

## REDUCTION PLAN SOFT PODS CAPSULES

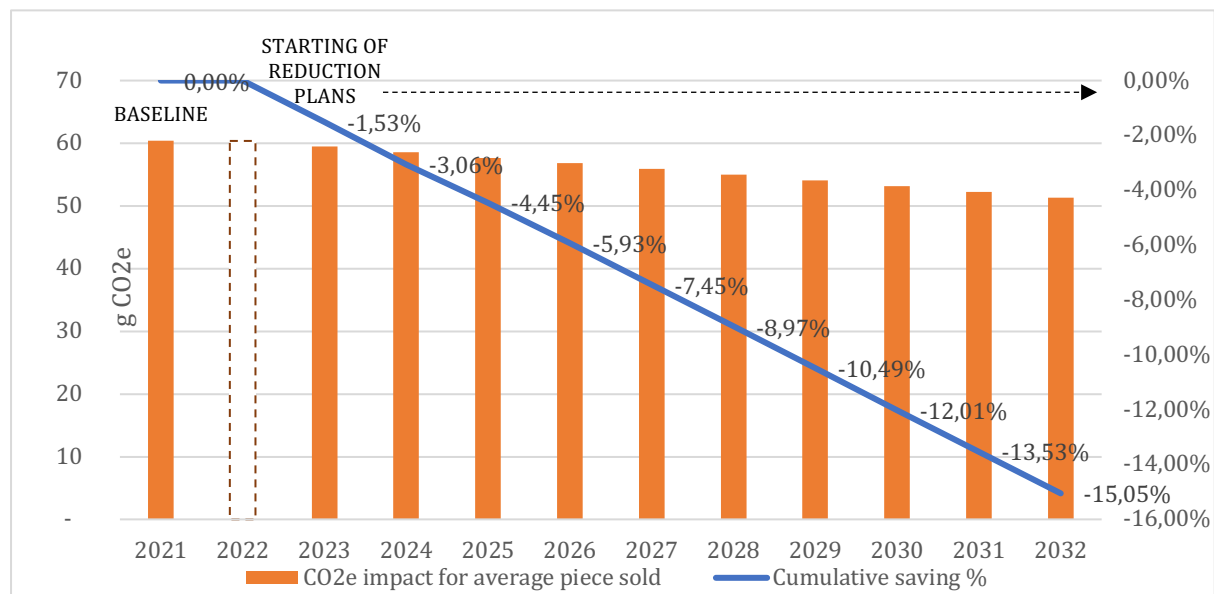
### Executive Summary

This document presents the reduction plan for the Soft Pods capsules with a duration of 10 years starting in 2023 and with planned year-by-year reductions from the 2021 baseline.

The actions that will be implemented concern three areas of work: Packaging materials optimizations, Green Coffee and Energy consumption optimization.

The calculations adopted are always in line with recognised methodologies following for example ISO 14067:2018, Ecoinvent 3.7, Method IPCC 2013 100a.

These considerations bring to the following 10-years reduction trajectory associated with the Soft Pods Capsules, which shows the absolute impact of the average piece sold of the family and the % savings achievable through the implementation of all planned measures.



### 1. Context

The challenges posed by the climate crisis to the coffee sector are many and urgent: this is why Lavazza is committed to the study of all-round solutions to meet the needs of reducing its environmental impact. In fact, starting from 2020, the Group has promoted a path that aims at achieving the complete Carbon Neutrality, called “Roadmap to Zero”. This path consists in a technical process, that first of all involves:

- 1. Quantification** of its carbon emissions: to report and disclose the way that the various stages of the supply and production chain contribute to environmental impact, Lavazza uses the Carbon Footprint indicator. The measurement of Lavazza’s greenhouse gas emissions (GHGs) at a corporate level complies with the ISO 14064:2018 standard and is certified through an independent assessment carried out by a third party each year. On the other hand, for the LCA Measurement of its products, Lavazza follows recognised methodologies such as ISO 14067:2018 [1]. This Impact measurement process is an ongoing and constantly evolving process for Lavazza, as it is subject to research and innovation activities. This is a key step in monitoring carbon emissions, choosing the most relevant KPIs for the Group where actions are required and reporting results, setting the next goals for Carbon reduction activities. In particular, the Lavazza Sustainability Department has the internal expertise necessary to carry out the LCA (Life Cycle Assessment) studies for all its carbon emissions — analysing its product’s environmental impact through all the steps of its life cycle, from raw materials to

packaging, production, transportation, distribution, use and discharge. The Group is also committed to applying the best techniques when monitoring energy and water consumption, waste production and disposal, through updates and standardisation aimed at international integration.

2. The second step for Carbon Neutrality consists in developing **reduction plans** for all the relevant greenhouse gas emissions categories calculated for the Group. For instance, as part of the reduction plan of the CO<sub>2</sub> generated by the Group's plants, today 100% of the electricity powering the Italian, French, UK and Canadian production plants comes from renewable sources, thanks to a plan launched in 2012; In recent years Lavazza defined the strategy of the "Roadmap of Sustainable Packaging", which has as main objectives the reduction of the environmental footprint of its products by making the entire packaging portfolio reusable, recyclable and compostable.

The pillars of the Packaging Roadmap are the following:

- Reduction of the amount of materials used, through eco-design and reduction of waste and waste;
- Use of resources with low environmental impact: materials recycled or obtained from renewable sources;
- Enhancement of the end of life of packaging, through reuse, recycling or composting.

Within the Packaging Roadmap, 71% of the packaging produced at the Group's three main plants — where 91% of the total production is concentrated (Turin and Gattinara in Italy and Lavérune in France) — is already recyclable. This means that 65% of the product portfolio packaging of the entire Group is already recyclable, with 95% peaks for flexible packaging. Major steps forward were made along the path toward carbon neutrality also with reference to Scope 3, involving several business functions in an increasingly integrated working group. The work that was implemented on green coffee, for example, included the setting of an internal Green Coffee Working Table that has the ultimate goal of supporting the Company's decision-making processes towards achieving carbon neutrality, developing a multifactorial computing approach to measure the footprint of green coffee and identifying the main areas of impact on which to focus the effort of tangible mitigation actions: in short, it aims to carry out a detailed assessment of the aspects contributing to the calculation of indirect emissions from coffee cultivation and, looking forward, to identify guidelines and actions able to reduce them, involving the main traders.

For Lavazza, the reduction activities represent the baseline to carry on the last step of Carbon Neutrality approach:

3. The last step of roadmap to zero process involves **compensating for residual and "non-reducible" emissions** up to the Carbon Neutrality of the entire organization. For this process reforestation, sustainable agriculture and renewable energy projects are selected in developing countries, for Lavazza purchases of carbon credits. These projects are also certified by internationally recognised standards, since they are able to generate carbon credits of a quality that meets the highest international standards: VCS, CCB and CDM.

The content of the following document meets the requirements of the French Climate and Resilience Law on August 22, 2021 ("Climate Law ") and will be made available and updated as required by law.

It is therefore necessary to promote a systemic approach to sustainability, which primarily requires the company to set targets to reduce its emissions by defining a concrete plan, made of solid and transparent activities aimed at the total neutralisation of emissions along the entire value chain.

In the context of this study the eco-design actions identified for Lavazza Soft Pods system are included.

## **2. Category of reduction**

Within the list of reduction activities it is pursuing, Lavazza identified mid and long-term actions with high technical feasibility to cover a ten-year plan period, ensuring a year-by-year reduction trajectory. These actions include those planned by strategic plans with a short-term coverage and those with a medium to long-term development horizon.

In order to achieve Carbon Neutrality, Lavazza Group is acting both on emissions under its direct control (energy consumption of its plants, for example) and on those occurring along the value chain, which is responsible for the majority of the group's impact (as indicated in the latest assessment of Greenhouse Gases Emissions at organizational level, reported through the Sustainability Report 2021, The Lavazza Roadmap to zero chapter [2] verified according to ISO 14064:2018 [3]).

In particular, the Lavazza Group has put in place a carbon measuring, reduction and offsetting process through its products, for which life cycle emissions are calculated according to ISO 14067 [Erreur ! Signet non défini.] for the entire volume of capsules sold in the year. For these product categories, emission reduction plans are in place for 3 main categories of activities, namely:

- Packaging materials optimizations
- Green Coffee
- Manufacturing/Operation

For Soft Pods system, the reduction plans developed are the following:

### **1) Switch to monomaterial PE for soft pack per pods Carte Noire**

Considering the Lavazza Packaging Road Map the pack should be designed to be recyclable. According to the COTREP guidelines in France the only flexible plastic-based recyclable at the moment is Polyethylene based packaging. For this reason, it has been chosen to switch the current soft pack for soft pods in MixPolyolefin in MonoPE by 2025.

In order to understand the machinability of the material the following technical activities has been performed:

- Supplier scouting to define the packaging structure (2 supplier has been selected);
- Industrial feasibility has been tested with a pre-industrial trial;
- Accelerated Shelf-life analysis has started and almost finished
- The second supplier will be tested at the beginning of 2023.

The new structure of the first supplier passed the pre-feasibility trials. The shelf-life analysis, almost finished, shows no difference with the actual structure in MixPO

## **2) Modifying green coffee blends**

As mentioned in the previous section, Lavazza is working on the impact of raw materials, through an ongoing collaboration with 1st tier supply chain. The objective is to learn about the environmental impacts of the coffee that Lavazza sources, developing specific partnerships to collect primary data related to cultivation and post-processing, and then to develop programmes and actions to reduce them. The actions implemented on green coffee will therefore seek to promote a more sustainable coffee that is the result of implementing good agricultural practices, that has not generated environmental impacts such as land use change (and thus promoted deforestation), and that optimises yields by carefully controlling agricultural inputs. Lavazza is therefore working on building a baseline of the environmental impacts of its entire supply chain, respecting the statistical rules of data sampling, so that in the short term the results of its surveys can be applied instead of secondary literature data. These in fact are currently the only means available to the company to assess the environmental performance of the supply and to compare the environmental impacts associated with the various origins.

## **3) Plant energy savings**

Reducing electricity and natural gas consumption through monitoring and reduction plans affects several of the group's plants and in particular the one in Laverune where the product is currently packaged, used for the Soft Pods system, takes place.

The target is to reach a higher level of efficiency in the energy usage for the production process, starting from monitoring the electrical and natural gas KPIs trend and proposing plant as well as management solution, with the aim of reducing the specific energy consumptions.

Year-on-Year Target:

- -1% on electricity consumption
- -0,5% on natural gas consumption

The main strands of intervention are as follows:

- finding out new fields of action by monitoring the energy KPIs trend of the different segment/products
- boosting the efficiency of the production process, reducing the electricity consumption thanks to an increasing in the production lines yield (e.g. installing new motors, vacuum pumps)
- optimal management of utilities (e.g. boilers, chillers, HVAC systems)
- optimal management of auxiliary services (e.g. compressors, evaporators, cooling towers)
- self-production/energy supply through the use of photovoltaic and heat recovery

### 3. Plan development

The baseline for Lavazza's reduction plans is verified emissions data for 2021 AMM capsule sales<sup>1</sup> reported through available dedicated reports [4], calculated in accordance with ISO 14067 [1] and verified by CSQA, a third party accredited by Accredia for greenhouse gas verification. Verification certificates [ ] issued in December 2021 are available on request.

As extensively detailed through the reports prepared according to ISO 14067:2018, the company always adopts the LCA approach from cradle to grave, using a rigorous modelling approach, developed through in-depth knowledge of business processes and environmental analysis.

The verified emission value for 2021 sales has been updated using more up-to-date calculation methods and processes, as required by the standard itself for monitoring of emissions. This process will be repeated annually.

The data sources for the calculation of the product's carbon footprint are summarized in the Table 1 Data for emission categories **Erreur ! Source du renvoi introuvable.** For the LCA study developed for System xxx, it was necessary to refer to two functional units which are (1) Espresso and (2) Soluble Beverages.

*Table 1 Data for emission categories*

	Data for categories	References to Functional Units
<b>Quantity sold</b>	Data 2021	Both
<b>Green coffee</b>	Specific blend for system, data 2021 purchases	Espresso coffee
<b>Transport green coffee</b>	Except logistics country producer from BDS 2020	Espresso coffee
<b>Ingredients</b>	Primary supplier data, 2021 data	Soluble Beverage
<b>Transport ingredients</b>		Soluble Beverage
<b>Packaging</b>	Main supplier data, 2021 (8+4)	Both
<b>Pack supply</b>		Both
<b>Lavazza Processing</b>	BDS 2020 data	Both
<b>Distribution</b>	BDS 2020	Both
<b>Use of energy and H2O</b>	BDS 2020 distribution mix and consumption from 2020+2021 machine sales	Both
<b>End of life coffee</b>	BDS 2020	Espresso Coffee

\*BDS = Sustainability Report, GHG Inventory data

<sup>1</sup> Recorded sales for the first 9 months and budgeted sales for the last 3 months of the year.

The baseline of the family under review is divided between different product categories (based on different formats) for which the sales volumes recorded in 2021 are summarized in [Table 2 – Volume of capsules sold by format and content (coffee and soluble)].

The approaches for modelling, the source and quality of the primary data used and others necessary to assess the impact of the entire product life cycle, starting from the cultivation phase of the green coffee used in the blend to the end of the product's life, through the product's use phase, are made explicit in the dedicated reports [5].

*Table 2 – Volume of capsules sold by format and content (coffee and soluble)*

Product type	SKU type	Proxy	Proxy logic	Product sold YTD SET 2021 + Bdg Ott-Dic 21 [kg]	Product sold YTD SET 2021 + Bdg Ott-Dic 21 [pz]
Pods 2x60	CASE 5 SP PODS CN CLASSIC N5 2X420 M	x 60	Format	951.120	135.874.342
Pods x32	CART.10 SP 32 PODS			68.613	9.801.928
Pods x36	CASE 10 SP 36 PODS			1.478.125	211.160.738
Pods x36	CASE 10 SP 36 PODS CN DECAFF.			232.951	33.278.733
	CASE 20 SP 36 PODS CN CLASSIC N5 OPE	CASE 10 SP 36 PODS	Most in the category	290.175	41.453.571
	CN 250G PODS CN DOUC INT 36 DOS BON PLAN	CASE 10 SP 36 PODS	Most in the category	34.035	4.862.143
	TRAY 6 SP 36 PODS CN CLASSIC N5 GIG FORM	CASE 10 SP 36 PODS	Most in the category	109.711	15.673.071
	CN BTQ 36 PODS OPE 4 REF 140 DS	CASE 10 SP 36 PODS	Most in the category	244.170	34.881.429
Pods x48	CASE 10 SP 48 PODS CN CLASSIC N5 NEW			548.766	78.395.143
Pods x60	CART.10 SP 60 PODS CN BIO			2.649.710	378.530.013
	CN CARTON PODS CLASSIC 3X60 3CA	CART.10 SP 60 PODS CN BIO	Most in the category	13.154	1.879.200
	DISPL 100 SP PODS CN BTQ 420M 3 REF 60	CART.10 SP 60 PODS CN BIO	Most in the category	1.278.689	182.669.857
Pods x18	CASE 10 SP 18 PODS CLASSICO 125 M			253.932	36.276.063

To build the reduction plan, the volume of capsules sold in the 10 years was assumed to be the same as the 2021 baseline, together with the same distribution among product subcategories.

No changes were made to either the modelling approach or the data sources used for the analysis (e.g. capsules are assumed to be disposed of in the same countries of sales as in 2021).

The baseline provides for a distribution of impacts among the analysed categories shown in Figure 1. The highest impacts occur in emission categories outside the company's control, in particular for the cultivation and transport of green coffee.

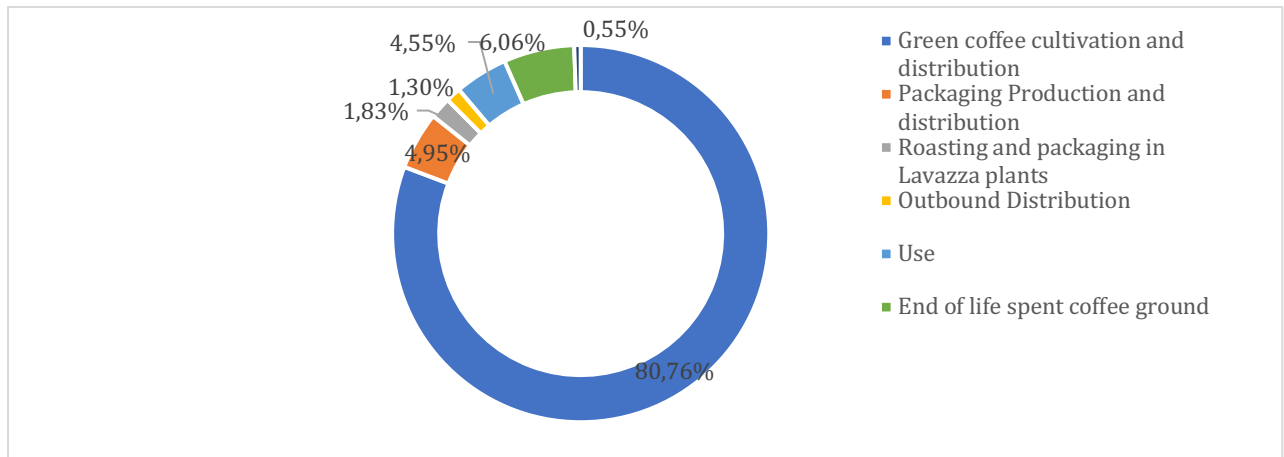


Figure 1 – Distribution % among the system's emission categories

The improvement measures with respect to the CO<sub>2</sub>e indicator, which can be traced back to the 3 main categories (Packaging materials optimisation/Green Coffee/Manufacturing-Operation) are evaluated both per format (e.g. change of material for a particular packaging component of a format) and for the entire family (e.g. interventions on the green coffee blend used for the entire product family).

The calculations adopted are always in line with recognised methodologies following for example ISO 14067:2018, Ecoinvent 3.7, Method IPCC 2013 100a.

The reduction plan presented has a duration of 10 years from 2023 and envisages year-by-year reductions from the 2021 baseline.

These considerations bring to the following 10-years reduction trajectory associated with the Soft Pods Capsules, which shows the absolute impact of the entire family and the % savings achievable through the implementation of all planned measures.

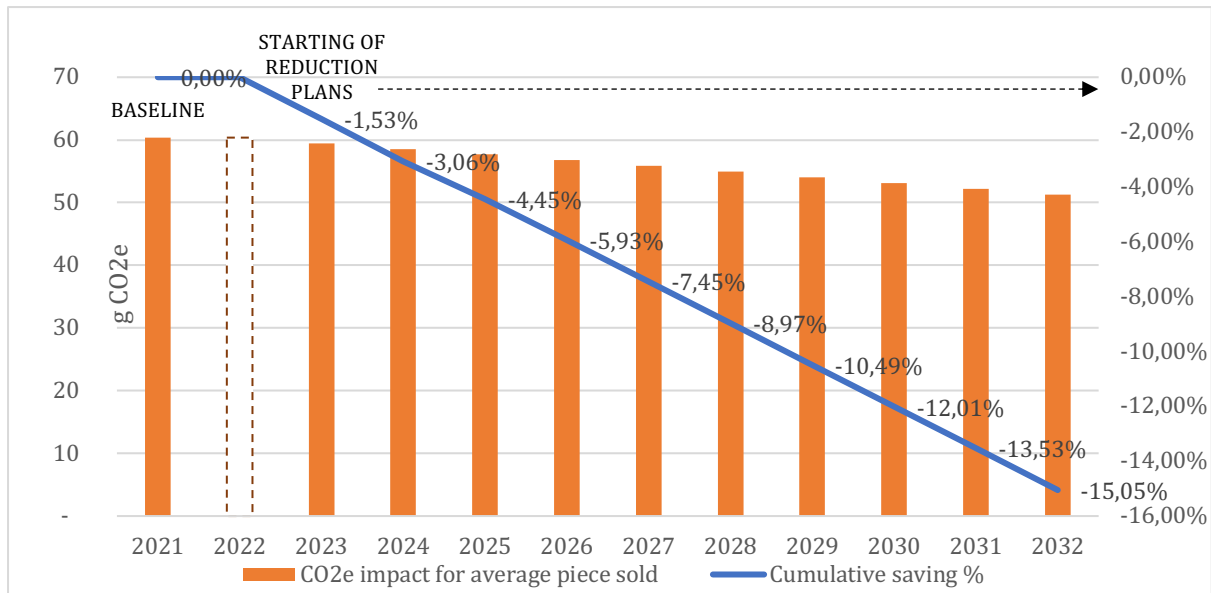


Figure 1 - 10Y Plan of CO2 Emissions Reduction for SOFT PODS

#### 4. Nature and description of the compensation projects

In 2022, Lavazza Group offset all emissions included in the LCA analysis of its carbon neutral products, including Soft Pods system. The nature of the compensation projects selected varies from reforestations, community protection and renewable energy implementation projects. All projects chosen are developed in territories linked to coffee cultivation, in order to be as coherent as possible with Lavazza business. The projects are also certified by internationally recognized standards (VCS, CCB, CCBA and CDM) to ensure the high quality and robustness of the projects.

In particular, Soft Pods are offsetted through [Envira Amazonia Tropical Forest Conservation](#), Brazil, by South Pole.

The Envira project in Brazil's Amazon basin protects 39,300 ha of tropical forest from logging and encroaching cattle ranches. This simultaneously preserves the areas rich biodiversity and mitigates the release of over 1,250,000 tCO2e on average each year. The project also fosters economic opportunities for local communities through sustainable farming and the sale of acai berries and medicinal plants, promotes environmental stewardship, and provides health services and educational courses.

Our climate partners take care of all carbon offsetting operations, ensuring compliance with best practices in offsetting from project selection to the withdrawal of credits on behalf of Lavazza. The cost of the investment usually stands below 10 €/carbon credit.



## 5. Conclusions

The documents will be updated yearly, and the update will also be used to check the compliance with the emission reduction plan, ensuring that the unitary emissions will not increase for two years. Plus, every 5 years this document will be updated taking into account the following 10 years.

From 2023 onwards, the detail of non-reduced emissions will be clearly defined by Lavazza and communicated through this report.

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[1] ISO (2018): Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification, ISO 14067:2018 ([www.iso.org](http://www.iso.org))

[2] Luigi Lavazza (2021), Lavazza Sustainability Report 2021, Available on:

<https://www.lavazzagroup.com/en/how-we-work/the-sustainability-report.html>

[3] CEN, ISO (2018): Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, CEN EN ISO 14064-1:2018.

[4] Luigi Lavazza (2021, December 10th) - Lavazza A Modo mio (AMM) capsule System carbon footprint (available on request)