

Deliverable A1.2

Case Study Report

Carlsberg Italia S.p.A.



1. Introduction

As part of the preliminary research conducted for the LIFE EFFIGE project, Sant’Anna School and ENEA collected a list of good practices on life cycle assessment (LCA) implementation in our target industries, namely agrifood, catering services, foundry, and furniture. This list, or ‘observatory’ is made of fifty companies that had conducted an LCA for at least one of their products and used it thereafter to change either their products, their processes, or strategy. The fifty companies were then ordered according to the extent of the changes implemented. As a result, five companies were selected as they introduced substantial changes at the organizational level after conducting LCAs.

Carlsberg Italia S.p.A. (Carlsberg Italia hereafter) was selected to be included among our list of good practices as an example of a company with a life cycle mindset and its long time experience with LCA studies. This company started to use a life cycle approach in 2010 to analyze different possible alternatives for its existing products. One year later, Carlsberg Italia obtained LCA certified studies for its most representative products. This company was the first beer producer in the world that obtained an Environmental Product Declaration for its main products in 2011. Since then, the life cycle logic has pervaded all strategic choices taken by the company. In fact, each decision involving new and current products is judged according to calculations based on a life cycle approach. The adoption of the LCA methodology for assessing strategic choices triggered a series of initiatives related to sustainability within the company and outside, favoring its participation in several national and European projects. Furthermore, the company started in 2011 to publish a Sustainability report, which mirrored its sustainability strategy, known as *SustainaBEERity*. Since 2015, Carlsberg Italia has changed its strategy in favor of the more holistic *ResponsiBEERity*, which puts a sustainable mindset and the life cycle thinking at the heart of its business strategy.

Carlsberg Italia has conducted LCA for the majority of the beers of its brands. These are displayed in Table 1.

EPD	Central Product Classification
Carlsberg beer	Beer made from malt – CPC 2431
Tuborg beer	Beer made from malt – CPC 2431
Birrificio Poretti 4 hops beer	Beer made from malt – CPC 2431
Birrificio Poretti 5 & 6 hops beer	Beer made from malt – CPC 2431
Kronenbourg beer	Beer made from malt – CPC 2431

Table 1. Carlsberg Italia: List of EPD. Source: Carlsberg Italia website.

We collected information on Carlsberg Italia by means of desk and field research. Desk research started prior to contacting the company by having access to their website, the Orbis database, and other online websites resulted from an online search. We then contacted the company to set up the interviews and, in that occasion, we also asked for additional material relevant to the scope of our case study. Two interviewers were then in charge of conducting semi-structured interviews with key managerial figures relevant for our purposes. The protocols for these are available on request. Together with interviews, interviewers had also some time allocated to conduct a site visit of Birrificio Poretti, where Carlsberg Italia has its main production site. The material found online and that which emerged from our interviews was extensive enough that we did not require any further documents to assess

how a path from LCA to life cycle thinking happened in Carlsberg Italia. Table 2 displays the timeline of our research procedure, while more information on the structure of our information collection can be found in our ‘Case Study Framework’.

April 2018	Desk Research	Online	Carlsberg Italia, Carlsberg Group website Orbis: Carlsberg Italia profile Various websites
	Contacts		Email exchange and calls
May 2018	Desk Research	Off-line	EPD Project LIFE IRIS
15-06-2018	Field Research	Site Visit & Interviews	Site visit of Birrificio Poretti, 1h, with operations manager Interviews as follows: - CEO, 45 min; - Operations & <i>DraughtMaster</i> technology manager, 45 min; - Marketing manager, 30 min; - Plant manager, 25 min; - Customer supply chain manager, 42 min; - Procurement business partner manager, 30 min.

Table 2. Carlsberg Italia Information Collection Timeline

One researcher was tasked with the compilation of a file with key information on the company, before visiting the company to conduct interviews. This file was shared between the two interviewers and other members of Sant’Anna School involved in the project. This had two fundamental aims: one to guarantee that the two interviewers shared the same notions regarding the company, and also to check whether information they deemed necessary was already available or to be requested in situ. Table 3 reports key information on Carlsberg Italia.

Name of the organization and location of the headquarters	Carlsberg Italia S.p.A., Induno Olona (Varese)
Foundation	1876 as Birrificio Poretti by Angelo Poretti. The acquisition process by Carlsberg started in 1982 and was concluded in 2002.
Type of company	Corporate
Number of employees (last available year)	155 (2016)
Net income (last available year)	€462,894 (2016)
Main markets	Beverage
Brands	Carlsberg, Birrificio Poretti, Tuborg, Kronenbourg
Relevant brand/product for this report	<i>DraughtMaster</i> technology used to spill Carlsberg Italia’s range of beers, including: Carlsberg, Tuborg, Angelo Poretti, Grimberger, Kronenbourg

Table 3. Carlsberg Italia key figures. Source: Orbis database

1.1 Case Study Takeaways

The main takeaways from the Carlsberg Italia case involve how the LCA was able to identify the potential of an innovative technology in terms of environmental, social, and economic benefits. This allowed the company to differentiate itself from competitors and gain an enduring competitive advantage. At first, the motivation and support of top management was fundamental. When managerial actors also realized the potential of the LCA, they contributed to integrate first the results, then the logic behind it inside the organization. Finally, the results of the LCA allowed employees at any level of the organization to understand what *being a sustainable business* meant operationally for them, in their daily routine. By attributing numbers to environmental impacts, the LCA translated abstract concepts in practical implications. The main strength of Carlsberg Italia approach to the internalization of the life cycle logic was that any level of the company was involved in this process. Lower managerial actors as well as operational employees are responsible for daily output and eventually the continuity of a business. For this reason, they were involved in this long term learning process with training sessions and their engagement in drafting the sustainability report. Besides, their commitment to looking beyond the organizational boundaries is so entrenched that they collaborate, within the Carlsberg Circular Community, with business partners to come up with innovative, and therefore sustainable, solutions for part of the product they do not produce. Being sustainable is a key objective for Carlsberg Italia and a strategic element that allow the company to differentiate itself vis-à-vis competition.

2. Company Overview

Angelo Poretti founded Industrie Poretti in 1876 in Induno Olona, near Varese, in Valganna. This is an area with pure water and it is close to the caves, which allow to keep the product fresh. Production facilities and part of the raw materials arrived directly from Vienna. The first must was produced in 1877. The company gained great popularity for taking part at the Industrial Exposition held in Milan, in 1881. With the turning of the century, Angelo Poretti left the company to his younger nephews, who, a few years later, started the construction of the of the Art Nouveau building.

In the first decade of the twentieth century, the company reached the 50,000 hectoliters of beer produced per year. However, the great economic crisis of 1929 caused general consumption to plummet and consequently production. In 1936, the Basetti family, another historic family of Lombard entrepreneurs, bought the factory and managed to turn the fate of the company around. Poretti Industries managed to return, between 1946 and 1974, to be one of the cornerstones of beer production in Italy.

The *Spinamatic* of the *Splugen Brau* marked a major innovation in the tapping system of over-the-counter beer. In 1964 it won the *Compasso d'Oro*, an award instituted by La Rinascente for innovative industrial design. *Spinamatic* is in fact the antecedent of the modern *DraughtMaster Select 10* tapping system introduced on the market in 2014 by Carlsberg Italia. In 1982 the Carlsberg Group started the acquisition process of Poretti Industries, which will finish in 2002. Poretti Industries became

officially and entirely owned by the Carlsberg Group, which in turn is managed by the Carlsberg Foundation. This type of ownership ensures a constant focus on quality and innovation, whose roots are on basic and applied research conducted by Carlsberg Foundation.

In 2008 the factory in Induno Olona was completely renovated, while maintaining its original artistic style. In 2011, Carlsberg founded Carlsberg Ho.Re.Ca., a business unit completely dedicated to the distribution of the company products throughout Italy. By having five divisions, this allows the unit flexibility and a customer-centered approach.

It was Carlsberg Italia that, two years later, launched the *DraughtMaster* Modular 20, the revolutionary tapping system based on the use of recyclable PET beer kegs that do not require the use of CO₂.

Poretti Industries and now Carlsberg Italia have always been characterized by the commitment to master the art of producing beer to the highest degree of perfection, regardless of immediate profit. This philosophy is also at the foundation of the Carlsberg Group. The development of products and the innovation of its processes are key success factors for Carlsberg Italia. It conducts basic and applied research, also with the support of the Carlsberg Foundation, with the aim of delivering economic, environmental, and social benefits to its stakeholders, while being different from its competitors.

The most important values for Carlsberg Italia are a focus on innovation, in order to constantly improve the quality of its beers, and be a sustainable company. By satisfying these objectives, Carlsberg successfully delivers value to its customers and all of its stakeholders.

3. Environmental Focus

Since the introduction of the LCA methodology, Carlsberg Italia put sustainability at the core of its daily operations and its long term business strategy. Sustainability, as well as quality of its beer and innovation are Carlsberg Italia most important values and enduring objectives. As the CEO of the company noted during our interview:

"I originally thought of conducting an LCA for one of our most innovative technologies, the DraughtMaster. This technology was not born as an environmental innovation. Just to be clear: I do not believe in environmental innovations per se. I believe that innovation today if it is not sustainable is not innovation, which is a bit different. Thus, sustainability is a requirement that makes innovation a long-term process".

The approach of Carlsberg Italia to sustainability has experienced a learning curve. Sustainability reports in Carlsberg Italia have been produced since 2011 to address and inform all their stakeholders. From 2011 to 2014, Carlsberg Italia codified in its reports its concrete actions towards becoming a more sustainable company, i.e. *SustainaBEERity*. At that moment, the company concentrated its efforts on projects on Climate Change. The most notable example is its participation in the IRIS project, funded by the LIFE Unit of the European Commission. Whereas, from 2015, sustainability has become *implicit* in

their practices, processes, and structures. This change of mindset and strategy has been captured by the transition to *ResponsiBEERity*, Carlsberg Italia's current sustainability strategy.

To this aim, in Carlsberg Italia sustainability is embedded in all employees' duties. In fact, the company did not appoint a specific figure for sustainability, such as an environmental manager, rather it has a CSR team. This team is composed by fourteen actors from all company functions and was established in 2014 with the idea of improving the dialogue and the involvement of the entire company in sustainability activities. Its aim is dual:

- to define, organize and implement all activities related to the preparation of the annual Sustainability Report;
- increase attention and sensitivity to sustainability issues throughout the company and in all functions.

This holistic approach to sustainability goes beyond Carlsberg Italia's organizational boundaries, as in 2014 it created the *Carlsberg Circular Community*. With a life cycle thinking, Carlsberg Italia realized that to become truly sustainable it should collaborate with other key actors responsible of important steps along their products supply chain. For example, they recognize that packaging provides an important contribution to CO₂ emissions of their products and it is only through cooperation to achieve mutual goals that they can achieve their goals.

An example of this collaboration is the development of the Green Fiber bottle. Still in the prototyping phase, this is a wood fiber bottle, from responsibly managed sources, that should end up in the organic waste.

Finally, as part of the Carlsberg Group, Carlsberg Italia applies to its national context the Group's priorities and sustainability strategy, i.e. *Together Towards Zero*, which zero is referred to: the products carbon footprint, water waste, irresponsible drinking, accidents at work.

4. From a Life Cycle Assessment to a Life Cycle Logic

In the early 2010s, partly due to the financial crisis and to a saturated market, Carlsberg Italia was facing a downturn in sales. Carlsberg Group was then to decide whether to sell the Italian company. However, Carlsberg Italia CEO understood that the company had to differentiate among competitors to survive and be profitable.

At that moment, the *DraughtMaster* technology, originally developed in Copenhagen, was still at a lab phase and did not receive any recognition by the Carlsberg Group. Carlsberg Italia CEO envisioned the technology potential and realized that by developing it, Italy had a chance for its survival. However, intuitions were not enough, rather the company needed mathematical proofs that proved the new technology to be superior to aluminum kegs. With the support of academic consultancy, the company came in contact with the LCA methodology for assessing the *DraughtMaster* true potential. The LCA could provide the numbers needed to assess the technology. As the operations and *DraughtMaster* technology manager put it:

*"The technology was an opportunity to redeem the company and the **LCA** was for us, one of the tools, a sort of calculator that said, 'Well now let's count what it is'. Because our CEO is for **numbers**, he is **fact-based**, so let's count what it [the new technology] means. It is then that we realized that from the LCA, and from all this world came **enormous concepts of great value** for us and above all of value for the **consumer**. And from there it became our **usual tool in our toolbox**".*

As a result, two important innovations were permanently introduced with the support and commitment of the CEO: the *DraughtMaster* and the life cycle approach. The LCA supported the superiority of the new technology from a sustainable viewpoint. In the long term, the *DraughtMaster* would be better in terms of cost and reduced environmental impacts, compared to aluminum kegs. With this in mind, and with the fundamental support of academia, the company also realized the great potential of adopting a life cycle approach in its decision-making. In fact, all six of our interviewees at Carlsberg highlighted the main benefits of adopting a life cycle approach at organizational level: the company could have a broader picture of its processes; improve relationships with its stakeholders; save costs by eliminating inefficiencies; increase its reputation with consumers; and *be different*, as the objective of the company suggests. Some of the highlighted benefits are reported below in the words of the CEO, the operations and *DraughtMaster* technology manager, and the customer supply chain manager:

*"The thing that perhaps was also the **novelty** was **how sustainable this technology was** and this has **opened the door** [to Carlsberg Italia] **to the future**. [...] We realized at that moment that it was not just a matter of an advantage for our dealers, and for our consumers. [...] But there was also a value for the environment. And this **value** was **not a sensation, but they were numbers**. At that point it really made us **change direction**, because in this value chain, there are all our stakeholders".*

*"The LCA highlighted **opportunities that we did not spot before**. It made us realize we had a great potential to **differentiate** by investing in sustainable actions. On one side, consumers, especially **younger consumers**, value products of great quality and with lower environmental impacts. On the other side, we examine **processes at 360 degrees** and this allowed us to **reduce inefficiencies and eliminating bottlenecks**, and to **coordinate better** with different units in the organizations and external actors: transports, clients, etc. [...] How has this emerged? By analyzing every detail and every phase".*

*"The **numbers tell us the objectives** and show us the **effort we need to make to improve**. 'Giving numbers' also serves to **connect stakeholders** and above all consumers, to enable them to **evaluate ourselves**. Therefore, we resort to **certifications**".*

Not only did the LCA introduced the company to approaching every and each decision with a life cycle logic, but it also opened the doors to becoming a sustainable company, in terms of economic, environmental, and social benefits. This allowed the company to survive by differentiating itself in the market and gaining a competitive advantage. At first, as reported by managers, the commitment of top management was fundamental to introduce and support the implementation of the LCA methodology. When the LCA provided the first (positive) results, all the organization was then engaged and involved in formal training sessions.

*“Paradoxically it is easy to tell [what is] the LCA to my colleagues. The LCA is a method of calculation. ‘To calculate what?’ ‘**Sustainability**’. Sustainability is a topic, so it's a path, a mindset, it is not an easy thing to get. But if you want to go out now, take a walk in the corridor and find one of my technical colleagues. They talk easily now about these things, because they have **internalized** them some way. They know the LCA is a **calculation tool** and that the **company does not do any greenwashing**. So they will ask our suppliers **data**, they want [to know] the difference [among options]. So they want to know why a green gas is better than another throughout its lifecycle ... so this is how it's gone. **Now it's our daily job**, our bread and butter”.*

Ultimately, the LCA as a tool, and most importantly as a philosophy, as introduced Carlsberg Italia to new opportunities and stakeholders. In fact, since 2011, the company is involved in many projects relating to becoming a more socially-involved and environmentally-friendly company.

“The parameters of the LCA are without a doubt very complicated, but we do training sessions, and we talk about these things all the times. We look at the environmental aspect of our choices. [...] Now we have a great idea, a great dream on which we are trying to understand how to engage in the circular economy. But we need to understand, to calculate, if we improve our footprint, and this needs to be verified with a life cycle [assessment]”.