

# RECYCLING STRATEGY AS A CONSEQUENCE OF SOCIO-ECONOMIC GROWTH. THE CASE OF AN ITALIAN SME

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## 1. Introduction

Ever since the recent policies adopted by the European Union<sup>1</sup>, the environmental field has acquired new importance both at a regional and a national level. However, only measures that involve the entire International context will successfully address and attenuate the dramatic situation of the polluted environment in which we currently live. For this reason, between 2005 and 2006, during the Sixth Environment Action Programme, the European Committee issued 6 strategies for sustainability (Atlas, 2007):

1. Climate Changes - minimize gas emissions;
2. Nature - protect and restore the functioning of natural systems;
3. Biodiversity - limit the impoverishment of biodiversity;
4. Health - create a quality environment that will no longer expose human health to hazards and risks;
5. Quality of life - guarantee the application of norms that will reduce pollution levels;
6. Waste - resource consumption should not outpace the capacity of the environment to bear it.

With these six strategies, first articulated in 2005 but reconfirmed in the Road Map released in 2011, the European Union aims to carry out an ample analysis of the different long-term problems and themes, specially emphasising the impact on the environment. Since the 21<sup>st</sup> of December 2005, the European Union has adopted and implemented strategies to recycle waste based on its Sixth Environmental action plan. More recently “Europe 2020” showed the intention of the EU to become a smart, sustainable and inclusive economy. In this respect, the main goal is reaching sustainable growth, for a resource-efficient, greener and more competitive economy. So, Europe is going toward “sustainable development”. By “sustainable development” we mean development that meets the needs of the present without compromising the ability of future generations to meet their own

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<sup>1</sup><http://eur-lex.europa.eu/browse/pdf/directories/legislation.html?file=chapter%2015.pdf>

needs. This definition comes from the UN Bruntland Commission. By “socio economic growth” we mean the business development related to the society values.

A large number of countries are adopting environmental policies, especially because of new ‘green legislation’ and a new ‘green consciousness’. Companies are pulling in the same direction and so, according to Siegel (2009), environmentally conscious strategies have gained more and more relevance.

Currently, awareness of the social and environmental dimensions of sustainability appears to be stronger than knowledge about the economic dimensions (Michalos et al. 2011, 2012, 2015), and this can lead to several financial and economic problems.

In this framework, this paper shows the case of an Italian Small Medium Enterprise (SME), Alfa SpA, (this pseudonym is used to preserve the anonymity of the actual company) which has implemented some of these European strategies with the aim of combining them all into a single objective: obtaining a higher quality of life for people by minimizing the production and disposal of trash and waste. We consider this case study, a good example of an implementation of a strategy for sustainability, stressing the importance of environmental values and ethical principles linked to it (Falkenberg and Woiceshyn, 2008). In fact Alfa SpA has successfully applied what the European Union prescribes regarding waste management with a process that re-uses chalk (which would otherwise pile up in landfills), resulting in less waste of new raw resources. In this context, the value of this work is to show a SME that has developed a best environmental practice not to improve its economic situation but to be consistent with the socio-economic growth that is becoming more and more interdependent with ecological sustainability. Companies, as the one that we choose for this study, are becoming more conscious of their impact on the environment, overlooking (sometimes) the economic result especially in the short term, and paying more attention to the ethical dimension. According to Lewis, it is very difficult to define “Business Ethics”. But to cover the managerial field, “Business Ethics is moral rules, standards, codes, or principles which provide guidelines for the right and truthful behavior in specific situations” (Lewis, 1985, p. 382). Hence, in some cases, improving an environmental strategy should be considered a concrete application of the general rules of Business Ethics.

Considering the Green Economy as economic activity that improves environmental quality (Chapple et al., 2011), this article illustrates a green strategy of pollution prevention implemented by a SME using an innovative recycling process in the manufacturing industry. This specific category is particularly connected with sustainable development. In fact, “manufacturing has a significant economic and environmental impact” (Williamson et al, 2006, p. 319).

Most scholars who have looked at these issues have focused on companies with successfully implemented environmental practices that created cost benefits. But not all companies are in this situation. We present an Italian SME that has implemented an innovative environmental system called the GreenService that focuses on gypsum recycling and the prevention of waste material. So, this is a case of business innovation (in the environmental field), which is an important focus of the current literature (Pisano et al., 2014). The GreenService is a case of best practices, in fact it is the only Italian firm to develop this kind of recycling strategy in this field, and it is active not only in Europe, but also in Latin America.

The remainder of the paper is organized as follows:

- the first and second sections introduce the environmental issue, analysing the point of view of a number of scholars;
- section 3 discusses this study's research design and delineates the limitations of the research;
- section 4 presents the findings of this study's analysis;
- section 5 provides discussion and concluding remarks.

## **2. Literature review**

Because the paper concerns the case of a SME that has developed an environmental strategy focused on waste recycling, we deal first with the general literature about environmental practices and after analyse the green practices adopted by SMEs.

Environmental strategies have always had and always will have an importance in business success (Siegel, 2009). Sustainability has grown to become a major factor in the current competitive context (Garzella et al., 2011). Today, the prevailing and well-accepted idea is that all enterprises should integrate environmentally related issues into the strategic management of their activity (Aragon-Correa and Sharma, 2003; Sharma and Vredenburg, 1998), while looking for economic and financial balance. But it is not an easy strategy.

As many have noted, an effective environmental performance along with environmental risk management have become crucial aspects of business functioning, so much so that the successful operation of a business is contingent and dependent on them (Gouldson, 2004; Ambec and Lanoie, 2008; Anderson and Anderson, 2009; Al-Najjar and Anfimiadou, 2012). This is consistent with previous studies that maintain that a growing number of firms are considering the incorporation of environmental thinking into their business strategies, in the hope of improving their competitiveness (Maas et al., 2014). As a consequence of this, companies have implemented different methods to try and diminish the level of environmental impact

that industries, through their activities, have on the surrounding territory.

During the 90s, certifications were introduced that tried to quantify the consequences of this kind of impact, in order to greatly increase sensitivity to it. One of the main tools used to reach this objective is the certification (i.e. ISO 14001) launched by ISO in 1996 (ISO, 2010), which assures stakeholders that the environmental impact is being measured and improved. Another example is a scheme called EMAS, issued in 1995 by the European Union, which has been analysed by several authors, Lamming and Hampson (1996) or Iraldo, Testa, Freya (2009) or Delmas, Montiel (2009) and others.

The main literature suggests that firms implementing “best environmental practices” can improve their competitive position and reduce their impact on the environment (Cairncross, 1992; Hart, 1995; Schmidheiny, 1992; Shrivastava, 1995a; Smart et al, 199). This is not always true, however, because there are also external contingencies, for example the structure of the industries and the market (Reinhardt, 1998), on product characteristics and product markets (Shrivastava, 1995b; Stead and Stead 1995) or on complementary assets (Christmann, 2000).

Hart has identified two ways of reducing pollution: through prevention or through control (Hart, 1995). You can prevent pollution with: better housekeeping; material substitution; recycling; changes in the production process (Stead and Stead, 1995; Willig, 1994). In contrast, pollution control refers to efforts to trap, store, treat and dispose of emission using the correct equipment (Christmann, 2000).

Environmental issues focusing on recycling have been studied by many authors in fields as diverse as engineering, chemistry, jurisprudence, etc. Waste and recycling, for example, have been studied in the archaeological sector (Camilli and Ebert, 1992; Hiscock, 2009; Romagnoli, 2014). Others studied the necessary innovative installations for implementation of this practice. As an example, Hoyer et al. (2015, p. 535), determined “investment plans for the installation of recycling plants of different technologies” (such as lithium-ion batteries from electric vehicles) “and capacities and derived recommendations for potential investors”, analysing the German context.

Recycling also depends on the type of waste to be recycled: hazardous waste or solid waste, in particular plastic, paper, food, glass, toxic waste, construction and demolition waste, etc. The literature on household waste recycling is extensive. Among them we have chosen just a few. Some focus on a specific situation: Abbott et al. (2011) analysed the UK situation; Yau (2010) stressed the efficacy of waste recycling for Hong Kong. Others made comparisons, e.g. Ferrara and Missos (2012) compared ten different countries (Australia, Canada, Czech Republic, France, Italy, Korea, Mexico, Netherlands, Norway and Sweden) to examine their waste and waste prevention policies, and their recycling behaviour. Gypsum recycling is a very important part of the construction and demolition sector. This paper

specifically analyses the treatment of 'gypsum waste', which is a benefit that can be re-used. Its chemical composition, for example, makes its use preferable to that of lime, which is currently produced by the calcinations of limestone (Mihara et al., 2007). Furthermore, as maintained by Ahmed, Ugai and Kamei, *during the three stages of production, construction and demolition, approximately 15 million tons of gypsum plasterboard waste plasterboard is generated annually in the world. It is considered a serious problem due to scarcity of landfill space, with a resulting increase in disposal costs and environmental regulations* (2011). The valorisation of waste in this sector was studied in Italy (Sara et al., 2001), with the main research being carried out in the engineering field. To the best of our knowledge, from the business point of view, the recycling strategy is not well studied, in particular if it is implemented by a SMEs.

As already mentioned, companies have to consider their impact on the environment when implementing their strategy. They can develop a specific green economy depending on their activities. Obviously, also SMEs are involved in these new practices (Spence, 1999; Jenkins, 2006; Moore, Slack and Gibbon, 2009). SMEs account for over 95% of the private sector in most industrialized economies (Shamper, 2002), and the number will surely grow (Stokes and Wilson, 2006). This means that the sector of SMEs has a significant impact on the environment (Revell, Stoke and Chen, 2010 p. 275): they contribute up to 70% of the global pollution (Hillary, 2000).

The presence of a solid ethical framework, like the European one, helps to carry out socially responsibility practices in the SMEs (Del Baldo, 2009) in particular in Italy (Perrini et al., 2006; Gerrans and Hutchinson, 2000; Del Baldo, 2010; Balucchi, Furlotti and Petruzzello, 2011).

In fact, this paper analyses an Italian SME that adopts an environmental strategy based on waste management. *The Italian economic system and its attention to social relationships are considered remarkable, because of the predominance of SMEs and the significant level of involvement with local districts* (Perrini, 2006). The large population in the Italian system of SMEs (Balluchi et al, 2011) lead the authors to analyse this specific type of company, focusing on how it improves environmental practices.

To solve the issue of the enormous production of waste that inevitably damages the environment, companies must start reconsidering the issue of waste itself; industrial waste should best be regarded in business-economic terms as having the same basic status as regular products (Stenis and Høglund, 2002).

To "go Green", SMEs can implement different management programs, such as recycling practices (Cordano, Marshall, Silverman, 2010). Alfa has focused on waste management, in particular on the use of recycled gypsum that is derived from gypsum plasterboard waste in civil engineering applications (WRAP, 2007).

### **3. Research design**

The analysis of case studies is the preferred methodology used here to provide an answer to the research question (Yin, 1994), 'how socio-economic growth and ecological sustainability become more and more interdependent for the SMEs'. The aim of the paper, therefore, is to analyse sustainable development through the careful examination of the environmentally and socially conscious strategies implemented by Alfa SpA. More specifically, the research highlights the several strategies that have been implemented so far and what the economic consequences of each are. This approach seems particularly suitable as it perfectly captures the explanations for the "How" and "Why" questions (Yin, 1994). Furthermore, business cases can facilitate the development of deductive, inductive and critical reasoning skills (Falkenberg and Woiceshyn, 2008, p. 213). Alfa SpA was selected as a representative firm that has consistently pursued the highest environmentally conscious values. In this study, we collected both quantitative and qualitative data. According to Stake (1995), the research involved three phases:

- The first phase can be described as 'explorative', with the collection of secondary - sourced information (e.g. web sites, databases, books etc...). The goal of this phase is to pinpoint which data are the most suitable for this research. These data include television records that covered environmental issues as "Superquark," which explained the dangerous issues connected with demolition waste in the construction sector. It also included newspaper and magazine articles where Alfa SpA is mentioned as a case of best practices, including "Italia del Riciclo" and "Fondazione per lo Sviluppo Sostenibile".

We have selected Alfa SpA because it was also the winner of many important national and international awards in 2013 and 2014, such as: the Premio Confindustria Abruzzo Green; this prize was conferred by Confindustria Abruzzo, which introduced an annual prize for enterprises based in Abruzzo that develop "green" strategies; the Premio per lo Sviluppo Sostenibile, conferred by the Fondazione per lo Sviluppo Sostenibile and by Ecomondo - Rimini Fiera; this is given to enterprises that pay particular attention to their impact on the environment. The aim of this award is to highlight and connect the best environmental practises; the Klimahouse trend, aimed at promoting enterprises that minimise the use of energy and natural resources, especially in the construction field.

- The second 'explorative phase' is based on a series of interviews with administrative and communication officers, along with the coordinator of the environmental department. We first contacted the company via email, and followed up with telephone interviews. Finally, we sent an open questionnaire. The company later shared more documents concerning system implementation methods.

- The last and third phase consists of analysing of the collected data (Stake, 1995).

The research, with regard to environmental issues started in 2011, was carried out from September 2014 to September 2015 in close collaboration with Alfa SpA. Empirical evidence was collected through the scrupulous analysis of accessible documents, or was given by the company itself. Employees were at times allowed to release qualitative information during interviews.

#### **4. The case of Alfa SpA, and the recycling of the leftover gypsum**

First of all, we believe that it is important to briefly describe the gypsum production process, as it is useful for understanding the environmental strategy adopted by Alfa SpA.

Chalk is extracted from the ground or excavated from open-air quarries in many Italian regions including: Abruzzo, Tuscany, Molise, Emilia Romagna, Val Camonica and Val Trompia in Lombardy, Val di Susa, Asti and Sicily. It should be pointed out that in nature, chalk is found as a sedimentary rock called gypsum. It is extracted using mechanical means or explosives, and as a result, this method is classed as an activity with a high environmental impact. Gypsum is often used in construction and, to a lesser extent, in chemistry, medicine and art. However, to be used in construction, chalk must have some special characteristics such as versatility, workability, strength, it should also be a good heat and sound insulator, be fire-proof, and in particular be anti-seismic. On a different note, dry-production means that the processing systems must produce coated gypsum board.

Alfa SpA operates in the construction industry and it is mainly involved in the exploitation of gypsum quarries and the production of gypsum boards, in particular: boards, stuccos, accessories, metallic structures and systems for constructing interior and exterior surfaces. Alfa SpA has three factories in Abruzzo and its headquarters is in Milan (Italy). The technical and marketing operations cover Italy and 13 other European countries (France, Belgium, Holland, Sweden, Denmark, Norway, Finland, Italy, Poland, Romania, UK and Ukraine). Moreover, the organization is a leader in Latin America, with a presence in major countries such as Colombia, Argentina, Brazil and Chile. In November 2011, the Group Beta acquired Alfa SpA.

The name, as well as the current brand, were officially launched in 2012. According to the speech of the chief of the Board of Directors: *We did not want a descriptive name that would only account for the current solutions and product, limiting our future vision. Therefore we had to choose a name that was short and bold, a name that over time will represent our ambition: to free potential. The slogan, 'shaping the way people build' wants to guide the operations of*

*the company and inspire the way people live.* Alfa SpA wants to stress the link between its activity and the 'modus vivendi'. The close link between industrial activity and the way people live inevitably compelled Alfa SpA to operate in a very dynamic way, based on the needs and expectations of the moment.

In recent years, the impact of industrial activity on the natural environment has received an increasing amount of attention in governmental agendas, in academic literature, and in the popular press (Maas et al., 2014). In fact, according to Alfa's strategy, consumers are increasingly assuming a more ethical world-view about sustainability. It is therefore inevitable that any market maker needs to respond to these new ethical concerns. Among others, the environment characteristics and the evolution of technologies are the main variables of the competitive and innovative capacity of SMEs' (Ferrero, 1992). In fact, according to Alfa SpA, people are asking for more quality of life and a better environment in which to live, work and enjoy. An extensive knowledge of people, areas and market trends is the key to profoundly innovating the construction industry, and to creating solutions that are not only sustainable and accessible to everyone but that are also centred on the quality of life.

The company has pushed itself towards sustainability in a manner that is consistent with social economic development. And yet, as we have noted, it is important to consider contingencies that affect the relationship between environmental management and competitive advantage. (Cristmann, 2000; Berchicci and King, 2007; Hart and Dowell, 2011; Maas et al., 2014). It is very difficult to obtain economic advantages in over the short term (as is the case with Alfa Spa), but easier over the medium-long term.

Companies that demonstrate a commitment to the environment are highly regarded in the social landscape today, both by individuals and companies. The decision to adopt environmentally-friendly policies indicates the level of acceptance of those policies by the company, and reflects how deeply rooted those values are in the leadership of a company (Aragon-Correa, 1998; Sharma and Enriques, 2005).

Alfa SpA did not develop an environmental strategy to gain an economic profit. As DiMaggio and Powell explain, changes in organizations are not related with efficiency and competition: there is an interconnection between organizations and the environment condition (1983) that lead companies to change their practices. To demonstrate this, we find proof in the analysis of the economic data as well as in scholarly literature.

The data show how complex it is to express an economic opinion on Alfa's environmental strategy. In fact, we asked for specific economic data on the recycling program, but the employees said that they did not have the information required.



Sales	EBITDA	Net income	Total assets	Employees
€ 36.685.875	€ 717.382	€ - 1.090.141	€ 33.698.607	133

Table 1. Alfa SpA economic data at 2013



Figure 1. Sales Alfa SpA (€)

Figure 1 represents a decrease in sales that has been influenced by the financial crisis in the construction business. This crisis is happening not only in Italy, but also in many countries where Alfa exports. Therefore, it is not possible to point out if the introduction of the GreenService, which occurred in 2012, had a direct impact on the sales reduction.

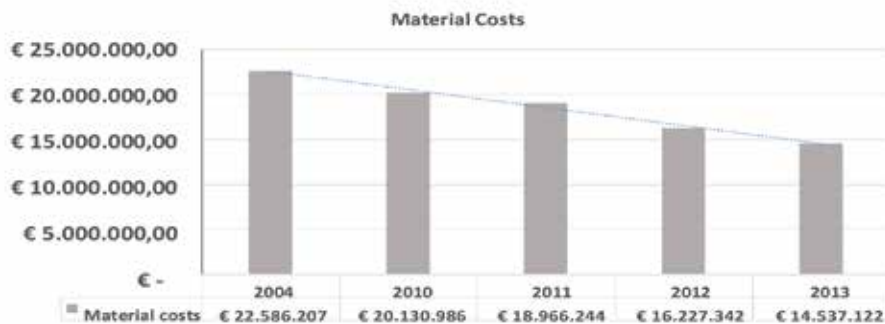


Figure 2. Material costs Alfa SpA (€)

During 2012-2013, when the GreenService was in place, the material cost sowed in the Balance Sheet, decreased by 10.4% and sales by 9.2% in the same period. This difference in percentage is not significant enough to express an opinion on the cost-effectiveness of the material cost due to the GreenService, but the fact that material cost decrease more than sales, is a good point in relation to the fact that Alfa needs less material thanks to the recycling process.

The economic and financial ratios (Dezzani et al., 2001) below, confirm the previously identified trend.

<b>ROE = net income / shareholder's equity</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
ROE (industry)	1.55				
ROE company	13,51%	9,67%	1,51%	4,16%	5,39%
<b>Quick ratio = (current asset- inventories) / current liabilities</b>	1,52	1,53	1,74	1,88	1,75
<b>Debt ratio in the short term = assets / equity</b>	1	1	1	1	1
<b>Capital to equity ratio= capital / equity</b>	0,51	0,52	0,50	0,53	0,56

*Table 2. Financial ratios Alfa SpA*

As Table2 shows, until 2011 the **ROE** was positive, whereas in 2012 and 2013, when the net income was negative, the ROE is also negative. On the database AIDA<sup>2</sup>, the industry's ROE is available only for 2009, and it levelled at around 1.55, against Alfa's company ROE, which levelled at around 13.51%. The **quick ratio** [(current asset - inventories) / current liabilities], measures a company's ability to meet its short-term obligations with its most liquid assets, without having to liquidate anything from stock. In this case, a value close to 2 shows that Alfa Spa has a good level of liquidity and can therefore face its short-term obligations. As is apparent from the **capital to equity ratio** (capital / equity = 0.56), the company is strong, in spite of the negative performance results. Moreover, the assets come to a total value of € 33.7 million, the tangible fixed assets are € 9.1 million and, as we have seen in the balance sheet, mostly include land holdings, industrial buildings and plants necessary for the operations and implementation of the GreenService, the service for recycling the waste produced during gypsum processing. Alfa SpA has invested in the GreenService implementation over the last three years. In the main research centre of the group in Avignon, the major topic is the creation of an eco-efficient construction process, for processing gypsum as well as for managing waste and recycling construction leftovers, which can now be reintroduced into the construction process instead of being disposed of.

Based on the financial/economic analysis, it is really difficult to express an opinion useful for understanding and clarifying the effect of the GreenService on the economic performance of Alfa. While the impact appears to

<sup>2</sup> AIDA database <https://aida.bvdinfo.com>

be negative, it is not clear if it was due to area recession, or the acquisition by Beta Group, or the implementation of the environmental strategy. But these data are important because they prove that the implementation of the GreenServices did not improve the economic and financial situation of Alfa SpA. So, Alfa did not gain an economic advantage from the implementation of the GreenService. This means that the development of the GreenService was not necessary in Alfa economic self-interest.

Alfa SpA was part of Delta Group, producing construction materials.

The group has been an outspoken ambassador of sustainability since 1971, when it attempted to minimize the emission of pollutant dust. In 1974 Delta started implementing processes aimed at using the industrial waste and leftovers as alternative fuel, hoping to reduce CO<sub>2</sub> emissions. In these circumstances, it is evident that, Alfa SpA was exposed from the very beginning to a culture of industrial innovation and the relentless desire to pursue sustainability as a company value and objective.

In 2011 Alfa SpA was bought by Beta Group, a company that was founded in the early 1900s near Brussels. Beta implements four strategies:

1. global company and local focus;
2. operational excellence;
3. leadership;
4. innovations and investments in R&D.

The current economic crisis has conditioned the nature of these objectives, whose implementation has also been influenced by the increasing complexity of economic and legislative systems, as building standards become more and more prescriptive, and the costs of production go up. The objectives listed above are also implemented with sustainable strategies; as Beta Group's annual report 2013 claims: *Beta Group strives to be the innovative leader in sustainable and affordable building solutions.*

#### *4.2 The environmental strategy adopted by Beta Group and Alfa SpA*

Beta Group and Alfa Spa dedicate a large section of their annual report to sustainability and topics related to environmental protection. This report is a great tool for understanding the line of sustainability that the company advocates. In 2013, as in the previous year, it was their intention to focus on the factors that they could actually have an impact on: cutting down on the use of natural resources by developing a more efficient production cycle, and providing customers with solutions that minimize their environmental impact. This latter notion is in fact one of the main goals they claim to pursue.

Beta Group's environmental strategy is focused on:

- energy consumption and CO<sub>2</sub> emissions;
- water consumption;

- recycling production waste;
- enabling customers to reduce their carbon footprints;
- path to improvement.

For the purposes of this paper, it is useful to further analyse briefly the above strategies, as they undoubtedly affect the practises of the whole group regarding for environmental sustainability and, as a consequence, also the environmental strategy of Alfa SpA. Each of the above strategies is considered below in more detail.

#### Energy consumption and CO2 emissions

One of Beta Group's top priorities is reducing energy consumption, and, correspondingly, its carbon footprint. In this respect, it should also be considered that the strategy at stake helps Beta Group decrease the production costs and safeguard its competitive position. In particular, this policy is carried out through efficient energy use that tries to limit the waste of energy as much as possible.

For example, to reduce the consumption of energy, Beta Group introduced the ISO 50.001 energy management standard. Despite this effort, in 2012, the energy consumption per ton of raw material and CO2 emission per ton of material produced decreased slightly, but in 2013 both the consumed energy and the CO2 emission grew again.

#### Water consumption

The Beta's Group environmental report shows a decrease in water consumption in 2013 from the previous year. As mentioned above, the data from 2012 onwards also takes into account Alfa's performance. This is the reason why water consumption increased so much. Moreover, this will push Beta Group to make Alfa SpA revise its water consumption.

#### Recycling production waste

Another extremely relevant point brought up by Beta Group is waste production and waste management. The company relentlessly worked to minimize its consumption of natural resources. In order to do so, it developed and implemented a strategy aimed at producing the least possible amount of waste, even though a certain amount of waste production was inevitable. What is perhaps more remarkable is the high standard it set for itself and the efforts it put into attempting to achieve its objective, namely to eliminate waste production by 2020. While such an ambitious goal may seem unrealistic, the company argues that it is actually possible to find new uses for all the materials that we currently consider as waste. According to Beta Group, then, if one manages to recycle all "waste", we can no longer define it as waste, but as re-usable raw components that become a necessary material for company activity.

In other words, by recycling 100% of its waste material, the company can completely reduce its production of unusable leftovers. More details

on this process will be provided as we move forward. Alfa SpA applied this strategy by creating a new recycling system in 2010. With the new system it returned the waste chalk to the production cycle, and subsequently managed to produce drywall that is 100% recyclable.

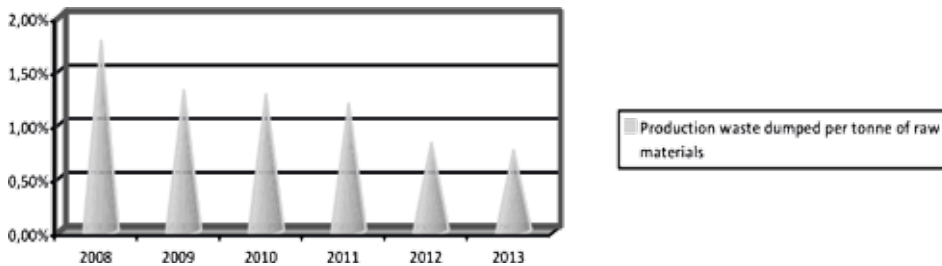


Figure 3. Beta Group production waste dumped (Beta Group Environmental report 2013)

### Enabling customers to reduce their carbon footprints

Beta Group also develops products and solutions that help builders reduce their carbon footprints. For this purpose, Beta Group launched DrySystems, which consists of a dry construction system for building exterior walls. Dry constructions are 100% recyclable or recoverable, and from an environmental standpoint are more sustainable than conventional buildings.

### Path to improvement

Finally, Beta Group sustains relevant costs and makes investments in order to reduce the environmental impact on our planet. In 2013, Beta Group spent more than 13.5 million Euro on environmental strategies. In 2012, the group streamlined its environmental approach to clarify Beta Group's efforts and goals and to analyse where the company strategy would be most effective. Acknowledging the large size and complexity of the group, Beta Group declared that it would continue its efforts to reduce its environmental impact and to minimise the use of energy and natural resources.

It now seems mandatory to scrutinize the data collected during the interviews with the various people employed by the company. They were asked about the company's proclivity for recycling and what pushed the company to turn its ideal into a structured strategy. As it turns out, a main influence on their actions was created *by growing sensibility and the need to conform to the sophisticated standards of some other European countries in which the group is already active. Alfa SpA can then refer to some of the standard practices already used in Germany and in UK, and add leverage with the fact that as a group it already has the 'know how' needed to refine its technique even more and be the Italian representative, at the forefront of innovation in the realm of the construction industry* – said the Customer Satisfaction Manager. *Project implementation was no exactly smooth and the company had to allocate resources*

*to face some pretty major investments and in order to receive the mandatory authorization to develop recycled material and make sure that the process used was compliant with company standards.*

The project was started in 2009 and was implemented over a year and half. By the fall of 2010 the company had successfully completed the process standardization. Paying attention to the time frame reveals some interesting facts about company philosophy. The fact that there was a major industry crisis during those same years, reflects that Alfa pays more attention on the environmental issues then on the economic efficiency. At a moment in time when every company was trying to cut down on costs, Alfa SpA searched and invested in an eco-friendly project.

*Alfa SpA this time did not have the luxury of using any previous study, as it was the first company to undertake such an ambitious task in the construction industry in Abruzzo, and it had to go through a long process before it could even obtain the right permits (e.g. operation R5 – D.Lgs 152/06). As the engineer said, Alfa SpA decided to include in the process several types of leftovers, which varied in composition and origin. The chalk-based leftovers it had access to mainly came from industrial or post-industrial contexts.*

Perhaps one of the most interesting findings is that, as the Customer Satisfaction Manager said: *Alfa SpA is the only plant in Italy that returns chalk to the production cycle immediately, therefore the subsequent development and installation of innovative machines and facilities follows. Such laborious effort would not have been possible without the relentless work of employees and large investments of capital.*

Despite the lengthy and at times tedious process, receiving the authorization to move forward with the project in order to re-purpose leftover chalk allowed the company to launch an incredible initiative to take full advantage of chalk waste. This initiative, which goes by the name of Green-Service, also provides great benefits to other processes that are simultaneously used in the plants, and they all get to share the added benefits of the recycled chalk.

As a result of increasing pressure on the industry to react to legislation changes and find sustainable solutions, Alfa SpA obtained ISO 14001 certification, which can be of help to organizations in all industries that are developing an environmental supply chain (Thomas and Griffin, 1996; Rao, 2002; Zhu et al., 2005; Handfield et al., 2005; Hervani et al., 2005; Arimura et al., 2001; Curkovic and Sroufe, 2001; Guoyou et al., 2012; Chiarini, 2013; Chiarini, 2014)

#### *4.2.1 The GreenService: the integrated production chain system*

After the devastating earthquake that hit the city of Aquila in 2009, the company invested in a new research project that focused on a plasterboard system with better resistance to seismic shock: a recognition of the company's social and environmental responsibility. To become an ethical leader, Alfa Spa should include competence or effectiveness with other "values such as integrity, honesty, trustworthiness, and a commitment to virtue as well as to service to the organization" (Poff, 2010, p.13).

Alfa Spa began with a basic premise: to re-use materials or leftovers, that were up to this point considered waste, to produce new goods or services. Basing its idea on this principle, Alfa Spa has implemented an integrated production chain system that makes the re-purposing of materials a much more efficient process. Specific technologies that turn waste material into new available resources were developed for plants that produce drywall sheets. Such a procedure has three benefits: from an environmental standpoint, less leftover material is produced and a smaller amount of non-renewable natural resources consumed. From a cost standpoint, less money is spent on disposing waste in landfills.

Natural chalk is a non-renewable resource. Saving money on the extraction of this material brings some amazing benefits both from an environmental standpoint (less exploitation of nature) as well as from a company cost saving standpoint (cutting down on the costs of extraction). The innovation consists of integrating the new recycling system with the drywall sheet production line. Through this strategy, the company ends up with methods for producing drywall sheets that are completely recycled and re-purposed, resulting in an infinite recycling process of chalk that is then re-introduced into the production cycle. Each and every time than the chalk is turned into waste, it re-enters the cycle. The drywall created during this process is 100% recyclable. The drywall in itself is a sustainable product. Its material has a reduced impact on the environment, its production requires a low quantity of energy and the only emission produced is vapour.

The leftover waste released throughout the process is inconsequential. The waste can be re-introduced during the process, and even the installation and demolition leftovers can be completely recycled and turned into raw material.

With GreenService, the company offers a double service to its clients. It delivers a recycling bag first, and then picks up the leftovers. The client can choose from two options for the pick-up of their leftovers. Alfa SpA takes the bags directly to the client along with specific support structures, meant to ease the collection of garbage. The client can then schedule pick up of the leftover waste. In this way, Alfa SpA optimises delivery / pickup logistics. The distribution warehouse plays a crucial role, becoming an authorized centre for the collection of waste. The GreenService has in fact

developed a unique service that pushes the boundaries of innovation from a technological standpoint and frees its customers from burdens.

Thanks to this customer-friendly service, Alfa's reputation as a good company to do business with has increased.

The process of inserting recyclable material in the appropriate receptacle is carried out by authorized third parties. The service is a fairly simple and cost-effective process that guarantees constant interaction with the client. Alfa is indeed concerned about sharing with its clients the importance of controlling the life cycle of the construction materials used (chalk). According to the manager responsible for this service, *the company positions itself as the very first player in the green economy*. Along with all the previously listed strategies, this is one of the reasons why it has succeeded in beating its competitors. One comment from the questionnaire results is that *Alfa SpA is one of the only plasterboard manufacturers in the world with its seismic testing facility*. This innovative plasterboard system has an obviously favourable impact on the environment. The customer is given an active role as well, contributing to the re-purposing of drywall sheets and waste disposal. This notion follows directly from the European Union 2008/98/EC directive that even provides the order of prioritization with regard to waste management and control:

- A. prevention;
- B. preparation for the re-use;
- C. recycling;
- D. other recovery;
- E. disposal.

The benefits for the clients include a more direct relationship with Alfa SpA that makes the overall service experience easier and allows for customization for each customer's needs. Furthermore this service reduces the waste disposal costs not just for the company but for the customer as well.

In the first year of operation alone, thanks to GreenService, Alfa SpA saved 22.4% of the natural chalk for the production of drywall sheets. Additionally the Company is refining its production line every year.

According to the most recent data, *as 2015, it reached even more impressive results, obtaining chalk savings of up to 28%*, said the Customer Satisfaction Manager. This piece of information is particularly important, as it indicates that more than a quarter of the products sold by Alfa SpA come from the recycled and re-purposed leftovers. Moreover, this means that the company also reduced its use of non-renewable natural material.

As an Alfa SpA manager confirms, *there is more: the system we have developed is meant to take advantage of this alternative resource, instead of exacerbating and consuming the already scarce natural resources. By doing this we also create less damaging consequences for the environment, protecting it from hazardous emissions in the atmosphere or dangerous drains in water.*



Implementing a sustainable strategy is thus extremely complicated. Indeed, there is a wide range of possibilities that may be considered by a company. In order to define a strategy as “sustainable” it is not sufficient to just reach the goal. It is also necessary to analyse and consider the direct and indirect impact that the strategy has both on internal and the surrounding environment.

In this respect, we may say that the “green” vision of Alfa SpA is aimed at acting on the enterprise/territory/innovation/sustainability system and on the integrated relationship between product, process and services. GreenService created the condition for the development of a new production chain that is environmentally sustainable, where its actions may contribute to pursuing common goals in a vision of total sustainability.

## **5. Discussion, conclusions and limitations**

A good reason why a company should develop an environmental strategy is because of the increasing value that society gives to environmental care and ethics, and to respect and help economic growth. This assertion is particularly true in reference to SMEs that are really influenced by society and its values.

De Burgos Jimenez and Céspedes Lorente (2001), determine the role of environmental protection in the business context. According to them, the evaluation of an organization’s performance is changing. Traditionally, it was measured in costs, quality, time and service whereas now the necessity to introduce environmental protection in firms in order to achieve sustainable development has become crucial and has thus forced a redefinition of the operations function. The implementation of sustainable strategies in itself does not automatically guarantee savings, but it usually establishes a new balance between savings and expenses. In fact, analysing the GreenService, we can affirm that profit-motive alone is not the main goal of an environmental practice.

The strong interconnection between the SMEs and environmental conditions, suggests that companies can modified their characteristics to increase compatibility with environmental characteristics: in a process of isomorphism (Hewley, 1968). In particular we can consider it a form of “coercive isomorphism”, because it results from “cultural expectation in the society within which organizations function” (DiMaggio and Powell, 1983, p150). Within this framework, it is clear that Alfa SpA has develop an environmental strategy principally motivated by external forces, ethics and social needs. In other words, socio-economic growth pushed the company to be receptive to ‘green’ alternatives, as these options are now perceived as extremely interesting opportunities. “The increasing aware-

ness of environmental issues has, however, created a rising demand for environmental - friendly business practices" (Gadenne et al., 2009). So, coercive isomorphism leads companies to develop environmental strategies.

Alfa SpA has developed an environmentally conscious strategy that embraces the green economy model and supports the recycling industry. Significant efforts went into finding viable solutions for the disposal and re-purposing of waste materials, which are then subsequently re-utilized in the production line through a waste collection system. The recycled and re-purposed chalk become the raw material used to produce drywall sheets with a content that is up to 28% recycled. The SME has developed a plant for returning chalk back into the production cycle immediately. The 28% of the drywall created during this sustainable process comes from recycled and re-proposed leftover gypsum, and the drywall is 100% recyclable. This creates a kind of infinite recycling process. This specific environmental strategy developed by Alfa has clear environmental advantages due to less waste production and a more limited extraction of gypsum, which in turn means less exploitation of nature and less use of a non-renewable resource like gypsum. In order to keep growing, economic growth demands that companies conserve natural resources, because if it does not, resources will be depleted and will no longer be available for the future. Companies depend on society, and economic growth is interconnected with companies and society. To support this, Williamson et al. (2006, p.319) assert that the environment, economy and society are the "three pillars underpinning the business contribution to sustainable development". So, environmental practices, as recycling, are important to preserve natural resources needed for the future Economic Growth.

Nowadays, clients are more and more sensitive to environmental concerns and consumers would much rather purchase products from a company that has demonstrated itself to be environmentally conscious. This is borne out by the many awards that Alfa SpA has received over the years that have in turn strengthened its corporate identity and served as a form of publicity and endorsement. Alfa as a SME that is close to its clients, was able to deliver more flexible and client-need-specific services, which helped consolidate its relationship with clients. The positive reputation that they acquired is also starting to change the practices of other companies that are themselves interested in becoming more environmentally conscious. The environmental aspect benefits of these corporate practices also benefit society in general, because there is a positive effect on human health: conservation of nature is also seen to have ethical value. Health is one of the principal reasons why people are moving toward environmental and ethical practices. So, social values lead companies to adopt environmental practices. Perhaps the most valuable lesson here consists of becoming aware of all of the practices that might be developed by construction

companies to create ecologically sustainable structures. The willingness to recycle natural chalk alone is not enough, and it becomes necessary to look for solutions that also provide viable ways to prevent polluting water, air, and soil. From this point of view, we can “assume that morality, technology, society, and the economy will evolve in particular way” (Alcadipani and Hassard, 2010, p.420), especially toward green and ethics values.

The main limitation of the paper is related to its focus on a single company, which likely means that the results cannot be fully generalizable. However, we can consider Alfa SpA an important example of an Italian SME that has implemented an environmental strategy according to the new green consciousness. Future research should analyse deeply the technical aspects of the implementation of construction processes - as related to pollution produced.

Furthermore, the research completed so far has failed to thoroughly examine the financial advantages and disadvantages offered by the innovative GreenService proposed by Alfa SpA. In this case, this lack of details is justified by the fact that the company did not provide all the required documents and did not draw up a sustainable report. It seems unusual for a company with favourable environmental performance not to provide voluntary environmental disclosure, but Dawkins and Fraas (2011, p.392) opined that “visibility is positively related to environmental disclosure, but does not moderate the impact of environmental performance on environmental disclosure”. There are in fact a number of variations between companies (Kolk, 2003; Patten, 2002; Russo and Fouts, 1997) and differing views as to why they voluntarily provide environmental disclosure.

In a future dissertation, there is a need to focus on larger parts of the supply chains in order to better understand and substantially change the environmental impact of global business operations (Suering, 2008) specifically on recycling business.

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## **Riassunto**

L'obiettivo dell'articolo è evidenziare come lo sviluppo economico sociale tenda sempre più verso l'implementazione di strategie ambientali per le piccole medie imprese (PMI), in quanto il plusvalore relative a tali strategie si riscontra a livello sociale ed aziendale. Per dimostrare ciò si è analizzato il caso di una PMI italiana, Alfa Spa, che ha implementato un innovativo sistema recupero di scarti di cartongesso: il GreenService. Oggi la percentuale di gesso riciclato è del 28%. Alfa è l'unico produttore di lastre di gesso in Italia a vantare tali risultati.

In rispetto al modello della Green Economy, le PMI devono implementare strategie conformi ai nuovi valori dettati dalle esigenze e preferenze dell'attuale crescita economico sociale, guardando oltre ai puri risultati economico-finanziari.

## **Abstract**

The aim of this paper is to highlight how socio-economic growth and environmental strategy become more and more interdependent for the SMEs, because the surplus relating to these strategies is found in social and business level. Following this purpose, the paper showcases an Italian SME that has developed an innovative "dry constructions system": the GreenService. Thanks to this process, today the percentage of recycled gypsum by Alfa amounts to 28%. Such an achievement is representative of the unique position this Italian company holds.

According to the Green Economy model, SMEs must implement strategies comply with the new values dictated by the current social economic growth needs and preferences, looking over to the pure economic and financial results.

**Parole chiave (Key words):** Italian SME; recycling; economic growth; case study; environmental strategy.

**Jel Classification:** M14

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