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Linking environmental accounting to reward systems:
the case of the Environmental Profit and Loss Account

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Abstract

This article aims to analyse how environmental accounting instruments can be linked to corporate reward systems for motivating a company's employees to embrace more environmentally friendly behaviors. To this aim, the paper focuses on a specific instrument - the Environmental Profit and Loss Account - that grounds on the idea of complementing the traditional profit and loss account by including figurative revenues and costs associated to the environmental impact of business activities. Based on the empirical evidence, derived from a multinational Do-It-Yourself retailing chain, the paper discusses how key design choices in the process of development of the Environmental Profit and Loss Account should be carried out to use this instrument as an input for the reward system and what problems and criticisms this choice implies.

In so doing, the paper contributes to fill a gap in the state of the art literature that so far has given limited attention to the problem of linking environmental accounting instruments to corporate reward systems. Based on the case analysis, the paper concludes with some guidelines concerning the key aspects that should be taken into consideration for this prospect use: alignment with the company's strategy, definition of quantitative and common objectives, integration with other human resource practices, and possible connection to monetary rewards. Then, for each aspect, the paper discusses the rise of potential trade-offs between completeness and controllability of the included items, environmental and economic performance, cost and precision of the system itself.

Keywords: environmental accounting, environmental impact, environmental performance indicator, Environmental Profit and Loss Account, internal accountability, reward system

1. Introduction

In recent years, companies competing in different business sectors started to consider the safeguard of the environment as an essential part of their business strategy, exploiting the improvement of the environmental performance to create a competitive advantage (Esty and Winston, 2009). This growing trend has led to the need of explicitly measuring a company's results from an environmental perspective (Clarkson et al., 2011; Bebbington et al., 2014).

To answer to this need, different approaches have been proposed in different streams of literature including for instance sustainability reporting (Epstein and Buhovac, 2014; Edwards, 2014), environmental accounting (Muller et al., 2011; Bebbington et al., 2014), management accounting (Bennett et al., 2011) and operation management (Hajmohammad et al., 2013). The approaches proposed in different fields are very diversified in nature (Gray and Bebbington, 2001), ranging from methods centered on physical measurements to approaches which evaluate in economic terms the effects of a company's activities on the environment (Jones, 2010). Despite the differences, some common features also characterize these methods. They base on the idea that it is necessary to take into account a wider range of impacts that a company has on the environment, extending the perimeter of the analysis and considering effects otherwise "outsourced" by companies. They adopt a longer time horizon, such as the life cycle of a product or a service. They consider the existence of a larger range of stakeholders, potentially interested in different types of performance. Then, how these common features are deployed in each case depends on the specific objective of the method at hand, that could aim at ensuring external accountability or supporting internal processes such as decision-making, internal accountability and personnel motivation.

Clearly, when moving from one objective to the other, some modifications in the way in which a company's results are measured are needed and even the same instrument when used for different purposes should be properly adapted. In particular, when a company aims at communicating its performance to external stakeholders, all the environmental impacts should be disclosed, whether controllable or not (Unerman et al., 2010). When decision-making and personnel motivation are at stake, caution is required to identify the aspects on which people could really act (Bennett et al., 2011). This issue should be taken into consideration when defining the boundaries of the analysis and when selecting the environmental dimensions to be measured. This is even more critical if the system adopted for measuring the environmental performance becomes part of the reward system with an impact on the personnel remuneration (Govindarajalu and Daily, 2004).

This consideration leads to the objective of this paper and its contribution to the literature. As highlighted above, in the last decades, many environmental accounting instruments were born with the aim of measuring the environmental performance. Concerning this issue, much attention has been

posed to the need of ensuring the ability of the measurement system to cover different relevant performance and quantify them properly, in order to account for an entity's impact (Bebbington et al., 2014). However, more limited attention has been posed to analyse how these systems should be modified when becoming part of a company's reward system to encourage a company's employees to make more environmentally friendly decisions. Most of the papers concerning this issue, in fact, recognize the relevance of integrating environmental performance in the reward system without providing any guidance about how to do that (Fernandez et al., 2003; Jabbour and Santos, 2008).

To fill this gap, this paper aims to analyse: (1) which are the main features and design characteristics that allow linking an environmental accounting instrument to a company's reward system and (2) what problems and criticisms emerge in this connection. To this aim, we refer to a specific environmental accounting instrument - the Environmental Profit and Loss Account (EP&LA) – implemented in a multinational retail Do-It-Yourself (DIY) company. The choice of this specific tool used in this situated case has been driven by the aim of the company under investigation of linking the stores' environmental performance to the reward system and the coherence of the EP&LA with the instrument that is at the basis of the reward system itself – the store profit and loss account. Then, moving from this specific case, we draw some general conclusions that could be possibly extended to other environmental accounting instruments, when being linked to corporate reward systems.

The rest of the paper is organized as follows. Section 2 outlines the state of the art literature concerning environmental reward systems. Section 3 summarizes the characteristics of the specific instrument addressed in the paper - the EP&LA. Section 4 describes the research methodology. Section 5 presents the main features and design characteristics that allow to link the EP&LA to the reward system and discusses the main criticisms emerged in different design steps. Finally, Section 6 concludes with a discussion of the main findings of this study, the research limitations and future research paths.

2. Environmental performance and reward systems

The issue of human resource motivation via performance measurement and reward systems is a central topic in the accounting literature. In this field, there are several contributions concerning how to build a performance measurement system and connect it to a reward system in order to improve a company's economic results (Clark and Wilson, 1961; Van Dijk et al., 2001; Griffin and Moorhead, 2011; Aguinis et al., 2013). In general, two basic principles inform the construction of a reward system: controllability and measurability (Neely et al., 1995; Bourne et al., 2000). The former refers to the possibility for managers/employees to control/act over a certain item; the latter refers to the

need of identifying an objective measure that could be used to assess a manager/employee performance. With these premises, accounting scholars have addressed the problem of how to enact these principles from different points of view, ranging from how defining and measuring performance accurately, making rewards contingent on performance, ensuring organizational justice in the reward system and balancing monetary and non-monetary rewards (Griffin and Moorhead, 2011; Aguinis et al., 2013).

However, when moving the attention from the economic performance of a company to the environmental one, these results cannot be applied directly, because this shift introduces some further elements of complexity. Trade-offs between economic and environmental performance could emerge (Hahn et al., 2010), environmental measurement systems typically rely on a different unit of analysis, (Gray and Bebbington, 2001) and ground on different methodologies (Bebbington et al., 2014) compared to traditional accounting systems.

Though different authors recognize the relevance of developing performance measurement and reward systems to incentivize environmental management (Fernandez et al., 2003; Cordeiro and Sarkis, 2008; Jabbour and Santos, 2008), only few authors have addressed the problem of how to build such a system. Concerning this issue, prior literature mainly provides some indications concerning the key characteristics a measurement and reward system should have in order to support the improvement of environmental performance, as discussed as follows (Laabs, 1992; Patton and Daily, 1998; Paillé et al., 2014).

Among the first papers that address this problem, Lent and Wells (1994) highlight the importance of reward systems reflecting corporate commitment to environmental performance, putting emphasis on the need of underlining a linkage between a company's business strategy and its environmental performance. This linkage allows defining shared objectives among different employees, leading to a "collective effort" that is seen to be stronger when quantitative objectives are settled (Garbers and Konradt, 2014).

Govindarajulu and Daily (2004) stress the need of taking into consideration the relationship that exists between rewards and different elements relevant in human resource management: top management commitment, employee empowerment, feedback and review processes. According to the authors, these factors are not independent from one another. Rewards alone could not lead to significant environmental improvement, but rewards in conjunction with feedback, empowerment and clear communication can lead to environmental enhancements (Govindarajulu and Daily, 2004, pp. 370). Their results are further confirmed by recent studies in the field of green human resource management, that highlight the relevance of developing green abilities and providing employees with

opportunities to be involved in environmental management organizational efforts (Simpson and Samson, 2008; Renwick et al., 2013).

A further aspect that emerges from the analysis of the literature concerns the type of rewards. Indeed, there are several ways to reward the achievement of objectives including award and recognition programs (Ramus, 2001; Simms, 2007), increase in pay, benefits and incentives (Ramus, 2002) and profit-sharing programs (Bonner et al., 2000; Mandip, 2012). In most of reported cases, appraisal and reward systems used to incentivize environmental management for employees other than top management consist in giving employees non-monetary rewards (Govindarajulu and Daily 2004; Renwick at al., 2013). However, Tariq et al. (2014), still recognizing the importance of non-monetary rewards, show that financial incentives rise more the commitment of the employees, suggesting the relevance of moving in this direction. Finally, some authors suggest the opportunity of configuring employees' compensation as a share of the savings made by the company thanks to possible environmental initiatives (Bonner et al., 2000; Mandip, 2012). For example, if the implementation of a team / employee's suggestion leads to relevant cost reductions, a portion of the achieved savings can be "given back" to the team or the employee who suggested the idea.

The following table summarizes the key characteristics emerged from the literature review as being pivotal aspects of a measurement and reward system suitable to achieve environmental improvements.

Please insert Table 1 around here

The analysis of prior research in this field leads to the identification of the existing gaps that this paper aims to address. Though prior literature allows to provide a picture of the key characteristics a performance measurement and reward system should answer for achieving an improvement of the environmental performance, how these characteristics could be ensured and what problems arise in their connection are aspects that have been, so far, under investigated. In the attempt to fill these gaps, the rest of the paper analyses how different design choices in the development of a specific environmental accounting instrument – the EP&LA - allow to reflect these characteristics and discusses what criticisms emerge in different design phases.

3. The Environmental Profit and Loss Account

The EP&LA has been proposed in the nineties as an instrument to report the environmental and economic performance of a company in combination, relying on emerging methodologies to calculate the economic impact of the company's operations on the environment. It is based on the idea of complementing "traditional" profit and loss account by creating a new document, that stands alongside the legal one and introduces into it figurative revenues and costs related to different environmental impacts (Sabeti, 2011). In practical terms, a company should report the cost associated with the impacts that its activities have on the environment alongside with traditional items of current expenditures (Gray and Bebbington, 2001).

In order to operationalize this methodology, two choices are crucial: the definition of the boundaries of the analysis (in terms of unit of analysis and dimensions of environmental impact to be considered) and the methods used for the evaluation of the environmental impact (Bebbington et al., 2007). Concerning these issues, the few available examples of application of the EP&LA discussed in the literature are characterized by relevant differences. BSO Origin has been maybe the first company to publish an EP&LA in 1990. With respect to the above choices, BSO Origin focused on the impacts directly attributable to the company (overlooking those determined downstream - i.e. by consumers - or upstream - i.e. by suppliers), with the exception of the energy used to power the plants. Concerning the evaluation methods, it combined three different approaches: the cost of preventing the environmental impact, the cost of repairing the environmental damage and the value lost by the community due to the environmental damage (Huizing and Dekker, 1992; Gray and Bebbington, 2001). More recently (in 2011), Puma published its EP&LA, making different design choices (Puma, 2011; Sabeti, 2011). In contrast to the previous case, Puma decided to extend the boundaries of the analysis to the entire supply chain, focusing on four dimensions of environmental impact: emissions, water and land use, and waste. As regards the evaluation methods, the company used different approaches for different environmental impacts. The company used the "Social Cost of Carbon" (SCC) methodology for air emissions; the "indirect use value" for water; the loss of biodiversity for land (Puma, 2011).

In both these cases, the EP&LA is used for external accountability: it complements pure financial communications with an outlook of the environmental impacts of the organization and provides a synthetic view of economic and environmental performance, translating into monetary terms the environmental results (Huizing and Dekker, 1992; Gray and Bebbington, 2001; Sabeti, 2011).

However, the EP&LA has also a potential of being used to support decision-making processes and motivate managers to embrace more environmentally friendly behaviors. In particular, it can help managers to visualize in the same document the economic and the environmental impacts associated to a specific choice highlighting: (1) the environmental costs that happen outside a company's

perimeter – i.e. the externalities determined by company's activities on the environment (Maunders and Burritt, 1991; Jones, 2010); (2) the effects induced in terms of additional costs and potential savings that occur beyond the timeframe of the fiscal year (Saravanamathu, 2004). This representation of the economic and environmental performance has a potential of increasing decision-makers' awareness about the environmental consequences of their choices because the environmental impacts are here translated in the same form and language that is used by managers in daily activities (Macve, 1997). The profit and loss account is, in fact, normally used to monitor company's results and it is typically a core element of the reward system.

4. Research method

4.1 Action research

The approach followed in this study was based on action research (AR), which has been selected due to its aim "to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework" (Rapoport, 1970). This methodology gives the possibility to focus on a problematic practical situation: the need to develop an EP&LA for a multinational DIY retailing chain, that, at the same time, offers an interesting setting for academic enquiry – i.e. the shift in the use of this tool from external to internal purposes and its linkage to the reward system (Reason and Bradbury, 2001).

Specifically, we conducted AR drawing on the seminal work of Susman and Evered (1978). According to the authors, AR is seen as a cyclical process articulated in five phases: diagnosing, action planning, action taking, evaluating and specifying learning. At the center of the cycle there is a client system that is the social system in which the members face problems to be solved by AR (in this case the multinational DIY retailing chain).

The approach adopted was highly participative, with continuous interaction between the researchers and the client system. At the beginning of the project, the person in charge for sustainability reporting at headquarter of the company was selected to act as a contact person for the researchers and participate to all the research activities. This person interacted with the researchers in all the phases of the AR cycles. In addition, different employees were involved as informants and prospect users of the EP&LA and three stores were selected to pilot-test the researchers' proposals.

Techniques used for data collection and analysis include in-depth interviewing, direct observation and documental analysis (data were drown from the records, memos, and reports that the client system routinely produces). Twelve semi-structured interviews were performed with different informants at both the corporate and the store level. The interviewees were: the head of the accounting unit, the

head of the supply chain unit, and the person in charge of sustainability reporting at corporate level; two retail store directors; three retail store controllers; two retail store chiefs areas; one retail store head of logistics; one project manager "eco waste" at store level. The formal interviews were often followed by follow-up questions and further informal meetings. Furthermore, eight official meetings with the head of the supply chain and the head of the accounting department took place for sharing methodological choices about the definition of the EP&LA.

4.2 The client-system: DIY

DIY[1] is a leading multinational company competing in the Do-It-Yourself market, offering a wide variety of products for bricolage, decoration, furniture and gardening. DIY Italian network counts about 40 retail stores, with more than five thousand employees and a turnover of over one billion Euros in 2013.

In 2010, the company has established its strategic guidelines for sustainability. Specifically, it has initiated a dedicated eco-sustainability program, aimed to reduce the consumption of raw materials; promote the use of alternative and renewable energy sources; reduce CO_2 emissions and improve the relationship with the local communities in the areas where it operates. The supply chain and the central functions have been the first areas where projects aimed to deploy the corporate strategy and improve environmental performance were enacted, reporting positive results in terms of reduction of energy consumption and CO_2 emissions. Then, between 2011 and 2012, the focus has shifted towards the stores (that obviously are responsible of a large part of the company environmental impact). The top management of the Italian network has started to intensify the activities performed to raise the awareness towards environmental sustainability at the store level involving both the employees and the clients. For instance, the company has organized ad-hoc training sessions about environmental sustainability for the store staff, it has lunched projects on specific areas (e.g. waste management, energy consumption) involving some pilot stores, it has intensified the commercialization of a range of "green products", that are often substitutes of traditional ones, promoting the sale of this "green-line" with in-store assistance and dedicated eco-labeling.

Among these initiatives, DIY corporate management has started to look for a way of connecting the environmental results to the store profit and loss account as a mean for inducing store managers to consider the environmental impacts when making decisions and embrace more environmental friendly behavior. The motivation at the basis of this choice was that the pivotal role covered by this document in the store's "everyday life". The store profit and loss account in fact is used by the store

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[1] DIY is a fictitious name used by the authors for confidentiality reasons

managers to make decisions, monitor their results, compare their performance against the other stores of the network, and it is also the basis of the incentive system of the store personnel.

4.3 The client-system: the store profit and loss account

The store profit and loss account is not a "legal" accounting document and though its structure is similar to the company's profit and loss account, it also includes some specific items, that reflect its internal scope (e.g. internal repartition of general expenses, distinction between influenced and not influenced expenses). In particular, the store profit and loss account is divided into two sections (see Table 2):

- the first section reports revenues and costs that can be directly influenced by the retail store's management and results in the "gross profit less influenced expenses";
- the second section reports costs that cannot be influenced by the retail store's management such as corporate expenses and taxes.

This profit and loss account is the basis of the incentives system used by the company to reward the retail store staff. In particular, a monetary award is assigned to the stores on a quarterly basis depending on the combination of three indicators, here labelled A1, A2 and A3[2]:

- A1 is the weighted percentage variation of net revenues, compared to the corresponding previous quarter. The weight of the A1 indicator is represented by the w_1 coefficient, that is a constant set by the company to reflect the strategic priority of this indicator in relationship to the following two. The formula is reported below:

$$A1 = w_1 \text{ x (net revenues }_{\text{quarter n}} - \text{ net revenues }_{\text{quarter n-1}}) \text{ / net revenues }_{\text{quarter n-1}} \quad (1)$$

- A2 is the weighted variation of the gross profit less influenced expenses, compared to the corresponding previous quarter, normalized against staff expenses. This normalization allows to take into consideration differences in both the number of employees and their seniority level (that is reflected in their gross salary). The weight of the A2 indicator is represented by the w_2 coefficient, that is a constant set by the company to reflect the strategic priority of this indicator in relationship to the other two indicators. The formula is reported below:

$$A2 = w_2 \text{ x [(gross profit – influenced expenses) }_{\text{quarter n}} \text{ - (gross profit – influenced}$$

$$\text{expenses)}_{\text{quarter n-1}}] / \text{staff expenses}_{\text{quarter n}} \qquad (2)$$

- A3 is an overall profitability indicator, linked to the results achieved by the store in the previous year, normalized against the staff expenses. The numerator monitors the store's "extra-profitability" that is obtained as a difference between the store's profitability and the minimum target profitability, measured as a percentage of net revenues (w_4 is the yearly target set by the company). The weight of the A3 indicator is represented by the w_3 coefficient, that is a constant set by the company to reflect the strategic priority of this indicator in relationship to the other two indicators. The formula is reported below:

$$A3 = w_3 \text{ x } [(\text{gross profit} - \text{influenced expenses})_{\text{year n-1}} - (w_4 \text{ x net revenues}_{\text{year n-1}})] /$$
$$\text{staff expenses}_{\text{year n-1}} \qquad (3)$$

Table 2 outlines the structure of the store profit and loss account and its link with the reward system in DIY.

Please insert Table 2 around here

4.4 Action Research cycles

The process of development of the EP&LA was articulated into two main AR cycles. The whole process lasted 14 months, during which the company's stakeholders continued to provide suggestions and feed-backs on the researchers' work.

The *AR Cycle I* aimed to develop a prototype of the EP&LA.

The *diagnosing phase* started with a literature review concerning EP&LA and two project meetings concerning DIY environmental strategy and the expected use of the EP&LA. The outcome of this phase was the identification of the key phases for the development of the EP&LA and the understanding of the expectations of key stakeholders.

Action planning consisted in mapping data and information needed to support the development of the EP&LA. A list of informants and relevant documentation was prepared by action researchers in collaboration with DIY contact person. In addition a list of critical issues (interview protocol) to be discussed with the informants was prepared.

In the *action taking* phase, interviews were carried out with key informants and public documents and confidential reports were analyzed to enter in detail the store environmental performance, the

store profit and loss account and store incentive system. Based on these data, the researchers produced a mapping of the store environmental impact and a list of activities that could be performed in the stores to reduce the environmental impact, that were further discussed with the store managers, a screening of different quantification methods and a prototype of the EP&LA.

In the *evaluating phase* the EP&LA was presented in a project meeting. Feedback, comments and suggestions for improvements were collected.

Finally, *specifying learning* consisted in summing up the learning outcomes of the AR cycle. All the comments and feedbacks deriving from the evaluation phase were integrated. The outcome of this phase was twofold: the validation of the overall structure EP&LA and the request to focus on a subset of issues in order to simplify the data collection process.

The second AR cycle, aimed to consolidate the selection of the activities / environmental impacts to be included in the EP&LA and define how to connect the EP&LA to store the incentive system.

The *diagnosing phase* started with a structured analysis of the comments received concerning the EP&LA prototype.

Action planning consisted in the definition of shared selection criteria to reduce the number of activities and environmental impacts, still ensuring that relevant issues were covered. To this aim, the following selection criteria were adopted: controllability of the activity, measurability and timeliness of the information (Neely et al., 1995; Tung et al., 2011). In addition, to support the selection process, follow-up interviews were planned with selected informants.

Action taking consisted in carrying out the interviews with an application of the selection criteria to define the new set of activities and develop alternative mechanisms to connect the output of the EP&LA with the store incentive system.

In the *evaluating phase* the results were presented in a new project meeting and one model for connecting the EP&LA to the store incentive system was defined. Feed-backs we received mainly dealt with some specifications in the information protocols, leading to new revisions.

The following table outlines the techniques used for data collection and analysis in different steps of the AR cycles, the role of the researchers and the client contact person and the output produced (Table 3).

Please insert Table 3 around here

5 Development and implementation of the Environmental Profit and Loss Account

The EP&LA was developed to support DIY to implement its environmental strategy, explicitly incorporating the environmental performance in the reward system used for the retail stores. This

specific aim drove key design choices performed in the process of development and implementation of the EP&LA, that was articulated into five steps: definition of the boundaries of the analysis, identification of the dimensions of environmental impact, selection of the methodologies for the monetary quantification of the environmental impacts, connection to the corporate incentive system, data collection and reporting.

As follows, we outline key design choices made in different phases, highlighting what problems and criticisms were associated to each of them.

5.1 Boundaries definition

The first step consisted in the definition of the boundaries of the analysis, that entailed the selection of what stages of the value chain had to be considered for the evaluation of environmental impacts (the whole chain or just some stages such as the production or sale) (Gray and Bebbington, 2001; Bebbington at al., 2007). In this case, the management of DIY had already decided to focus on the retailing chain and in particular on the stores, which were used as a unit of analysis.

However, this choice had significant implications concerning the specific processes that could be considered, determining the rise of a first type of trade-off between completeness and controllability of the included processes (i.e. the possibility for the store managers to control/act over a certain process).

Given the aim of the EP&LA in the case setting, figurative revenues/costs were associated only to the processes that are under control of the store managers. In particular, referring to the primary activities of the value chain (i.e. inbound logistics, operations, outbound logistics, marketing and sales, service), operations and inbound-outbound logistic are totally centralized, therefore they are not controllable at the store level. On the contrary, most of the activities related to the marketing, sales, and service are under the responsibility of the store managers. Considering support activities (i.e. firm infrastructure, human resource management, technology development, procurement), most of them are not controllable at the store level, because they are either totally centralized (e.g. technology development, procurement) or ruled by a central procedure (for instance, the temperature in the store should be 20 degrees, which affects heating and conditioning). Instead, human resource management, use of external warehouses, waste, water and energy management are under the responsibility of the store managers.

Due to the need of developing an EP&LA for supporting decision-making and internal accountability at the store level, only controllable activities were included in the boundaries of the analysis. Obviously, if the EP&LA had been aimed to external accountability, most of the excluded items should have been included.

5.2 Identification of the environmental dimensions

The second step consisted in the identification of the relevant environmental dimensions and related activities. To this aim, the list included in Global Reporting Initiative (GRI) was used as a starting point since it can be considered the most comprehensive framework for sustainability reporting (Hussey at al., 2001; Morhardt at al., 2002; Lozano and Huisingh, 2011; Arena et al., 2013), and it was adapted coherently with the objective of the EP&LA in the specific case – i.e. supporting decision-making and internal accountability. In particular, the selection of the environmental dimensions aimed to focus on the environmental impacts that were considered relevant for the company's strategy and that referred to activities controllable by the stores.

Again, there was a trade-off between the included items' completeness and controllability. Based on this selection criteria, the environmental dimensions considered were: materials (consumables), energy, and water, which are three standard categories of inputs required for production and distribution activities; emissions, waste and products, which refer to outputs and by-products associated with every business activity; and biodiversity, which relates to soil consumption for internal dedicated warehouses.

Then, for each environmental dimension, the researchers mapped the specific activities carried out in the retail store, that could have an impact on these environmental dimensions, and evaluated for each activity the related level of controllability (low, medium, high), referring to the extent to which the store managers can reduce the associated environmental impact (Table 4).

Here, two further types of trade-offs emerged. On the one hand, there was a trade-off between the possibility of creating more opportunities of employees being involved in environmental management and controllability over the items included. The store managers were generally purposeful and assertive in this stage. When asked to discuss with the researchers the range of activities to be considered, the store managers generally stressed their ability of "doing something" in connection to the proposed items and they made many different proposals to integrate the list of the activities, in particular on the revenues side. This was obviously positive in terms of employee engagement, however, posed the problem of carefully verifying to what extent the proposals put forth by the employees had some concrete chances of being implemented.

On the other hand, a trade-off between economic and environmental performance emerged. The list of the activities included in this stage in fact comprises items that have positive impacts on the economic and environmental performance, and items that have positive impacts on the environmental performance and negative impacts on the economic performance entailing a reduction of the store profitability, at least in the short term (for example, in few cases, green products have a gross margin

lower than traditional products). When this type of trade-off emerged, the choice of including / excluding an item from the list of activities was discussed with the company's management, leading to the identification of some areas, in which a reduction of the store's profitability was accepted in place of an improvement of an environmental issue that was particularly relevant in relationship to DIY strategy. For instance, since the company aims at becoming market leader for certain products segments, a reduction of the store profitability in selected cases was considered acceptable, leading to the choice of encouraging the promotion of green products (even in the few cases of a lower profitability).

Finally, for each environmental dimension, the researchers defined the indicators to be used to measure the environmental impacts and proposed an information protocol[3], that specified how each indicator should be determined and who was in charge of measuring it – whether a central function or the stores (Neely et al., 1995; Lamberton, 2005). In developing the information protocols, a trade-off between the precision of the selected measures and the cost of data collection had to be considered. Concerning this point, both the controllers and the directors of the pilot stores resulted particularly worried about the possibility of been asked to directly collect data. The stores generally count only few employees in the administrative area, and these persons are already involved in many different activities. Hence, the interviewees highlighted the importance of avoiding to hinder the store with additional requests of data. From this perspective, the centralization of the process of data collection allowed to limit the effort asked to the store staff and the communication of the relevance of the EP&LA project in connection to the deployment of the corporate sustainability strategy allowed to overcome some residual resistances.

Please insert Table 4 around here

Table 4 shows the list of the selected environmental dimensions, with related indicators, and the activities that resulted at least partially controllable – i.e. on which the store staff could act to reduce the environmental impact of the store.

5.3 Quantification methodologies

The third step consisted in the selection of the methodologies used for the monetary quantification of the environmental impacts associated to the above activities. In this respect, the literature provides extensive research on quantification methodologies and for each dimension of analysis, there are different valuable methods (for a review, see for instance Pearce, 1999; Tol, 2009). As follows, we

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[3] Information protocols are available from the authors upon request

do not focus on the comparison of different methodologies, but we report just the one that has been used in this research for quantifying the environmental impact. In contrast with what happens when this type of instrument is used for external accountability, the quantification, per se, is not as central as the selection of the boundaries and the environmental dimensions. The motivation at the basis of this difference relies in the way how these values are used in the reward system - that focuses on the periodic improvement of an environmental performance and not on the overall value (as discussed in section 5.4).

5.3.1 Emissions

The environmental impacts associated to Greenhouse Gas emissions were transformed into monetary values based on the methodology of the Social Cost of Carbon (SCC)[4] (Tol, 2009). The SCC, that is also called marginal social damage, represents the damage caused by one additional ton of carbon dioxide or equivalent substances. We chose this approach because of its diffusion in the academic and practitioner literature, as EPA and other federal agencies use it to assess the impact of policy decisions. The reference to a well-known approach made its communication and justification with the store personnel easier. The literature provides many different estimates of the SCC, that depend on the assumption related to different parameters (Tol, 2009; Johnson and Hope, 2012). They range from 10 €/ton to 1,300 €/ton. In this study, an estimate of 80 €/ton was used (which is in line with the average values in the literature) (Tol, 2009; Anthoff and Tol, 2013).

5.3.2 Waste

The environmental impacts related to waste were translated into both figurative costs and revenues. Figurative costs were estimated based on the SCC of the emissions generated by the waste disposal at landfills or incinerators since the related environmental impact is different. To this aim, three types of waste were considered: non recycled waste (i.e. generic industrial waste), hazardous waste and paper used for the preparation of advertising material (considering it non recycled waste).
To determine the environmental impact of the waste treatment, reference was made to the guidelines proposed by the Intergovernmental Panel of Climate Change (IPCC, 2006), which consider different chemical composition of waste and, as consequence, different emission levels. The table below shows the conversion parameters.

Please insert Table 5 around here

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[4] Other possible approaches include the Marginal Abatement Cost (MAC) and the Shadow Price of Carbon (Kontovas and Psaraftis, 2010)

On the other hand, figurative revenues were associated to the WEEE and batteries take-back. In particular, a monetary amount equal to the collection cost was recognized to the store, in order to encourage the implementation of activities aimed to improve the collection rate of this waste material.

5.3.3 Energy

The environmental impact of energy consumption was estimated based on the emissions related to the production of a kilowatt-hour (KWh), which were translated into monetary terms based on the SCC. Though the source from which the energy is obtained is particularly relevant to determine the environmental footprint of an organization, this choice was not controllable by the store's management, consequently, a weighted average of the emissions associated with different types of electricity production in Italy was used, based on the following conversion formula (ISPRA, 2012): ton CO_2/KWh = 0.000363

5.3.4 Water

The environmental impact associated to water consumption was translated into monetary terms based on a water "opportunity cost". This charge is the lost value associated with reduced water availability for direct consumption. In details, this cost addresses the fact that a user that consumes a certain amount of water is depriving another user of it. This opportunity cost is zero only where there is no alternative use (Agudelo, 2001). In this work, we considered as alternative use the traditional urban water supply in an industrialized country. In this situation, we estimated the opportunity cost on the basis of the price that is applied in urban areas (Briscoe, 1996). As this price changes in different Italian cities and ranges from 0,6 €/m^3 to 2,4 €/m^3 (Massarutto, 2011), we assumed an opportunity cost equal to 1.2 €/m^3.

5.3.5 Consumables

Consumable consumption was mainly related to paper usage. The environmental impact associated to paper usage was computed based on the emissions associated to the production of one ton of paper (Swedish Royal Institute for Technology, 2007). Then, tons of CO_2 were translated into monetary values based on the cost previous defined.

Please insert Table 6 around here

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5.3.6 Biodiversity

The environmental impact on biodiversity was strictly related with the settlement of external warehouses, because this is the only choice connected to the space use that was really attributable to the single store. This externality has been evaluated based on the biodiversity value. A study carried out by the TEEB – The Economics of Ecosystems and Biodiversity - identified few macro-regions, to whom is associated a biodiversity value (€/m^2). In this case, we assumed a value equal to 0.5792 €/m^2.

Please insert Table 7 around here

5.3.7 Products

Finally, figurative revenues were associated to the percentage of sales of "green-line" products. Figurative revenues were calculated in terms of an additional margin. For each product category where the "green line" product was less profitable than the correspondent "traditional" product, the additional margin was estimated as the average difference in profitability between green products and their substitutes.

5.3.8 Global picture

The table below provides a synthesis of the coefficients used to determine figurative revenues and costs associated to the environmental dimensions identified. As previously highlighted, the particular aim of the EP&LA shifts the attention from the evaluation methods to the way in which the results of the analysis are connected to the reward system.

Please insert Table 8 around here

5.4 Link to the reward system

The fourth step consisted in linking the EP&LA to the reward system. To this aim, alternative compensation schemes were elaborated and discussed with the company.

First, in all the configurations, figurative revenues and costs were integrated in the first part of the store's profit and loss account which includes the difference between the net revenues and influenced expenses (i.e. the items considered controllable by the store management as discussed in section 3.2). Then, three main options were proposed.

The first option consisted in adding to the existing reward system, that relies on the indicators A1, A2, A3, a fourth indicator, named A4, calculated on the basis of the EP&LA. The indicator is calculated as the percentage variation of figurative revenues less figurative costs, compared to the previous quarter.

$$A4 = w_4 \text{ x (figurative revenues – figurative costs) }_{\text{quarter n}} \text{ - (figurative revenues –}$$
$$\text{figurative costs) }_{\text{quarter n-1}} \text{ / (figurative revenues – figurative costs) }_{\text{quarter n-1}} \tag{5}$$

This solution maintains the environmental and the economic performance separate, since the former is captured by A4 and the latter by A1, A2 and A3. In this way, it could be easier for the store employees to understand the contribution to the final reward of the first component (that is determined by the weighting system). However, the effort put in the development of a combined document would be somehow weakened by considering the economic and environmental performance separately.

The second option consisted in modifying the formula used for the A3 indicator and calculating it on the basis of the EP&LA. As in the original system, A3 is calculated on an annual basis according to the following formula:

$$A3 = w_3 \text{ x [(gross profit – influenced expenses + figurative revenues – figurative costs) }_{\text{year n-1}} -$$
$$(w_4 \text{ x net revenues }_{\text{year n-1}})] \text{ / staff expenses }_{\text{year n-1}} \tag{6}$$

This solution limits the contribution of the environmental component only to the annual result of the store, blending its impact with the economic performance. Furthermore, the yearly time-horizon reduces the possibility to stimulate the store staff to improve the environmental performance compared to what happens in the case of a quarterly feedback.

Finally, the third option consisted in calculating the whole set of indicator (A1, A2, A3) on the basis of the EP&LA. In this situation, the environmental performance of the store would have an impact on two of the three indicators, specifically the A2 and A3, where A2 is calculated according to (7) and A3 is calculated according to (6).

$$A2 = w_2 \text{ x [(gross profit – influenced expenses + figurative revenues – figurative costs)}$$
$$_{\text{quarter n}} \text{ - (gross profit – influenced expenses+ environmental revenues – environmental costs)}$$
$$_{\text{quarter n-1}}] \text{ / staff expenses }_{\text{quarter n}} \tag{7}$$

In this solution, the impact of the environmental component is more pervasive because it influences both the yearly and the quarterly reward, allowing a major staff engagement. The interpretation of the data is somehow more complex because the environmental performance is stirred with the economic one hence requiring teaching the employees how to read and interpret this data.

5.5 Data collection and reporting

Data collection was based on precise information protocols that specified how each indicator should be determined. As far as possible, the proposed indicators relied on consumption directly detectable from the company's bills (e.g. consumption of energy and water) or data already available to central functions for other scope (e.g. employees travel) in order to ensure measurability and reduce the effort required to the stores. Only, in few cases, data were not available at the corporate level, and the store controllers had to collect the required information, based on the shared information protocol, and communicate them to the corporate accounting unit, which reviewed and benchmarked data from each store against the overall network performance.

Afterwards, physical data were translated into figurative costs and revenues according to the coefficients presented in the previous section (Table 9).

Please insert Table 9 around here

In this first application, the EP&LA referred to yearly data, even though in the next future, it could be prepared on a quarterly basis. This choice has been motivated by the need of limiting, at least in the first application of the instrument, possible difficulties related to more frequent data collection.

The figurative cost and revenues were then integrated with the economic figures in the store's EP&LA, reported in Table 10 (figures have been slightly modified for confidentiality reasons)[5]. In general terms, figurative costs are considerably higher than revenues and the major cost item relates to the management of customers mobility (which weighs about the 70% of total figurative costs). Excluding this item, the activities that generate greater environmental costs are those that impact on energy consumption and waste[6]. As a result, the figurative items do not really change the economic equilibrium of the stores but are likely to influence their results (as well as the related reward recognition).

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[5] The results reported refer to the application of the methodology to a pilot store

[6] To manage the different level of controllability that characterizes different activities, a weighting system has also been introduced. For example, in this case, the effect of customers mobility has been further reduced by introducing a weighting system and associating to the impact of this activity a low weight (0.1).

Please insert Table 10 around here

As concerns the connection to the reward system, the company decided to embrace the third option, with A1, A2 and A3 indicators calculated on the basis of the new EP&LA. This choice aimed to stress the link between the environmental and economic performance, forcing the store employees to look at the environmental performance as part of their daily activities. Furthermore, since these indicators are calculated on a quarterly basis, it could be easier for the company to motivate the store managers to enact improvement initiatives, because they could see a more timely effect on the reward system. In conclusion, it is worthy of noticing that the extension of the EP&LA to the whole network was the most critical aspect. From this perspective, the company embraced a 'toe in water' approach, introducing the EP&LA gradually. The company is currently negotiating with the trade unions the timing of the change of the incentive system. In the meantime, it started different initiatives to foster employees awareness and let people get acquainted with the new system, before it replaces the old one. To this aim, it planned a sturdy dissemination program and started to calculate the EP&LA and communicate it to the stores, to set the baseline for future observations and to show how the indicators of the incentive system could change using it as a basis for the calculation of the annual awards.

6   Conclusions

This paper moved from the premises that many companies, in the last decades, started to look at environmental management as an important element of their business strategy (Esty and Winston, 2009). Consequently, approaches and instruments, commonly used to support strategic deployment, were applied also to the environmental performance (Melnik et al., 2003; Howes et al., 2013). In this context, a crucial role is covered by performance measurement instruments and their link to reward systems, that are typically used for incentivizing a company's employees to achieve certain results (Hsieh and Chen, 2011).

In the field of environmental management, the state of the art literature, so far, tended to focus on how the environmental performance can be measured in order to account for the impacts of a company on the society, whilst less attention has been given to study how these instruments and metrics could be linked to a company's reward system. To fill this gap, this paper analysed how environmental accounting instruments can be linked to corporate reward systems for motivating company's employees to embrace more environmentally friendly behaviors. To this aim, the paper focused on a specific instrument - the EP&LA – and analysed its main features and design characteristics in the light of its prospect use, outlining what problems and criticisms this choice implies.

As follows, based on the identification of some key characteristics an environmental reward system should have, derived from the literature review, and the empirical evidence, derived from the DIY case, we draw some concluding considerations concerning the most critical aspects in the design of an environmental accounting system to be linked to reward systems. In so doing, we aim to contribute to the state of the art literature in two ways. First, we integrate different requirements emerged in prior research concerning environmental reward systems, discussing the implication of these requirements and the specific problems in the analysed case. Second, we provide evidence of the potentialities of a specific environmental accounting instrument – the EP&LA – typically used for external accountability, for supporting internal processes (decision-making, internal accountability, employee motivation).

The first requirement derived from the literature analysis is the need of aligning environmental measures to a company's strategy, adopting some tools that are suitable to reflect broader corporate objectives and make clear top management commitment to environmental management (Lent and Wells, 1994). From this perspective, we consider relevant the choice of the specific environmental accounting instrument. In the DIY case, the store profit and loss account was chosen as a locus to "combine" the environmental performance because it has a pivotal role in the store's everyday life: connecting the environmental performance to it allowed to clearly communicate to the stores the importance attached to the implementation of the corporate environmental strategy. Hence, we argue that the choice of adopting a specific environmental accounting instrument should take into consideration the overall measurement infrastructure with which it will relate, in order to prevent environmental performance from being perceived as an "add-on" by the employees.

The link between the strategy and the reward system has also an implication in terms of selection of relevant performance dimensions, signing a relevant difference compared to what happens when environmental accounting instruments are used for external accountability. From an external accountability perspective, in fact, all the environmental impacts of an organization should be disclosed. Instead, from an internal perspective, only controllable items can be considered. This difference requires of establishing a selection process to focus the analysis on a sub-set of environmental issues, that are both relevant for the company's strategy and controllable by the employees. Furthermore, this selection process should take into account that different performance are in trade-off, hence requiring to set some priority areas in which these trade-offs are managed coherently with the strategy of the company.

The second aspect derived from the literature review deals with the characteristics of the objectives that should be conceived as much as possible in terms of common and quantitative targets (Garbers and Konradt, 2014). The case confirms the relevance of what emerges from prior research. In the DIY

case, in fact, the reward system is the same for all the store personnel and A1, A2, A3 indicators aim to quantify the stores' objectives. The choice of acting on these indicators was particularly relevant for making the store managers looking at the environmental performance as a "real" component of the store overall result. However, one aspect that requires caution is, again, the possibility of creating trade-offs and tensions among different performance (as in the case of green products) that could be further amplified by the connection to the reward system. In the case, the direct interaction with the company's top management was particularly important for solving critical situations (as discussed in section 4.2) and for communicating to the store's managers a shared message, in terms of strategic priorities.

The third point highlighted in the literature review is the relevance of looking at the environmental reward system as a part of broader human resource management activities, providing employees with opportunities to be involved in environmental management organizational efforts (Simpson and Samson, 2008; Renwick et al., 2013). This aspect resulted challenging in the analysed case because it led to the emergence of new trade-offs between the completeness of the performance measurement system (both in terms of environmental dimensions to be covered and in terms of new opportunities that could be included) and the controllability of certain items (determined by the need of including items that can be really modified by the employees). The inclusion of more environmental dimensions opens up new opportunities for action for the employees, but also poses some criticism if a lever is not completely controllable or can impact on different subjects.

Finally, prior research typically reports the use of non-monetary rewards for personnel other than top management (Govindarajulu and Daily 2004; Renwick at al., 2013), whilst the analysed case went into the direction suggested by Tariq et al. (2014) that highlighted the opportunity for the employees of being involved in environmental management also through monetary incentives. In DIY case, the choice of linking the EP&LA to a monetary reward system allowed the employees to start participating in the gains or cost savings obtained by the company through environmental management. This choice was effective to rise the attention of the store's managers on the environmental performance, making evident that it counts as much as all other performance and it is not and "add-on". However, it also made the design of the measurement infrastructure more critical since the trade-offs discussed above were amplified by the connection to their monetary reward.

In conclusion, we recognize the limitation of this paper. Since the data on which the paper is based are taken from a single company and refer to a specific environmental accounting instrument, they are not universally valid and pertain to a specific place and time (Yin, 1994). Future research, carried out in other settings, may test the validity of the preliminary evidence emerged in this research and possibly enhance our understanding of how linking different types of environmental accounting

instruments to reward systems in order to motivate personnel (other than top management) to improve environmental performance.

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Tables

Elements of the system	Specific features	Authors
Process	Alignment with corporate strategy	Lent and Wells (1994); Garbers and Konradt (2014)
	Integration with other HR management elements	Govindarajulu and Daily (2004); Simpson and Samson (2008); Renwick et al. (2013)
Type of objectives	Shared objectives	Garbers and Konradt (2014)
	Quantitative objectives	Mandip (2012); Garbers and Konradt (2014)
Type of rewards	Award and recognition programs	Ramus (2001); Simms (2007)
	Monetary rewards	Ramus (2002); Tariq et al. (2014)
	Participation in savings	Bonner et al. (2000), Mandip (2012)

Table 1. Key characteristics of environmental reward systems

	Store profit and loss account at DIY	Link with the DIY reward system
	Gross revenues	
	Net revenues (before promotions)	**A1 = sales progression**
-	Total customers discount	
+	Suppliers discount	
	Gross profit	
+	Revenues from customer services	
-	Customer expenses	
-	Staff expenses	
-	Operating expenses	
-	Advertising expenses	
-	Computer and cash registers	
	Gross profit – Influenced expenses	**A2 = management progression**
+/-	Extraordinary items	
-	Insurance and taxes	
-	Non influenced expenses	
	Net profit	**A3 = prosperity result**

Table 2. The DIY store profit and loss account and link with the reward system

Cycle I	Techniques	Role of the researchers	Role of the client contact person	Output
Diagnosing phase	Literature review, Project meetings	Challenge the informants to identify stakeholders' expectations about the EP&LA	Contribute to the discussion	Definition of the EP&LA expected use
Action planning	Literature review Project meetings	Define the agenda and design data collection tools	Support the researchers in identifying potential informants and provide feed-backs and suggestions	Design of the data collection tools to support the preparation of the EP&LA prototype
Action taking	Literature review Interviews Project meetings	Perform interview and data analysis	Contribute to the discussion and participate in data analysis	Development of the EP&LA prototype
Evaluating	Project meeting	Present the PMS prototype	Contribute to the discussion	Presentation of the EP&LA prototype in project meeting
Specifying learning	Internal meetings	Collect and analyse feed-backs and suggestions	Support researchers in interpreting feed-backs and suggestions	Integration of feed-backs and suggestions
Cycle II	**Techniques**	**Role of the researchers**	**Role of the client working group**	**Output**
Diagnosing phase	Project meetings	Identify key issues based on the output of the first AR cycle	Contribute to the discussion	Identification of the key issues
Action planning	Literature review, Project meetings	Define the selection criteria and design data collection tools	Support the researchers in identifying potential informants and provide feed-backs and suggestions	Design of the selection criteria and data collection tools to support the EP&LA revision
Action taking	Project meetings, Interviews	Perform interview and data analysis	Participate in data analysis and support the researchers in the definition of the information protocols.	Development of the final EP&LA and connection to the store incentive system
Evaluating	Plenary meetings	Present the final set of KPIs	Contribute to the discussion	Final presentation
Specifying learning	Project meetings	Collect and analyse feed-backs and suggestions		Practical directions for DIY, but also general guidelines at the academic level

Table 3. Action research cycles

Environmental dimension	Activity	Indicators	Level of controllability
Emissions	Management of staff mobility (home-work)	Distance traveled to make the journey home-work (round trip) indicating the means of transport used (km)	Medium
	Management of staff mobility (work travel by car)	Distance traveled to make business trips by car (round trip) (km)	Medium
	Management of staff mobility (work travel by train)	Distance traveled to make business trips by car (round trip) (km)	Medium
	Management of staff mobility (work travel by plane)	Distance traveled to make business trips by car (round trip) (km)	Medium
	Management of customer mobility	Number of receipts x average customer distance (km)	Low
	Connection between the store and external warehouse	Distance store-warehouse x number of connections (km)	High
	Home delivery	Number of deliveries x average customers distance (km)	High
Waste	Disposal of mixed waste	Amount of mixed waste (ton)	High
	Disposal of hazardous waste	Amount of hazardous waste (ton)	High
	Disposal of paper used for advertising communications	Amount of waste paper (ton)	High
	Take back program (batteries / WEEE)	Amount of collected WEEE (units)	High
Energy	Lighting	Consumption of electricity (Kwh)	Medium
Water	Use of water for irrigation and domestic use	Consumption of water (m^3)	Medium
Consumables	Advertising material	Amount of paper purchased for the production of leaflets (ton)	High
	Office activities	Amount of paper purchased for the office activities (ton)	High
Biodiversity	Use of external warehouses	Soil consumption for the external warehouse (m^2)	High
Products	Sale of "green-line products"	Contribution margin traditional products – Contribution margin "green products"	High

Table 4. Retail store activities and related environmental impact

Ton CO_2/ton waste	Industrial waste	Hazardous waste	Paper waste
Incinerator disposal	1.49	2.64	0.02
Landfill disposal	1.98	3.05	0.09

Table 5. Emissions related to waste management

Paper typology	Ton CO_2/Ton of paper
White paper	1.7
Recycled paper	0.75

Table 6. Emissions related to paper production (Swedish Royal Institute for Technology, 2007)

Macro-regions	€/m²
Grassland	0.0229
Sub-tropical forest and woodland	0.0251
Temperate Forest	0.0283
Tropical forest	0.1352
Inland wetlands	0.5792
Coastal wetlands	1.8653

Table 7. Value in €/m² of specific earth regions (TEEB, 2010)

Dimensions	Figurative costs	Figurative revenues
Emissions	80 €/ton CO_2	
Waste	Incinerator • Generic industrial: 119 €/ton • Hazardous: 211.2 €/ton • Paper: 1.6 €/ton Landfill • Generic industrial: 158.4 €/ton • Hazardous: 244 €/ton • Paper: 7.2 €/ton	Income equal to the cost of batteries and WEEE recovery
Energy	0.03 €/Kwh	
Water	1.20 €/m^3	
Consumables	White paper: 136 €/ton	
	Recycled paper: 60 €/ton	
Biodiversity	Range of values depending on the area	
Products		Margin integration

Table 8. Monetary value of environmental impact

Dimension	Activity	Physical value (annual)	Monetary value
Emissions	Management of staff mobility (home-work)	210,472 Kg CO_2	16,838 €
	Management of staff mobility (work travel by car)	8,300 Kg CO_2	664 €
	Management of staff mobility (work travel by train)	315 Kg CO_2	25 €
	Management of staff mobility (work travel by air)	1,439 Kg CO_2	115 €
	Management of customer mobility	4,065,584 Kg CO_2	325,247 €
	Connection between the store and external warehouse	0 Kg CO_2	0 €
	Home delivery	8,755 Kg CO_2	700 €
Waste	Total waste	543,589 Kg CO_2	43,487 €
Energy	Lighting	722,904 Kg CO_2	57,832 €
Water	Use of water for irrigation and domestic use	3,600 m^3	4,320 €
Consumables	Advertising material and office activities	61,575 Kg CO_2	4,926 €
Biodiversity	Use of external warehouses	0 m^2	0 €
	Total costs		**454,154 €**
Consumables	Take back program (batteries/WEEE)		384 €
Products	Sales of "green-line" products		85,709 €
	Total revenues		**86,093 €**

Table 9. The environmental monetary impact of the store

	Gross revenues	22,068,000 €
	Net revenues (before promotions)	**17,655,000 €**
-	Total customers discount	500,000 €
+	Suppliers discount	690,000 €
	Gross profit	**17,845,000 €**
+	Revenues from customer services	400,000 €
-	Customer expenses	350,000 €
-	Staff expenses	3,670,000 €
-	Operation expenses	975,000 €
-	Advertising expenses	840,000 €
-	Computer and cash registers	220,000 €
-	Figurative costs	454,154 €
+	Figurative revenues	86,100 €
	Gross profit – Influenced expenses	**11,821,946 €**
+/-	Extraordinary items	-2,000 €
-	Insurance and taxes	330,000 €
-	Non influenced expenses	8,000,000 €
	Net profit	**3,489,946 €**

Table 10. The store EP&LA