum Associates, in particular page 14. However, on 17th September the work is not free downloadable; therefore, the citation is taken from: Duriau, Reger, Pfarrer (2007), p. 6

- by the accessibility of similar firm's disclosure over years, like reports (Jauch, Osborn, Martin, 1980; Kabanoff, 1996; Weber, 1990);
- (2) this research method being non-invasive, since it is applied to documents and does not require any face-to-face modalities, it allows to avoid any difficulties to contact people (Morris, 1994);
 - (3) this research method is safe, as it enables scholars to adjust the study's skeleton whenever errors are unmasked all along the analysis (Tallerico, 1991; Woodrum, 1984);
 - (4) if the text analysis is rightly structured, after having assessed the soundness of the model, it enables to develop a repeatable database (Lissack, 1998; Woodrum, 1984);
 - (5) through content analysis, expenses can be maintained low and can be suitable for small scale analysis (Erdener, Dunn, 1990; Woodrum, 1984)⁴⁷.

To deal more precisely with the organizational and, in particular, with environmental subjects, that is the fulcrum of my thesis, from literature review it emerges that many researches have tried to assess environmental communication concentrating on information available on firms' reports right through the usage of the aforementioned content analysis (Milne, Adler, 1999). For this reason, text analysis appears like the most suitable method to be adopted in the next chapter.

⁴⁷ All the authors cited until this note are directly taken from: Duriau, Reger, Pfarrer (2007)

4.1.2. INDEX ASSESSING THE QUALITY OF ENVIRONMENTAL DISCLOSURE

In order to assess the evolution of the environmental disclosure contained in the sustainability reports of the company, I selected, among content analysis methodologies, the Clarkson et al. index of 2008.

The aim of my thesis is, in fact, to demonstrate the evolution of the environmental disclosure over 18 years, with a longitudinal and qualitative analysis, to prove or not the improvement of environmental communication and care.

The choice of this specific index is based on the fact that:

- (1) there are not many and recent content analysis instruments available in literature that match with the purpose of my dissertation. This index, in fact, (Clarkson et al., 2008) catches the quality of environmental disclosure in relation to the territorial safeguard engagement better than other indexes do. Moreover, the Clarkson et al. index is published on a well-known magazine that is *Accounting, Organisations and Society*;
- (2) the scheme of the index is built in accordance with the essence of GRI principles that is coherent with the firm I will analyse, since it adopts GRI 16 years out of 18;
- (3) it is the most used index for environmental disclosure in accounting journals;
- (4) in my personal opinion an index of 2008 is a good compromise since I deal with reports drafted both after and before 2008;

Clarkson et al., with the support of a specialist, listed a series of 95 items, all weighted at the same way, appropriate for evaluating the environmental section included in sustainability reports or in corporate social responsibility documentation (Clarkson et al., 2008).

To explain more precisely how the index works, it is relevant to underline the distinction between the first 79 hard indicators⁴⁸ and the following 16 soft items⁴⁹. The former are reliable declarations concentrated on objective measures that communicate the performance; the latter are, difficultly demonstrable, assertions of the engagement towards the environment. On one hand, soft disclosure regards statements about managerial claims to be engaged in the environment safeguard with no substantiation or details that could trick, given the low reliability. On the other hand, hard disclosure concerns more precise information that, for instance, deals with the presence or the absence of a particular verifiable aspect (Clarkson et al., 2008).

⁴⁸ From A1 to A4, as it can be seen in the following figure

⁴⁹ From A5 to A7, as it can be seen in the following figure

The score is assigned with respect to the presence or not of that precise item in the report: if the information is disclosed, it is associated 1; on the contrary, if nothing is declared, it is associated a 0. In this sense, 79 is the greatest score for hard items and 16 for soft ones, the total accounts for 95 points.

- ✚ A1 section is referred to the governance organization and management arrangements followed regarding the ecological safeguard;
- ✚ A2 category spotlights the company's communication credibility in relation to the environmental subject. For example, corporations which gained independent assessment of their disclosure will obtain greater rating;
- ✚ A3⁵⁰ focus on the companies' reporting of some particular results linked to the environment, measures of pollutants and so on. In communicating these items, companies can make stakeholders aware of their environmental engagements. Also, reporting the historical data is recognised as a good sign that increases the score of the firm. Item 5 of this category embeds TRI that stands for Toxic Release Inventory. Clarkson et al. (2008) also analyse the ratio TRI/sales, in order to compute the US pounds amount of contaminated release for thousand dollars of sales.
- ✚ A4, that is the last hard section, mirrors the company's environmental expenses. In this sense, it is recorded the communication of money saving thanks to particular plans and voluntary investments to strengthen coming environmental performance, like spending in innovative technologies. Moreover, this section contains the reporting of number of fines connected with environmental matters that are intangible and therefore not compulsory to be disclosed;
- ✚ A5, the first soft category, includes the communication of the environmental strategy, as reporting some specific safeguard initiatives;
- ✚ A6 rates the company's environmental shape with respect to the present and future laws, the comparison with competitors, the impact of the sector;
- ✚ A7 evaluates environmental quality disclosures considering worker training in environmental matters, firm's awards and so on (Clarkson et al., 2008).

Even if I use the Clarkson et al. index to assess the development of the environmental disclosure, I highlight the different final goal between my thesis and the paper I refer to. My

⁵⁰ In this case the score is not 0 or 1 as for the other items. "The scoring scale of environmental performance data is from 0 to 6. A point is awarded for each of the following items: (1) Performance data is presented; (2) Performance data is presented relative to peers/rivals or industry; (3) Performance data is presented relative to previous periods (trend analysis); (4) Performance data is presented relative to targets; (5) Performance data is presented both in absolute and normalized form; (6) Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)" (Clarkson et al., 2008, p. 313)

work is based on a single enterprise and the benchmark is focused on a long period of time, in order to understand the change in the quality of the communication in sustainability reports or similar documentation since the beginning of the company's online publications.

Thus, the recorded scores I will show in the next chapter are meant to underline the specific trend over years and there is no comparison among firms but just temporarily in a single one. This is different from the Clarkson et al. (2008) work, as it includes 191 firms selected from the five more polluting American industries and it separates good environmental performers, which have a percentage of recycling superior than the median, and poor ones (Clarkson et al., 2008).

Clarkson et al. (2008) also assess, in contrast to my work, the soundness of different theories that relate positively and negatively environmental results with the amount of disclosures. This research spots a positive relation between the degree of environmental declaration (higher score) and the environmental results.

Below the list of 95 items, used in the chapter 4, can be found; in particular, the tab is referred to pages 311 and 312 of Clarkson et al. (2008).

(A1) Governance structure and management systems (max score is 6)

1. Existence of a Department for pollution control and/or management positions for env. management (0-1)
2. Existence of an environmental and/or a public issues committee in the board (0-1)
3. Existence of terms and conditions applicable to suppliers and/or customers regarding env. practices (0-1)
4. Stakeholder involvement in setting corporate environmental policies (0-1)
5. Implementation of ISO14001 at the plant and/or firm level (0-1)
6. Executive compensation is linked to environmental performance (0-1)

(A2) Credibility (max score is 10)

1. Adoption of GRI sustainability reporting guidelines or provision of a CERES report (0-1)
2. Independent verification/assurance about environmental information disclosed in the EP report/web (0-1)
3. Periodic independent verifications/audits on environmental performance and/or systems (0-1)
4. Certification of environmental programs by independent agencies (0-1)
5. Product Certification with respect to environmental impact (0-1)
6. External environmental performance awards and/or inclusion in a sustainability index (0-1)
7. Stakeholder involvement in the environmental disclosure process (0-1)
8. Participation in voluntary environmental initiatives endorsed by EPA or Department of Energy (0-1)
9. Participation in industry specific associations/initiatives to improve environmental practices (0-1)
10. Participation in other environmental organizations/assoc. to improve environmental practices (if not awarded under 8 or 9 above) (0-1)

(A3) Environmental performance indicators (EPI) (max score is 60)^a

1. EPI on energy use and/or energy efficiency (0-6)
2. EPI on water use and/or water use efficiency (0-6)
3. EPI on green house gas emissions (0-6)
4. EPI on other air emissions (0-6)
5. EPI on TRI (land, water, air) (0-6)
6. EPI on other discharges, releases and/or spills (not TRI) (0-6)
7. EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal) (0-6)
8. EPI on land and resources use, biodiversity and conservation (0-6)
9. EPI on environmental impacts of products and services (0-6)
10. EPI on compliance performance (e.g., exceedances, reportable incidents) (0-6)

(A4) Environmental spending (max score is 3)

1. Summary of dollar savings arising from environment initiatives to the company (0-1)
2. Amount spent on technologies, R&D and/or innovations to enhance environ. perf. and/or efficiency (0-1)
3. Amount spent on fines related to environmental issues (0-1)

(A5) Vision and strategy claims (max score is 6)

1. CEO statement on environmental performance in letter to shareholders and/or stakeholders (0-1)
2. A statement of corporate environmental policy, values and principles, environ. codes of conduct (0-1)
3. A statement about formal management systems regarding environmental risk and performance (0-1)
4. A statement that the firm undertakes periodic *reviews and evaluations* of its environ. performance (0-1)
5. A statement of *measurable goals* in terms of future env. performance (if not awarded under A3) (0-1)
6. A statement about specific environmental innovations and/or new technologies (0-1)

(A6) Environmental profile (max score is 4)

1. A statement about the firm's compliance (or lack thereof) with specific environmental standards (0-1)
2. An overview of environmental impact of the industry (0-1)
3. An overview of how the business operations and/or products and services impact the environment. (0-1)
4. An overview of corporate environmental performance relative to industry peers (0-1)

(A7) Environmental initiatives (max score is 6)

1. A substantive description of employee training in environmental management and operations (0-1)
2. Existence of response plans in case of environmental accidents (0-1)
3. Internal environmental awards (0-1)
4. Internal environmental audits (0-1)
5. Internal certification of environmental programs (0-1)
6. Community involvement and/or donations related to environ. (if not awarded under A1.4 or A2.7) (0-1)

Figure 7: Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis.

Source: Clarkson et al., 2008, pp. 311-312; personal selection

4.2. COMPANY PRESENTATION: SNAM

4.2.1. SNAM'S HISTORY AND SUSTAINABILITY COMMITMENT

The company I have chosen to analyse is Snam, that is among the main worldwide energy infrastructure firms and, in terms of listed companies' capitalization, it is one of the greatest in Italy.⁵¹

Actually, "Snam is the leading operator in Italy and Europe in the creation and integrated management of natural gas infrastructure" (Snam, 2020a, p.17).

The company accounts for more than 3,000 workers and, in the Italian country, it supervises not only the natural gas transportation, dispatchment and storage but also the regasification of the liquefied natural gas (Snam, 2020b).

However, before addressing the company history, it is relevant to have an overall picture of the sector to which the company belongs to.

The energy & utilities industry is facing an important change in terms of challenges and opportunities to seize, due to the climate change, the technology mutation and alteration in the economic scenario. In this respect, a key role is played by the usage of clean energy sources, distributed generation, smart grid, and more power assigned to customers (PWC, 2019).

Among the most crucial aspects concerning the sector, identified by PWC (2019), there are the transition to renewable sources and green technologies, the market liberalisation, the response to smart grid and Carbon Capture and Storage challenges.

Nowadays, in fact, environmental sustainability has become an undeniable issue and energy utilities firms exercise high influences on the environment through the energy creation, transportation and distribution. Additionally, some companies disregard their impact like energy consumption generated by fossil fuels burning that increments GHG outflows in the air (Erzurumlu, Yu, 2018).

Still talking about the industry and more specifically about decarbonisation, Deloitte (2019) finds out that firms are improving their performance in terms of climate change care. In example, the American company Xcel Energy, in 2018, declared its engagement to be carbon-free by 2050. Moreover, a lot of other firms have shown their commitment in decrease of carbon production; this is mainly due to improvements in technology and to the clients' cleaner power source requests.

Also, in Europe many initiatives are taking place with the aim to decrease emissions and support the usage of renewable energy sources; for instance, taxing carbon industrial firms'

⁵¹ Source: <<https://www.snam.it/it/chi-siamo/la-strategia/>> [Accessed on 21st September 2020]

dioxide outflows, drafting plans with zero emissions target, banning vehicles fuelled by diesel or petrol (KPMG, 2019).

Snam, in this sense, tries to support the usage of natural or green gas as energetic sources, whose impacts are very low, for the benefit of the Country. Moreover, the company is fighting for decarbonisation in the biomethane, eco-friendly mobility and energy efficiency industries (Snam, 2020b). Besides, using the natural gas as energy source allows to minimise the sulphur dioxide production (Snam, 2017). This pollutant cannot be ignored, as it has been considered, since 1990, one of the six air pollutants for which United States Environmental Protection Agency (USEPA) states specific standards (Erzurumlu, Yu, 2018).

As regards the history, Snam (Società Nazionale Metanodotti) was created on 30th October 1941, with the collaboration among the Ente Nazionale Metano, Agip, Regie Terme of Salsomaggiore Società Anonima Utilizzazione e Ricerca Gas Idrocarburi (SURGI) with the objective to build methane pipelines and to enable the distribution and sale of the gas⁵².

From 1948 to 1961 the length of the methane pipelines increases from 257 kilometres to 4,600, however they are located for the most in Val Padana. An important goal was achieved in 1974, when the access from the Dutch gas field was made possible thanks to a new 830-km long pipeline.

In 1981 Snam, after an expansion along all Italian territory, accounted for 15,000 kilometres. Two years later, the gas line Transmed was completed enabling the transportation from Algiers crossing the Mediterranean, and the Italian territory till Lombardia. During the following years, the company has been working at another pipeline to link up with Russia and Libya.

2001 was an important year for a series of events: in June Rete Gas Italia was built, inheriting from Snam technological assets and gas transportation skills. In July Gnl Italia was founded, entirely controlled by Rete Gas Italia, in order to execute regasification activities of liquefied natural gas. The company was renamed in Snam Rete Gas in October forecasting the entrance in the stock exchange. From December the firm has been listed on Italian Mercato Telematico Azionario (MTA).

In 2007 Snam Rete Gas drafted the first sustainability report and it won the reporting Oscar for its Corporate Governance.

⁵² The information till other specifications is taken from the company website: <<https://www.Snam.it/it/chi-siamo/la-storia#:~:text=La%20storia%20di%20Snam%20inizia,esercizio%20dei%20metanodotti%20e%20la>> [Accessed on 21st September 2020]

In 2009 the company fully acquired Stogit and Italgas (which it will split up in 2016) from Eni creating a new Group.

The turning point on 1st January 2012 changed another time the company name in Snam and it assigned transportation, measurement, dispatchment and remote-control activities to a new society named Snam Rete Gas, given the popularity of this brand till that moment.

In the same year Snam separated from Eni, but in 2016 the two firms have established a partnership in order to build new facilities for compressed and liquefied natural gas in the national distributive network of Eni trying to enhance an alternative form of fuel. In 2016 Marco Alverà was nominated CEO to present.

In 2020 Snam has dealt with SOCAR to collaborate in researching renewable gas development and sustainable energy; moreover, Snam has made an agreement with Alstom in order to develop hydrogen power trains in Italy from 2021. In addition, the company has created a new firm with Carbon Disclosure Project (CDP) supporting afforestation and reforestation with the objective 3 million of trees before 2030.

The reasons behind the choice to study the Italian company Snam in terms of the evolution of environmental disclosure in its sustainability reports and, previously 2007, in the Health – Safety – Environment Reports (HSE), lie on the willingness to contribute in enlarging the content analysis in the Italian context, and especially in an industry coherent with Clarkson et al. (2008) sample.

Moreover, sustainability in Snam plays an important role: it is embedded in the business strategy definition, in investment choices and in everyday practice (Persico, Rossi, 2016). This commitment has been shown, as said before, since 2007 through sustainability reports and from 1994 with HSE reports. Unfortunately, HSE publications are available online from 2002, thus my analysis will not comprehend the first eight years of sustainability engagement. Sustainability model, which represents the process of sustainability governance consists in four phases: planning, management, control, and communication. Considering the sustainability policy, the strategic business plan, and stakeholders' needs, Snam ensures to define improvement objectives, dedicated activities, and projects to be implemented, the monitoring of performances and the reporting activity. In this sense, sustainability disclosure covers the final step of this chain and it enables the communication with stakeholders and the context in which the firm is put (Persico, Rossi, 2016).

Sustainability reporting is drafted in accordance with GRI principles, and this is another reason for having chosen Clarkson et al. index.

Among the relevant projects taken forward by Snam, *Valore Condiviso*, *Coltivare valore: un orto in Centrale* and *Sentieri Sostenibili* are noteworthy (Persico, Rossi, 2016).

The first one shares the company's assets with stakeholders, like places, know-how, knowledge, in order to enhance positive externalities. Value is created in the social and natural context where Snam and stakeholders operate, through the match of economic orientation and the common value of taking care of the environment. The second project involves the free provision of four hectares arable of land to the social cooperative Onlus Betadue, in order to boost vegetables production and distribute them to Valdarno's nursery schools' canteens. In 2014, Snam Rete Gas divested the area in free loan to Betadue, also providing electricity and water necessary for the project, for free too. In particular, this plan pursues organic cultivation, natural fertilizers and growing methodologies that do not harm biodiversity and environment. The third project is an editorial collection, created in 2012 with the aim to make Snam's environmental engagement more popular, underlying the commitment in the territorial safeguard, revegetation, and the relationship between Snam and Park Authorities. In each publication there are: a section dedicated to the Park describing naturalistic aspects, the relationship between human beings and nature, flora and fauna features, historical and touristic infrastructures; another one, devoted to Snam's practices inside the Park, assessing the compatibility between nature and projects, protecting the ecosystem (Persico, Rossi, 2016).

Besides, in order to improve its brand identity and stimulate the communication, in the *Sustainability* section Snam has added a new insight named *Racconti dal Territorio* in which the greatest environmental and social actions are shown through the usage of multimedia tools. This led Snam to win the award as third Italian company in terms of CSR online communication (Persico, Rossi, 2016).

The two main challenges that Snam is facing to date are: on one hand, climate change together with the energy consumption control; on the other hand, nature, and biodiversity safeguard. The engagement of the firm to prevent from climate change is shown with the objective to decrease of 40% CO₂ and natural gas emissions respectively in 2030 and in 2025 with respect to 2016 values, increasing green electricity. Snam tries to build infrastructures that enables Italians and companies to use as a source of energy natural gas that has a low environmental impact. Moreover, in order to safeguard the environment, Snam builds its pipelines avoiding or minimizing the passage in areas in which there is or there will be residential locations, in natural, archaeological, or geologically uncertain places.⁵³

⁵³ Source: <https://www.snam.it/it/sostenibilita/agire_per_ambiente/> [Accessed on 21st September 2020]

To reinforce the adoption of sustainable development orientation, Snam highlights, in the most recent annual report of 2019, the confirmation of the loyalty towards SDGs and Global Compact principles. Snam's results in terms of environment, society and governance have made possible the inclusion of the firm in many sustainability lists, like Dow Jones Sustainability World Index. In the same respect, in the current years, Snam has opened many initiatives designed to support a more sustainable energy system regarding compressed and liquefied natural gas and biomethane. Snam has also shown its commitment in fighting climate change aiming to reduce emissions and weather danger, and the company has been rewarded through the inclusion in the worldwide Carbon Disclosure Project Climate Change. Concerning this topic, it is noteworthy the issuance in February 2019 of the Climate Action Bond, a financial instrument employed to assign reserves of money to plans for decreasing CO₂ releases, implementation of renewables and expand green plans founded on environmental standards (Snam, 2020).

In the 2019 Annual Report Snam presents its new strategic plan provided for years from 2019 to 2023, stressing out its willingness to continue the energy transition employing natural gas and biomethane and being oriented towards the use of hydrogen as a clean energy in the time to come. The reliance on hydrogen to fight climate change is clearly underlined. More, there is an attraction for green hydrogen which is produced thanks to electrolysis of water with the interaction with the Sun and the wind without carbon dioxide (Snam, 2020).

5. CHAPTER 4

5.1. METHODOLOGIES

5.1.1. REPORTS ANALYSIS

In the figure 7, of chapter 3, where the Clerkson et al. index is shown, I have decided to cut the four other data columns with the aim to adapt the index in the way I need. The first column referred to GRI indicators; however, I overlooked it, as the standards have been evolving since 2002, to 2019. Besides, some information that should has been included in a specific GRI indicator is declared outside of it and I cannot ignore the information disclosure just because it is not contained in the GRI category indicated by Clarkson et al. 2008.

In this sense, I have analysed not only the aspects suggested by the index but the whole sustainability report, to ensure the presence or not of the environmental information. In this respect, I have analysed the texts, the graphs, the tabs present in the whole report.

However, given that this analysis is based on my content interpretation, it is likely that some scores are biased because, maybe, other researchers would have assigned a 0 or a 1 interpreting differently the meaning of the item.

I will organise my work analysing one section at a time, studying how the information is been disclosed over years. In this regard, it happens that the item is equal to 1 in several years, but it is declared in a different manner.

I stress out that the sources of this chapter are the sustainability and HSE reports of Snam, from 2002 to 2019; thus, all data, information and examples are taken from there.

Depicting an initial quantitative picture in terms of pages intended for environmental subjects summed up in the figures 8 and 9, we can easily notice that from 2002 to 2019 the number of pages jumps from 11 to 20, doubling. However, environmental data fluctuate a lot and do not follow the same trend of the total pages, which tripled. In 2008 environmental disclosure covered 16 pages, then it decreased again in 2009 recording 10 pages, in order to grow up to 24 pages in 2012 and reducing again in 2019. Therefore, the increase in pages about environment, including the climate care, is undeniable, but there is not a precise path over years.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total pages	50	52	58	63	93	96	126	92	107	102	116	120	128	124	118	110	128	140
Environmental disclosure pages	11	10	10	10	14	12	16	10	14	22	24	18	20	24	19	18	18	20
% environmental subject	22%	19%	17%	16%	15%	13%	13%	11%	13%	22%	21%	15%	16%	19%	16%	16%	14%	14%

Figure 8: Pages of Environmental Disclosure
Source: Personal Elaboration of Snam, 2002-2019

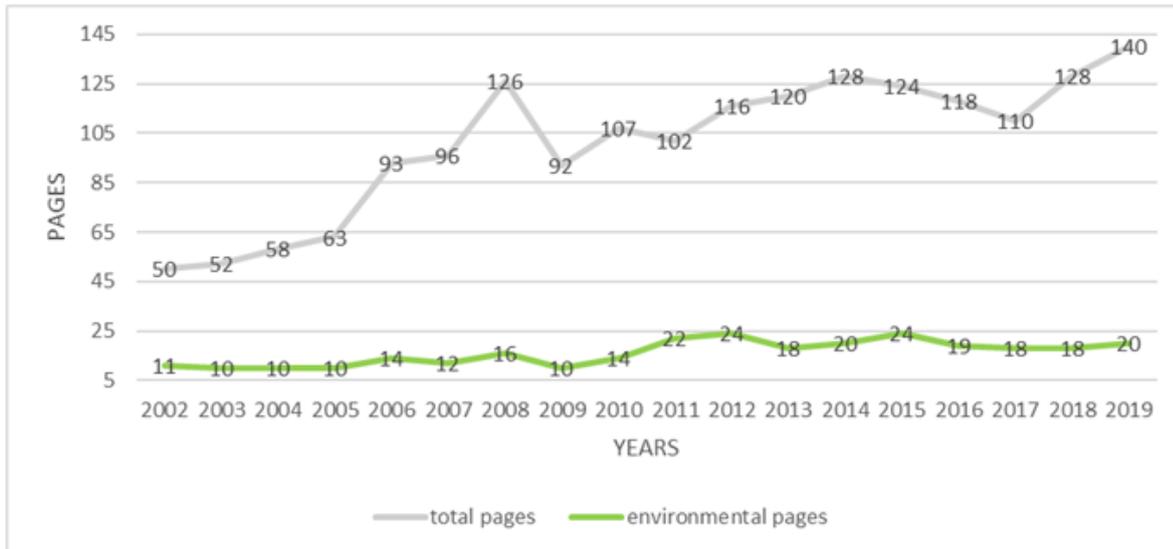


Figure 9: Pages of Environmental Disclosure
Source: Personal Elaboration of Snam, 2002-2019

As regards the adoption of GRI summarized in the figure 10 below, except for the first two years, Snam follows the Global Reporting Initiative guidelines, accepting their evolution through time.

In 2002 and 2003, the company drafted the report respecting the principles of the Forum Rapporti Ambientali elaborated by Eni E. Mattei Foundation.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
GRI adoption	NO	NO	YES GRI	YES GRI	YES G3	YES G3	YES G3	YES G3	YES G3	YES G3.1	YES G3.1	YES G4	YES G4	YES G4	YES G4	YES GRI	YES GRI	YES GRI

Figure 10: GRI adoption
Source: Personal Elaboration of Snam, 2002-2019

Examining the macro-categories in the summary, I have tried to understand which are the most recurrent macro-sections and if the subjects listed provide a right anticipation about the themes that will be later discussed in the reports.

Looking at the 18 reports' tables of contents, I summarized in the figure 11 the environmental macro-categories listed, trying to put together similar items.

From the figure, it emerges that the most popular sections are *environment*, *environment protection and responsibilities*, *pipeline monitoring*, *air protection*, *energy consumption*, *biodiversity*, *climate change*.

On the contrary, many sub-chapters appear just once or few times, like *environmental expenses*, *environmental targets*, *most significant environmental aspects*, *initiatives*, *natural gas sustainability*.

Moreover, it is easily noticeable that, till 2009, the tables of contents include more sections. In this way, the reader can forecast more precisely which will be the subjects treated in the report environmental part. However, the absence of a specific content in the summary does not imply the exclusion in report.

For instance, in 2009 *reduction of energy consumption* is a macro-category, not present in 2019: even though, under the 2019 macro-category *environment*, *energy consumption* is embodied inside the section, it falls into *air and climate protection*. Therefore, I can conclude that tables of contents are not a good indicator for understanding how much and which environmental subject are disclosed.

In this respect, *GHG emissions*, *waste and water management*, *air protection*, are present in every report which prove the company attention and care for these themes.

However, other subjects are been disregarded over years, like *noise emissions*, which disappeared from the reports in 2013.

Another example is the elimination of the *environmental targets* or *we said – we did*. However, after having read all reports I can infer that the rationale could be a general attention for targets, goals, comparison over years, along the all environmental section; thus, it has been no more necessary to realise a specific macro-category.

Environmental macro-category	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Reduction of Energy Consumption	x	x	x	x	x	x		x										
Air Protection	x	x	x	x	x	x	x	x								x	x	x
Replacement of Ozone-Depleting Substances	x	x	x	x	x			x										
Waste Management	x	x	x	x	x			x										
Water Supply and Discharge Management	x	x	x	x	x			x										
Containment of Noise Emissions	x	x	x	x	x			x										
Environmental Protection/ Environmental Responsibilities	x	x	x					x	x	x		x	x		x	x	x	x
Environmental Protection and Biodiversity					x	x	x	x	x	x	x	x	x				x	x
Pipeline Monitoring	x	x	x	x	x	x	x	x										
Environmental Progress and Targets					x													
We Said - We Did						x	x											
Environmental Expenses					x													
Climate Protection/ Change and Innovation							x	x	x			x	x		x	x	x	x
Other Environmental Aspects							x	x		x	x							
More Significant Environmental Aspects						x												
Information On Management Modalities/Environmental Management								x		x	x			x				
Initiatives									x									
Responsibilities and Listening									x									
Infrastructures Sustainability										x	x							
Carbon Footprint and Energy Efficiency										x	x	x						
Natural Gas Sustainability																x		

Figure 11: Environmental macro-categories
Source: Personal Elaboration of Snam, 2002-2019

Addressing the Clarkson et al. (2008) index, as said in the previous chapter, A1 section refers to governance structure and management systems and highest achievable score is 6.

From the figure 12, it is noticeable that the score fluctuates between 2 and 5: 2002 and 2007 are the worst years, instead from 2010 to 2014 the scores are very good.

I underline that the assignation of 0 or 1 does not imply necessarily the real inexistence of that management system, but the absence of its disclosure in the sustainability or HSE reports.

In particular, except for 2007 where there are no direct indications, there is always an environmental committee. It is not pure environmental committee, but it also deals with environment. From 2002 to 2006, for instance, they speak about an HSE committee; in 2008 there is not a proper committee but a sustainability project team that helps the top management and it ensures sustainable development model definition proposals.

From 2009 to 2010, the CEO had nominated the executive committee as the supervisor of the sustainability matters, and it is known that sustainability comprehends environmental affairs. Since 2011, till 2014, the board of directors has covered the most relevant position in terms of sustainability guidelines definition and supervision of sustainability reporting. For this reason, I consider these four years 0 in A1.2, but 1 in A1.1 as board of directors is the management. Unfortunately, A1.1 is 0 all the other years because there is a dedicated committee and a department for pollution does not exist.

In 2015 there is no specific statements, and from 2016 a new sustainability committee has been established.

I interpret A1.3 as the presence or the absence of environmental standards or care adopted by suppliers when choosing them. In this respect, since there is always a statement about this subject, I have disregarded the customer policy.

To be more precise, from 2002 to 2011 it is specified the choice of suppliers that operate trying to improve or safeguard the environment or that respect environmental requirements. From 2012 it is also specified the supplier selection based on who cares about its environmental impacts; more, in 2019 there is even a caption about the supplier sustainability inquiry for the valuation process.

Stakeholder involvement in setting corporate environmental policies is not an information easy to be found in the reports. This is because of some statements that are not so much clear to be interpreted. In many years there is not any disclosure about it, in others there is a clear or an unclear information. With *unclear* I mean that it is difficult to define if the information really falls in the item A1.4. In several years it is more a question of communicating with stakeholders about sustainability, rather than a direct involvement in setting corporate environmental policies.

To cite some clear examples, from 2003 to 2005 it is said that the personnel takes part of the company decisional processes; in 2010 it is talked about sustainability engagement of stakeholders, taking into account their suggestions and feedbacks; in 2016 Snam disclosed that it considers stakeholders' point of view in making sustainability analysis; in 2019 it emerges the crucial role of stakeholders in development new green business.

As concern ISO14001, these international principles certify every year the environmental management systems of the gas compression stations and the regasification of the liquefied natural gas.

However, till 2010 the disclosure provides for a paragraph about the standards where it is specified, for examples, the 3 years validity and the 9 months periodic monitoring of the certification obtained. From 2011, details have increased, as in the reports, it can be found a tab with indications about degree of coverage certification segmented by the company (Snam, Snam Rete Gas, Stogit, GNL Italia and so on).

As regards, executive compensation linkage to environmental performance, there are not any statements, except for 2010 – 2014 period. Over these years it is disclosed that remuneration and incentives of executives are directly linked to sustainability care.

The score fluctuates a lot between 2 and 5; the improvement from 2002 to 2019 is only equal to 1, that is an increase of 33%, from 3 to 4. However, considering as 6 the maximum recordable score, the 1-point jump represents only the 17%, that is not so high in 18 years. More, the quantity of the disclosure covers 4 points out of 6, therefore 67% is declared under this category.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A Governance structure and management systems (max score is 6)	3	4	4	4	3	2	3	3	5	5	5	5	5	3	4	4	4	4
1 Existence of a Department for pollution control and/or management positions for env. management (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Existence of an environmental and/or a public issues committee in the board (0-1)	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
3 Existence of terms and conditions applicable to suppliers and/or customers regarding env. practices (0-1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Stakeholder involvement in setting corporate environmental policies (0-1)	0	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1
5 Implementation of ISO14001 at the plant and/or firm level (0-1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Executive compensation is linked to environmental performance (0-1)	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0

Figure 12: Governance structure and management systems
Source: Personal Elaboration of Snam, 2002-2019

The next hard section of the Clarkson et al. index deals with credibility and the greatest reachable score is 10. A2.1 regards the adoption of GRI or CERES principles to draft sustainability reports and, as already seen in the figure 10, except for 2002 and 2003, Snam follows the Global Reporting Initiative guidelines every year.

Besides, each report contains a letter of an auditor or verifier that certifies the content of the report, therefore also the environmental subject. In the 18 years period, four different verifiers guarantee the disclosed information. URS Demi & Moore S.R.L. in 2002, IT Group Italia S.R.L. from 2003 to 2007, PWC in 2008, 2009, 2018 and 2019, and Ernst & Young the rest of the years.

Also, it is noteworthy that since 2002, in every report is disclosed the recurrent implementation of audits to assess the efficacy of environmental systems. In this case, I assume that independent verification stands for audits conducted by an external team rather than an internal one.

As regards product certification concerning environmental impact and environmental programs certified by independent agencies the score is always 0.

According to my personal content analysis, environmental certification like ISO14001, already discussed in the previous section, is not a real Snam proper product certification and there is not any information about environmental programs certified.

A2.6 considers external environmental awards or the inclusion in sustainability index; in this respect, the first three years of available reporting Snam had accounted for 0, but in the rest of the period the firm is incorporated in numerous sustainability index.

To name a few examples, in 2005, Snam was embodied in the Ethibel Investment Register and Sustainability Indices and in the FTSE4Good index, which considers the best European firms in terms of economic sustainable development, based on social commitment and performance, and also on the environmental engagement and results.

More, in 2008 Snam fell into ECPI Ethical Index Euro which considers environmental, social, and corporate standards, and into Dow Jones Sustainability index and Carbon Disclosure Project.

In 2011 Snam was also included in the sustainability index Stoxx Global ESG Leaders.

In 2016 the company compared among the Industry Carbon Leader in the Sustainability Industry Classification System for the respect and the disclosure of greenhouse gas emissions.

A2.7 regards stakeholder involvement in environmental disclosure process, it is subjective the meaning of involvement. I will consider it as the participation, intended like a proactive communication process between Snam and stakeholders, with feedbacks in subjects regarding sustainability. Snam in most of the reports draft a dedicated section about sustainability

communication among internal and external stakeholders. In this respect, through websites, portals and reports, the interaction process is always encouraged.

Snam does not participate in environmental initiatives supported by EPA and the Department of Energy, but it supports other relevant voluntary environmental initiatives through years.

It is evident that A2.10, thus the participation in other associations to improve environmental practices, can account for 1 if Snam records 0 in A2.9, that is industry specific associations or initiatives, since A2.9 excludes A2.10 in the Clarkson et al. index.

I consider as relevant not only the pure association but also the collaboration with associations and other environmental initiatives under A2.10.

For instance, in 2002 Snam participated to Legambiente, an initiative promoted by the UN in order to clean up the world and improve the environment.

In 2005, Snam participated in an association for naturalistic engineering with the aim to restore pipeline paths.

In 2011, Snam proved its willingness to collaborate with FEDERPARCHI, which fights for sustainability, environment, and biodiversity protection. In 2019, it is underlined the continuing Snam commitment in the European association Natural & bio Gas Vehicle Association with the objective to promote natural gas and biomethane as energetic sources in order to safeguard the territory.

The score increases from 3 to 6, always following an increasing trend; the improvement from 2002 to 2019 is of 3 points, that is a growth of 100% as the score doubled. Underlining that 10 is the maximum recordable score, the 3-points skip stands for an increase of 30%. In addition, the total disclosure is 6 out of 10, thus Snam communicates 60%, just more than the half.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A																		
2	Credibility (max score is 10)																	
1	3	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 13: Credibility
Source: Personal Elaboration of Snam, 2002-2019

As concerns Environmental Performance Indicators (EPI), we can see from the below figure that there is an improvement in environmental disclosure from 2002 to 2019, jumping from 18 to 22. However, there is a peak in 2011 and 2012, thanks to a better disclosure in EPI on other air emissions and other releases.

In order to go through the content analysis, I will clarify my personal meaning of some undefined indicators. EPI on other air emissions will include all the other outflows that are not comprehended in the GHG section; EPI on TRI will deal with toxic releases or toxic waste; EPI on other discharges or spills, will include noise emissions that are a popular disclosure in Snam reports till 2012.

Finally, EPI on environmental impact of products and on compliance performance are always equal to 0, as there are not any statements, respectively, about impacts or reportable incidents. Business consequences are already awarded under another indicator and there are not any other declarations about peer comparison, evolution through time and so on.

Another important specification is that peers are not nominated, therefore there are not any confrontation with competitors. More, data are not shown in a normalized form.

Starting from energy disclosure, data in terms of energy consumption are always disclosed and compared with the previous two or four periods to guarantee a confrontation.

Moreover, data are also shown in a disaggregate manner that can vary through time. I assume like disclosure, the source of energy (electric or natural gas), the kind of activity (transport, distribution, corporate, regasification, storage), the type of usage (civil, industrial). Additionally, from 2011, data are compared with targets, future, and actual ones.

Talking about water, data are always disclosed in terms of sourcing and discharge. However, this is not a relevant aspect for Snam, considering the low amount and the typology of spills. Sea water is mainly used to cool the auxiliary facilities of LNG regasification buildings, and fresh water for irrigation, offices, and fire protection systems.

Also, there are not data comparison with targets but, there is a confrontation with previous years.

Moreover, except for 2007 and 2008, there are disaggregated data at activity level, that I have decided to consider as relevant.

As concerns greenhouse emissions disclosure, the trend of the scores follows the same path of EPI on energy, except for the fact that targets are present one year before, in 2010.

The two GHG outflows are carbon dioxide and methane; the first gas is produced during combustion processes, while the second one derives from operations, maintenance and releases in the air caused by the link of new gas pipelines.

From 2011 there is also the distinction between direct and indirect outflows, the latter due to electric energy consumption.

In EPI on other air emissions I assign 1 to reports that disclose about nitrogen oxides releases, that are pollutant. Performance data are always disclosed and, also the comparison with previous periods. However, a sort of activity disaggregation presentation is reported till 2012, while targets are reported since 2010.

Disclosure about toxic releases has been starting in 2006 with a constant score, as Snam discloses the amount as a whole and the quantities of the previous periods. I assume *toxic releases* and *dangerous waste* as equally relevant in the disclosure.

Waste management data are always reported and, also with respect to the past few years; furthermore, from 2010 targets and KPI are disclosed.

In this respect, nonetheless data are shown, some years the content about waste is more exhaustive. For instance, in 2015 there is a long paragraph about the activities that generate for the most waste, that are production, site remediation, well drilling.

From 2002, EPI on land and biodiversity have recorded 3 as score every year. Data are always presented, with references to previous years, in terms of expenses for example, and disaggregating by activities and territories.

For instance, in 2003 and 2004 Snam stressed out the vegetation restoration close to gas pipelines in Friuli Venezia Giulia, Veneto, Puglia, with the aim to protect the environment.

In autumn 2005, it had started the restoration planting 60,000 Molise and Abruzzo's native forest plants; reforestation activities, in fact, take place in autumn and spring.

In 2008, the company did plant care for five years to previous reforestation plans which involved seedlings planted. Along time, it is stressed out also the importance to monitor pipelines that may interfere with flora and fauna.

Many other data are disclosed as, for instance in 2012, the precise amount of monitoring, plant cares, reforestations, and restorations; data are compared with the two previous years to show the evolution.

The score has increased from 18 to 22 in 18 years of reporting, therefore there is a 4-points jump, that is a growth of 22%. However, I consider that the highest score is 60, thus in 2002 the disclosure was 30% and in 2019 37%. In this case there are just 7 percentage point of difference in 18 years. Only in 2011 and 2012 Snam reaches 24 points recording 40% of disclosure, that is still low to be an important hard category.

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A3	Environmental performance indicators (EPI) (max score is 60)	18	18	18	18	20	19	19	20	23	24	24	22						
1	EPI on energy use and/or energy efficiency (0–6)	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4
2	EPI on water use and/or water use efficiency (0–6)	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3
3	EPI on greenhouse gas emissions (0–6)	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4
4	EPI on other air emissions (0–6)	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3
5	EPI on TRI (land, water, air) (0–6)	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	EPI on other discharges, releases and/or spills (not TRI) (0–6)	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
7	EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal) (0–6)	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
8	EPI on land and resources use, biodiversity and conservation (0–6)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
9	EPI on environmental impacts of products and services (0–6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	EPI on compliance performance (e.g., exceedances, reportable incidents) (0–6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 14: Environmental performance indicators EPI
Source: Personal Elaboration of Snam, 2002-2019

A3		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
1	EPI on energy use and/or energy efficiency (0–6)	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4		
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	EPI on water use and/or water use efficiency (0–6)	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
3	EPI on greenhouse gas emissions (0–6)	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

4	EPI on other air emissions (0–6)	3	4	4	4	3	3	3	3	3	3							
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
5	EPI on TRI (land, water, air) (0–6)	0	0	0	0	2												
	Performance data is presented	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	EPI on other discharges, releases and/or spills (not TRI) (0–6)	1	0	0	0	0	0	0										
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal) (0–6)	2	3															
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1

8	EPI on land and resources use, biodiversity and conservation (0-6)	3																
	Performance data is presented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	EPI on environmental impacts of products and services (0-6)	0																
	Performance data is presented	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	EPI on compliance performance (e.g., exceedances, reportable incidents) (0-6)	0																
	Performance data is presented	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to peers/rivals or industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to previous periods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented relative to targets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented both in absolute and normalized form	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Performance data is presented at disaggregate level (i.e., plant, business unit, geographic segment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 15: Environmental performance indicators EPI
Source: Personal Elaboration of Snam, 2002-2019

A4 section regards environmental spending; in particular, A4.1 concerns the amount of money saved through the implementation of environmental initiatives and data are never disclosed.

The second category is about the expenditure for technology or innovation to improve the environmental results.

In this case, I assume as relevant disclosure environmental expenses as a whole (not only specific R&D costs) given that they incurred for protecting the environment, the landscape, the climate, reducing greenhouse outflows and that they are for the most investments.

For instance, in 2005 the declared amount comprehends money for the installation of low-emission combustion systems gas turbines in compression stations.

From 2007 to 2010 there is just the amount spent on environment but there are no other statements, for this reason I assign 0.

Then, the disclosure is not very exhaustive in terms of length but there are helpful graphs and percentages, and the engagement in investments to improve environmental performance is underlined.

As regards numbers: we start from 2002 with 60.5 million euro, arriving in 2019 with 114.4 million euro, with the maximum peak reached in 2014 that accounts for 170.1 million euro.

Lastly, A4.3 deals with the disclosure of fines and sanctions linked to environmental subjects. In this respect, the assignation of 0 or 1 is quite fluctuating over years. From 2013 it is advisable to see annual reports for having more information.

On the contrary, in 2011, Snam declares the administrative fine of 500 euro due to an environmental communication delay.

The other years, where the item accounts for 1, the company specifies that it is not subject to any environmental sanctions.

This category is not very performing, as the score is equal to 1 and assigned to the same item, both in 2002 and in 2019. More, the score fluctuates between 1 and 2 over the period analysed. There is no improvement, and the score seems to remain constant considering the last seven years, disclosing just the 33%, with 1 information out of 3.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A																		
4 Environmental spending (max score is 3)	1	1	2	2	2	0	1	1	1	2	2	1						
1 Summary of dollar savings arising from environment initiatives to the company (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Amount spent on technologies, R& D and/or innovations to enhance environ. perf. and/or efficiency (0-1)	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1
3 Amount spent on fines related to environmental issues (0-1)	0	0	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0

Figure 16: Environmental spending
Source: Personal Elaboration of Snam, 2002-2019

The content analysis about the vision and the strategy claims of Snam is conducted with the six items belonging to A5 category.

Starting from the top, in the CEO letter to shareholders and/or stakeholders there are always clear references to the environment commitment or care; therefore, I assume that *performance* stands for engagement, attention, objectives, protection and, if present, quantitative results or concrete initiatives.

To cite few examples, showing the variety of the disclosure, in 2002, Snam declares its effort to reduce pollutant products, outflows in the atmosphere, to decrease energy consumptions, to respect Kyoto protocol.

In 2007, it is disclosed, for instance, the new combustion technology that produces low nitrogen oxides; in 2008, the environment safeguard improvement is addressed; in 2009, Snam talks about the willingness to cooperate more with the territory.

In 2016, Marco Alverà was nominated as the new CEO, and in the letter, there is a clear scope of 10% decrease in gas emissions by 2021.

Another example is, in 2018, the specified statement about the adhesion to the Task Force on Climate Related Financial Disclosure.

As regards A5.2, that is environmental policy and values, I assume to consider as 1, the explicit statements about principles that also concern the environment.

In 2003, it is clearly declared the sustainable use of resources and the aim to prevent from pollution.

In 2006, it is evident the care for natural resources protection; in 2011, Millennium Development Goals are cited together with the need to grant environmental sustainability; Snam also follow the Global Compact principles.

About this item, the company always accounts for 1 and discloses the same codes of conduct over years, being coherent with the vision.

A5.3 comprehends the presence or the absence of formal management systems about environmental performance and risks.

From 2002 to 2005, at the beginning of each report, there is a specific statement that declares Snam commitment in identifying environmental aspects, the correlated risks and management systems to prevent from or deal with.

From 2006 to 2011, with my personal content analysis, I do not identify specific disclosure about environmental risk management.

In 2012 and many other years, for instance, there is a particular statement about the control of any landslide soil movements or the pipes throughs specific devices to prevent from risks.

In 2013, environmental risks are included when delineating operational risks recognized with ERM.

If management systems can be considered also like initiatives that prevent from environmental risks, in 2019, it is noteworthy *Snam Plastic Less*, which specifically states the aim to reduce this kind of risk, with the aim to eliminate definitely the plastic in the industrial packages by the end of 2023; besides, this could be also viewed like a future goal set.

As regards the recurrent assessment of environmental performance, I assume that *periodic review* may stand for statements about the constant monitoring of pipelines, general environmental control on frequent basis, environmental internal and external audits, drafting reports to evaluate the environmental performance.

From 2002 to 2008, for instance, there is a clear disclosure about period reviews; then, it is more stressed out the pipelines monitoring and the auditing.

About the presence of measurable goals of future environmental results, I assume as *measurable* the possibility to reach a target assessing the accomplishment or not without difficulties.

In this respect, I assign 1 in cases like 2002, in which there is a specific future objective to prevent from spills into the soil and subsoil thanks to the future realization of dedicated liquid charge and discharge area.

In 2005 it is disclosed the new target of natural resources employment optimization, through the assessment of the energy recovery chance from secondary LNG pumps.

On the contrary, I assign 1 also to reports, as 2007, in which numerical goals are set. The goal was to reach by 2011 the 80% of DLE turbine operating hours over the total turbine operating hours. Also, in 2011 they set the goal, to be achieved by 2015, to increase to 75% the DLE turbines.

Then, from 2012, Snam has been comparing previous set goals with the results obtained the reporting year, to understand if the environmental target is in progress or already achieved.

In 2010 there are not specific declarations like the rest of the period.

A5.6 deals with innovations and new technologies useful for the environment safeguard or improvement.

For example, in 2002 it is disclosed the high engagement in R&D activities, with the aim to develop new natural gas transport technologies that pollute less and are more efficient.

In 2006, it is declared the implementation of methods to compute methane outflows of gas sector; more, in 2014 pneumatic gas valves were replaced with new cast iron pipes.

The following year, Snam disclosed about the adoption of new energy efficient heat generators and turbines; additionally, solar plants were installed in buildings and network systems.

This category is very well disclosed, as every year, except for four years, the communication is equal to 100%. The worst year is 2010, however the disclosure is still not bad with a 67%.

However, it is not negligible the fact that A5 is a soft category, that means that these items are for the most management claims to act in the respect of the environment, but without real substantiation, differently from A1; in this way, the disclosure could be misleading (Clarkson et al, 2008).

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
A																			
5	Vision and strategy claims (max score is 6)																		
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 17: Vision and strategy claims
Source: Personal Elaboration of Snam, 2002-2019

Environmental profile is section A6 and we can easily notice that every year Snam accounts for 2 as a total score, disclosing always the 50% of the information.

In fact, there are not any indications about environmental impact of the industry or comparison between Snam and competitors regarding the environmental results.

Looking at the statements about compliance with precise environmental standards, the content analysis is very personal and subjective as there is not a detailed interpretation of *environmental standards* in Clarkson et al. (2008).

For instance, if standards are intended as law principles, in 2003 there is a specific statement about the compliance with environmental legislation.

In 2008, in the paragraph about environmental protection, it is disclosed the regular control of pipelines in order to meet environmental safeguard standards and we can consider them as the principles.

Otherwise, for example, in 2012 we can consider the Ethic Code, that deals with sustainability, and thus also environment, principles.

With respect to the environmental impact of the company's activities and products, Snam makes an accurate disclosure from 2002 to 2019.

Far back as 2002 or 2003 there are disclosures about Snam business' environmental impact, in fact there are many statements about the environmental quality improvement thanks to the natural gas transport that leads to an environmental efficient power source for citizens, industries and machinery that produces electric energy.

In 2011, for instance, it is disclosed that natural gas, used as a source of power, can have a positive impact on the environment if used in an efficient manner. Also, the report warns about hypothetical dangers for society and ecology if gas is not used correctly. More, the advantages for the environment lie on the fact that natural gas burning produces the 25% - 30% less of CO₂ with respect to petrol and 40% - 50% less with coal.

Another example, in 2014 there is a specific section about environmental beneficial impacts of natural gas as it can be used in high-efficiency technologies, decreasing carbon dioxide outflows per unit of energy.

Moreover, in 2019 report there are clear references to the use of technologies that have a low impact on the environment or to the deep preliminary analysis of the environmental consequences before building infrastructures.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Environmental profile (max score is 4)																	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 18: Environmental profile
Source: Personal Elaboration of Snam, 2002-2019

A7 deals with environmental initiatives and it is noteworthy that the score, except for 2002 and 2003, is always 2, and there is no improvement in the long run.

In this respect, analysing the eighteen reports, it emerges that there is not any disclosure about a precise response plan in case of environmental accidents, neither internal environmental awards nor internal certification program.

However, as concerns A7.6, the registered score is always 0 just because every year Snam accounts for 1 A1.4 or A2.7. In contrast, I assign 1 to A7.4 in every report as, similarly to A2.3, internal teams responsible for audits about environmental systems efficiency are disclosed.

As regards the substantive description of employee training in environmental subjects, there are not any statements in 2002 and 2003, just classes and courses about environment were arranged but it is specified that these are not training.

For the rest of the period, I consider not only substantive paragraphs about workers environmental formation but also just information about it. I make this assumption as there is a positive disclosure improvement and environment care from 2003.

In 2005, for example, is precisely declared the fact that employees receive environmental training, together with social and safety subjects.

In 2006, it is disclosed also about management systems and environment protection.

In 2010, a relevant paragraph talks about the new Waste Traceability System SISTRI that requires intensive environmental training. From 2013, only the training hours and the subject is disclosed.

This category is poorly disclosed, as in 2002 and 2003, accounting for 1, Snam disclosed the 7%. Since 2004, the score doubled, but the communication remains low, achieving the 33%.

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A	Environmental initiatives (max score is 6)	1	1	2															
7																			
1	A substantive description of employee training in environmental management and operations (0-1)	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Existence of response plans in case of environmental accidents (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Internal environmental awards (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Internal environmental audits (0-1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	Internal certification of environmental programs (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Community involvement and/or donations related to environ. (if not awarded under A1.4 or A2.7) (0-1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 19: Environmental initiatives
Source: Personal Elaboration of Snam, 2002-2019

6. CONCLUSIONS

In the previous chapter I analysed the quality and quantity of Snam environmental disclosure with respect to the items included in the Clarkson et al. (2008) indicator.

I explained the meaning I have attributed to the items that should have been declared in the reports, to be coherent with the assigned points: 1 if present, 0 if absent.

Below, the figure summarizes the scores obtained from 2002 to 2019; I recall that the minimum possible recordable score is 0, while the maximum is 95.

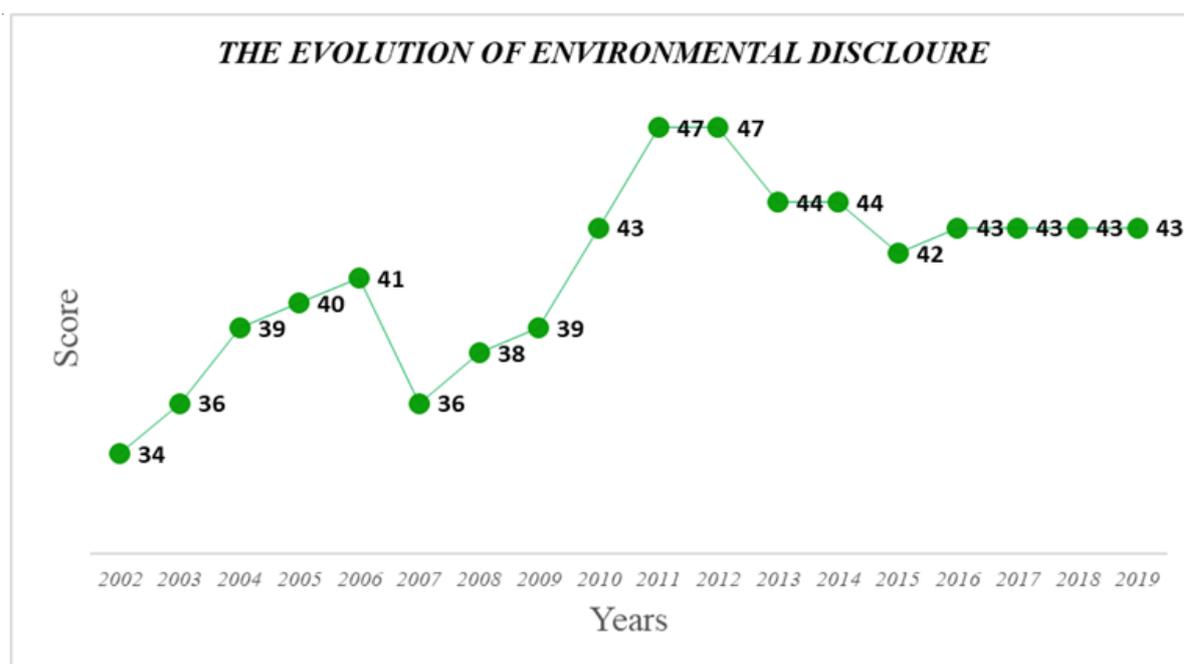


Figure 20: Scores
Source: Personal Elaboration of Snam, 2002-2019

It is noteworthy that there is, with no doubts, an improvement in the environmental disclosure from 34 to 43. However, it is true that there are many fluctuations: in 2007 there is an important worsening and, also, from 2013 to 2015. Since 2016 environmental content score has been staying steady.

Then, I should consider that content analysis, even if I use a precise and renown index, is contaminated by subjectivity when applied and thus, the company may be assigned few more points, or less.

To be more precise, there are some categories that lack of disclosure, but this may be due to my personal interpretation of the content or it may be caused by the actual absence of the item rather than the missed disclosure.

In particular, the best disclosed category, in proportion to the total score, is A5, vision and strategy claims, and the worst are A3 and A7, environmental performance and initiative.

In my opinion, there is room for improvement; in fact, for instance, comparison with peers in A3 could add at least 7 points per year, considering the items for which Snam discloses data.

Also, with an overview about the competitors and the sector in general, A6 would record 2 points more per year.

Furthermore, disclosing the amount saved by implementing new environmental activities, and the amount spent on fines due to environmental problems, that would have added again 2 more points.

Just with these adjustments, for example, in 2012, Snam would have reached almost 60 points over 95.

Always in section A3, as concerns the impact of the products, the company loses 6 points per year because there are not precise paragraphs about the comparison with peers or targets or previous periods. I think that Snam discloses throughout the entire report the implications of its business, and it is already awarded under other items, therefore the score 0 is quite relative. It is difficult to state if the disclosure is good or bad without using a proper benchmark, like a competitor's environmental disclosure content analysis.

Even though, it is also difficult to forecast if in the future there will be more environmental disclosure, because from 2010 the most recorded score is 43.

In this sense, analysing the reports and recent initiatives like the hydrogen inclination, it is evident that Snam cares about the environment and that it will continue following this path in the future. It may be that Snam will improve and implement new environmental initiatives given its commitment, with or without disclose more. In my opinion, for instance, disclosing about money saving and gaining 1 more point it does not mean that there is more engagement in environment; so, it is more important to disclose bad impacts of the business or positive initiatives rather than merely environment-linked aspects.

However, I have found very useful to use Clarkson et al. (2008) index as it covers a lot of interesting and important items and it is suitable for lots of companies allowing quantitative and qualitative benchmarking.

To conclude, the relevant aspects that emerge in this dissertation, as regards the empirical section, it is that since 2004 Snam has been using Global Reporting Initiative guidelines.

The pages of the reports have increased a lot reaching more than 140, and the environmental disclosure seems to be constant around 20 pages, starting from 10, therefore the quantity of disclosure has undoubtedly increased.

The sections of the table of contents have decreased a lot, but this is just a misleading preview, as the categories in the environmental sections have improved and there are even more and more sections and dedicated paragraphs.

Lastly, considering Clarkson index, the score has increased in the period of analysis, and thus, with respect to the fulcrum of my thesis, I can confirm that there is an evolution in environmental disclosure, and in particular a small improvement.

From the figures 21 and 22, we can see the trend of the score distinguishing hard and soft disclosure, recalling that they can account respectively for 79 and 16 at the most, every year.

As regards hard disclosure, the most detailed and reliable information, in 2002 Snam accounted for 25, disclosing the 32%. In 2019, the company reached 33 points recording the 42%. Thus, there are 10 percentage points more in 18 years, with a growth in disclosure of 32%.

Soft disclosure undergoes an insignificant change, from 9 to 10, with a growth of 11% and reaching a total disclosure of 63%.

With this analysis it appears evident that soft disclosure is more declared over years, even if it is a less valid and solid information; however, the score is steady. Moreover, soft information represents just the 17% of Clarkson et al. (2008) items.

In this respect, only hard disclosure fluctuates and evolves through time. More precisely, as said before, it improves a little and it may undergo a variation in the future.

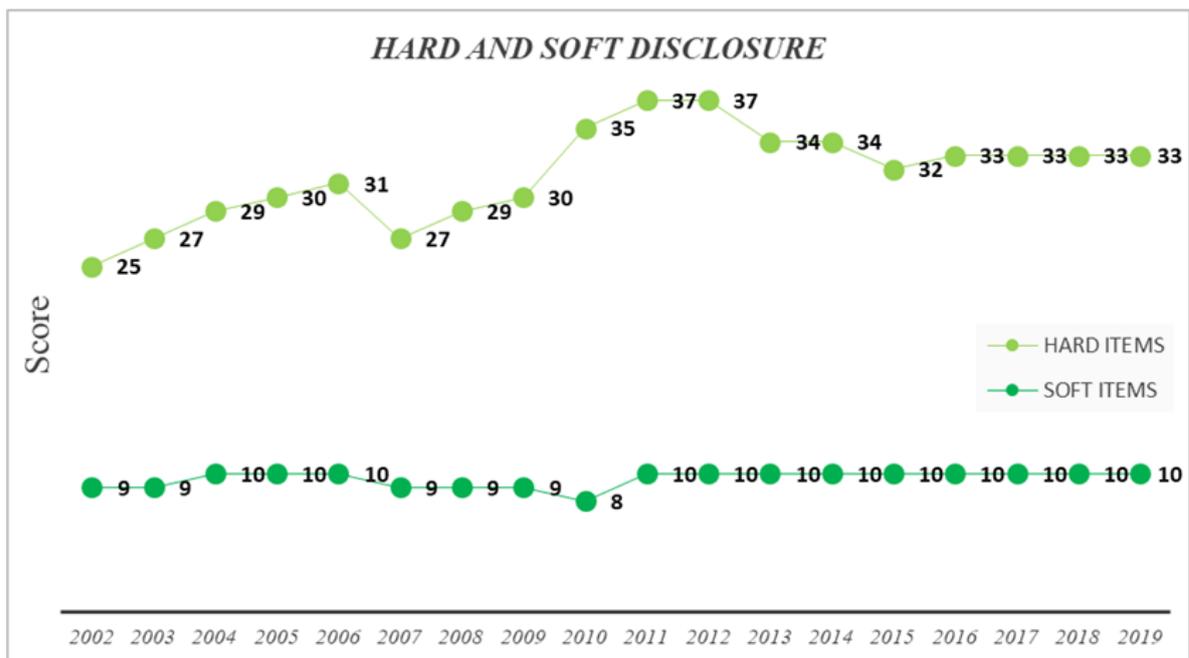


Figure 21: Hard and Soft disclosure
Source: Personal Elaboration of Snam, 2002-2019

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A 1 Governance structure and management systems (max score is 6)	3	4	4	4	3	2	3	3	5	5	5	5	5	3	4	4	4	4
A 2 Credibility (max score is 10)	3	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
A 3 Environmental performance indicators (EPI) (max score is 60)	18	18	18	18	20	19	19	20	23	24	24	22	22	22	22	22	22	22
A 4 Environmental spending (max score is 3)	1	1	2	2	2	0	1	1	1	2	2	1	1	1	1	1	1	1
<i>TOTAL</i>	<i>25</i>	<i>27</i>	<i>29</i>	<i>30</i>	<i>31</i>	<i>27</i>	<i>29</i>	<i>30</i>	<i>35</i>	<i>37</i>	<i>37</i>	<i>34</i>	<i>34</i>	<i>32</i>	<i>33</i>	<i>33</i>	<i>33</i>	<i>33</i>
A 5 Vision and strategy claims (max score is 6)	6	6	6	6	6	5	5	5	4	6	6	6	6	6	6	6	6	6
A 6 Environmental profile (max score is 4)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
A 7 Environmental initiatives (max score is 6)	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<i>TOTAL</i>	<i>9</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>9</i>	<i>9</i>	<i>9</i>	<i>8</i>	<i>10</i>								
TOTAL	34	36	39	40	41	36	38	39	43	47	47	44	44	42	43	43	43	43

Figure 22: Scores
Source: Personal Elaboration of Snam, 2002-2019

Then, I have suggested some areas to be improved easily, however I have acknowledged the risk of subjective bias.

Also, I recognize that Snam has always shown a relevant commitment for the environment safeguard, showing particular attention to the biodiversity protection, reforestation, monitoring all the possible risks due to its business and the pipelines state, the disclosure of gas emissions in the atmosphere, setting targets to be achieved in order to impact better on the territory, reducing the use of the plastic, providing sources of energy that have low consequences on the environment.

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