SUSTAINABILITY POSITION PAPER

In collaboration with Nemho Sustainability Team

Arpa

CONTENTS

EXECUTIVE SUMMARY

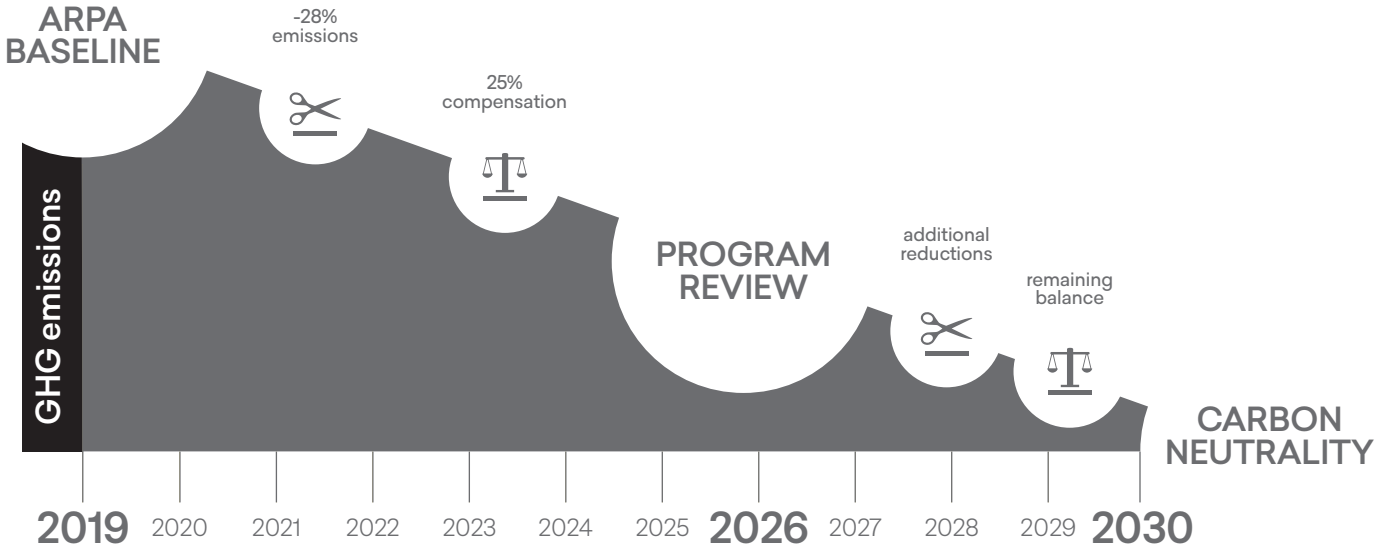
The path toward carbon neutrality

At Arpa Industriale we have been working on sustainability for more than 10 years. During this period we learnt a lot about our data, our strengths and challenges from a sustainability standpoint.

In the course of these years we implemented a series of improvement activities which, in some cases, did not bring the results we hoped for in terms of decreasing our footprint.

In the last challenging months, instead of pulling away from sustainability, we decided to push ourselves further and focus our efforts on one of the most pressing challenges of this day and age: CO_2 emissions. As we did in the past, every year we publish an annual Sustainability Position Paper where we detail our journey to reduce emissions in our facilities. We will also develop offset projects that help capture carbon emissions in the broader environment. Our path toward carbon neutrality includes a targeted overall reduction of 28% and a compensation of 25% of our emissions through offsetting. In 2021 we achieved an important milestone that is the carbon neutrality for FENIX® products.

(fenixforinteriors.com/it/fenixcarbonneutral).



A straightforward approach to sustainability

Reducing our carbon footprint is based on our core belief that it is the right thing to do. We are also convinced that reducing our overall environmental footprint is essential to the long-term success of our business and the environment around us. That is why sustainability is embedded in our business philosophy with the credo “do no harm, do good, do better”.

At the core of our sustainability strategy is the principle that we should start with ourselves when we seek to improve the world: “do no harm”. Our approach is straightforward: we measure our impact, select targets to reduce this impact and monitor and report on progress. To measure our impact, we use the Life Cycle Assessment (LCA) methodology. LCA captures the details of the entire environmental footprint of our products, from its raw material extraction up to leaving the gate of the factory.

LAMINATES MANUFACTURING PROCESS

CRADLE → GATE

The second element of our strategy is to look for opportunities that support the environment beyond the direct scope of our own manufacturing footprint: ‘do good’. This includes creating highly durable products that have a long lifespan that limits the need for replacement. Additionally, we also develop projects that help to absorb or reduce carbon emissions less directly linked to our factories and our product portfolio.

We believe that addressing sustainability challenges will allow our company to continue to grow and ‘do better’ in the future. Investing in sustainability should - in the end - ensure that these efforts continue beyond the horizon of current regulatory changes and ethical/moral considerations.

Facts on our footprint

We believe you cannot manage what you do not measure. At Arpa we quantify our impacts through the LCA, the most reliable tool available to measure a product or process' footprint. The LCA results are shown below for the three key environmental indicators: global warming, primary energy demand and water footprint.

The results are expressed for two years: 2019 which is the baseline year for our 5-year targets and 2021.

Impact category	Unit	2019 Impact*	2020 Impact
Global warming**	ton $CO_{2\,eq}$	84,166	70,338
Primary energy demand	GJ	3.94 million	3.42 million
Water footprint***	m^3	59.35 million	53.21 million

Arpa has plans to address all three environmental indicators, however, the urgency of global warming requires that the reduction of CO_2 emissions be our absolute priority for the years to come. Our primary focus will be on projects to cut the 23,6 thousand tons of CO_2 emissions generated in the production of our products by 2026.

Between 2019 to 2021, Arpa noted an impact reduction on global warming by 16%, despite an increase by 4% in production volumes. This reduction was mainly due to the switch to 100% renewable electricity as of 2020, to an increased production efficiency, and to the implementation of optimization initiatives to minimise the environmental impacts of materials used to produce our panels.

To achieve the 5-year targets, we will continue implementing impact reduction projects detailed in the next section.

***Impacts for 2019** were updated compared to the previous position paper including the contribution of the FENIX Factory, a new department of the plant in Bra that became operative in 2019 and for which data were not available at the time of the publication of the previous position paper.

** **Global warming** impact includes the CO_2 storage of the wood fibres present inside of our panels.

***The water footprint** indicator shall be used with care due to high uncertainties and limited experience as mentioned in the EN15804-A2 standard. Thereby, the water footprint impact indicator in 2019 have been adjusted compared to the previous position paper to reflect an accurate comparison between the years.

A clear action plan for the coming 5 years

Arpa's goal to reduce its carbon footprint starts with its target for a 28% reduction (23.6 thousand tons) of CO_2 emissions by 2026. Key drivers of our improvement are outlined in the table below along with the updated status.

CO_2 emission reduction activity	**Emission scope**	**CO_2 reduction potential**	**Status**
Energy and Material Efficiency optimize the use of thermal energy at the presses and impregnation lines; optimize material use	Scope 1,3	12 %	Ongoing
Sourcing of Green Power switching to 100% renewable electricity	Scope 2	8%	Target reached
Sourcing Renewable and More Sustainable Raw Materials including resins from bio-sources	Scope 3	8%	Ongoing
Target reduction total 28% (23,600 tons)			

We will continuously explore every opportunity to increase the efficiency of our processes. In addition, we will continue to transition to more sustainable bio-based and renewable sources, which already constitute up to 70% of our product inputs. Bio-based, renewable raw materials have in fact a lower environmental impact than traditional petroleum-based inputs. Forest and crops absorb CO_2 from the atmosphere during their growth and continue storing it once harvested.

Beyond carbon reduction, Arpa has already reached a 13% reduction in primary energy demand and a 9% reduction in water footprint, beyond the targets respectively set to 8% and 5%.

As stated above, we will develop projects to capture carbon outside our business; this will include buying offsets or co-investing in projects. Arpa's commitment toward carbon neutrality has started with the acquisition of 111.000 carbon offsets, including the ones required to outbalance all the carbon emissions associated with FENIX® products. An amount of 37,000 carbon credits have been retired in 2020 and 2021 (see Appendix 3 for project description).

We will be transparent about our progress

The goal of our sustainability approach is to provide transparency to our stakeholders about our sustainability efforts and updates each year going forward, so everyone can see progress against our commitments. We will update our targets and initiatives each year as we progress through this journey.

For those interested in further details of our sustainability program, our Arpa team is more than happy to answer questions - feel free to contact your local Arpa team member for more information.

INTRODUCTION

Since 1954, Arpa Industriale has been designing and producing panels with high-quality HPL technology for the most varied end uses: from architecture to interior design, from health care to naval shipbuilding, from transportation to hospitality, from retail to kitchens. In 2013 Arpa launched FENIX®, an innovative material for interiors developed by an international, multidisciplinary team thanks to proprietary technologies. Arpa's products are manufactured in the 150,000-square-metre plant in Bra, in the Piedmont area of Italy. More than 60 years of investment in research, advanced technology and personnel training have allowed the company to achieve a position of primary importance and a reputation for great reliability in international markets; an industry characterized by competent staff, varied and excellent offerings, production flexibility and fast service.

Arpa uses a strategic framework to steer its business towards durable long-term growth. This framework has four key elements: license to operate (LTO), market, cash & cost, and capabilities. The thinking behind these elements is to control non-business risk, grow the business, maximize the contribution of growth, and ensure that the right skills are on board for successful execution of all plans. Within these elements, the priority lies with our License To Operate, which includes topics such as:

1. Health and Safety of employees and the local community
2. Sustainability and the preservation of the environment
3. Product compliance to meet regulatory requirements
4. Transparent (financial) reporting and appropriate behavior by employees

Sustainability became key part of our LTO strategy in 2010 and a lot of effort has been put since then to improve our environmental performance through the implementation of a number of projects and activities.

A key element of our approach is being highly transparent about our current environmental footprint as well as our plans and targets for reducing our overall impact. Arpa has implemented a common sense, fact-based methodology to sustainability focused on a cradle-to-gate approach that is integrated into the way that we manage every part of our business.

OVERALL PHILOSOPHY

Arpa's sustainability policy is built upon a basic motivation to shift from "being less bad" for the environment to being "good" and having a positive impact on the world around us.

This approach has three stages:

Do no harm

Arpa will comply with safety, product and sustainability regulations and guidelines set by the countries in which it operates. Beyond that, we will seek opportunities to minimize the environmental impact in all of our operations and products.

Do good

Arpa will support its suppliers and customers in realizing their sustainability challenges. We will continue to look for opportunities and initiatives to support and promote longer-term sustainability beyond the direct scope of our current operations.

Do better

Arpa believes that investing in sustainability is beneficial to the overall environment and to the long-term health of our business. Many sustainability challenges constitute good business opportunities that support our customers while continuing to allow the company to thrive.

SUSTAINABILITY APPROACH

Enhancing sustainability requires a realistic vision, specific actions and integrated approach across the entire company. Arpa's sustainability path is defined by three key principles that shape our thinking and action plans.

Common Sense

Arpa takes a common sense approach to sustainability. This requires the acknowledgment that, by definition, a product requires resources and energy in its creation and, as a result, some level of environmental impact will occur. That said, we have adopted the relentless pursuit of maximizing our product functionality while minimizing its environmental impact. We believe that sustainability is a balancing act between product functionality and its impact. Our goal is to reduce the impacts without losing sight of the product functionality our customers require.

Fact-based approach

At Arpa, we believe you cannot manage what you do not measure. In order to address sustainability in a bigger way, we needed to quantify our current impact on the environment. To do this, we implemented the Life Cycle Assessment (LCA) methodology because it represents the most reliable and data-driven tool available to help companies, institutions and governments systematically incorporate sustainability into their decision making process. LCA is a method to evaluate the environmental burdens associated with the entire life cycle of a product, process, or activity. For our business, this assessment is done through the identification and quantification of the energy and materials used in the production of Arpa's products and the resulting wastes and emissions released into the environment.

By using a product life-cycle approach, we constantly get a clear understanding of the actual impact we have on the environment. We can then identify the drivers of sustainability and prioritize initiatives across the entire value chain – from the raw materials through the consumer's use of the product.

The environmental burden of a product or activity can be expressed through a number of indicators, such as global warming, acidification, eutrophication, ozone depletion, primary energy demand, photochemical oxidant formation, water footprint, abiotic depletion and many others.
For Arpa's LCA assessment, we show results tied to three key environmental factors: global warming (CO_2 Emissions), primary energy demand and water footprint.

From among these three environmental impacts, global warming represents Arpa's absolute priority. This impact poses a serious threat to our planet, one that demands urgent action on a global scale. Beginning with the Rio Earth Summit, then the Kyoto Protocol and the Paris Agreement, action to tackle this global challenge is speeding up.
With the Paris agreement, 191 countries (including Europe) committed to limit global warming to well below 2° Celsius compared to pre-industrial levels. This means aiming to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.

Part of how we run the business

All sustainability initiatives are part of Arpa's rolling business planning and review cycle. Our sustainability priorities stem from the results of our LCA studies and what we believe are realistic but challenging targets for achieving meaningful progress. The review cycle comprises annual target setting in the budgeting process and a monthly management review of progress measured in key performance indicators. Each year, new sustainability targets are set and formalized in a detailed sustainability target agreement. Progress is closely monitored and discussed by the top management team of Arpa on a quarterly basis during regularly-held sustainability meetings which are our tool for tracking activities and progresses, and brainstorming on new sustainability initiatives.

Moreover, we are incorporating sustainability training into our onboarding process and updates into our employee communications.

Arpa is committed to informing our entire team about our sustainability initiatives and including them in our efforts to protect the environment.

SUSTAINABILITY STRATEGY: CRADLE-TO-GATE APPROACH

At the heart of Arpa's sustainability vision and approach is reducing the impacts generated from the cradle-to-gate portion of our materials' life cycle.

Our guiding principle is two-fold: increasing efficiency or "do more with less" and replacing the most impactful energy and material inputs of our process.

LAMINATES MANUFACTURING PROCESS

CRADLE ——— GATE

Increasing efficiency

Efficiency upgrades represent the first lever for improving a product's environmental footprint by reducing the required energy and raw material inputs.

Energy. There are many opportunities to improve the energy efficiency of industrial equipment through the use of modern technology and intelligent system design. Replacing motors and pumps with new high-efficiency designs, storing and recycling heat within a closed-loop system, and optimizing the integrated manufacturing system are examples to reduce energy consumption.

Materials. A large share of industrial emissions is associated with the creation of materials used in our products. A key opportunity is to absolutely minimize material waste at each step in the process.
We are focusing on product and process designs that optimize the use of materials so that our finished product can provide outstanding performance while requiring less material input.

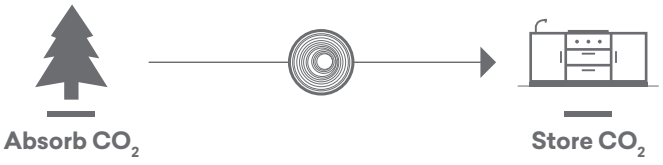
Additionally, we will keep working with the materials suppliers that contribute the most to our impact, to share our ambitions and goals and work with them to find mutually beneficial opportunities to improve our collective environmental footprint.

Replace most impactful inputs

There are also opportunities to shift to lower-carbon alternatives for the energy and raw material inputs we source into our process. This approach normally translates into switching from fossil-based to bio-based and renewable options.

Energy. The core element of this strategy is to actively pursue opportunities to replace traditional energy sources (electricity and natural gas) with renewable options for gas (e.g. biogas), and electricity (e.g. wind, solar). We have installed PV panels on the roofs of our plants and we cover the remaining energy need through electricity from renewable sources.

Materials. Bio-based, renewable raw materials have a lower environmental impact than traditional petroleum-based inputs. They, in fact, help to save fossil resources and can contribute to reducing greenhouse gas emissions. Forest and crops absorb CO_2 from the atmosphere during their growth and continue storing it once harvested. To get a bit technical, trees absorb through the photosynthesis CO_2 and solar energy in their wood creation and release oxygen in return. The CO_2 absorbed is kept in the wood products for their whole life-time.



Our panels are made of a combination of bio-based, renewable materials (wood fiber) and resins, with the bio-based share exceeding the fossil-based one – up to 70% of our products are bio-based. Moreover, we have developed Bloom, an innovative technology to increase the share of bio-based, renewable material in the core of our panels.

We are continuously looking for solutions to further increase the bio-based, renewable component of our panels. Between selecting bio-based alternatives and better-performing suppliers, sustainability is more and more becoming a critical parameter when choosing our partners.

BALANCING OUT RESIDUAL EMISSIONS

As mentioned above, Global Warming (CO_2 emissions) represents our absolute priority for the years to come. This means we will put extraordinary efforts to cut the CO_2 emissions generated by our products[1]. We will pursue this goal by applying the strategy outlined above to improve our efficiency (of both materials and energy) and replace the most impactful inputs.

Yet, it will not be possible to eliminate all emissions from manufacturing process of our physical product. Arpa compensates part of the residual CO_2 emissions with equivalent carbon dioxide savings elsewhere. This will be achieved either through purchase of fully-accredited carbon offsets, or, preferably, by developing our own carbon removal projects.

Carbon neutrality is defined by the state when the carbon emissions associated to an activity have been compensated by funding an equivalent amount of carbon savings elsewhere in the world. By buying offsets and developing carbon projects it is possible to fully balance out residual emissions and hence obtain a carbon neutral product.

Starting from 2021, all our FENIX® panels are carbon neutral (fenixforinteriors.com/it/fenixcarbonneutral).

[1]The emissions generated from cradle to plant gate

ARPA BASELINE LCA DATA: OUR LEARNINGS AND PROGRESS TO DATE

Over the past 10 years Arpa put a lot of effort in embracing a sustainable approach by measuring and improving its environmental impacts. Our journey towards sustainability started back in 2010 and since then every year a LCA study is carried out.

The undertaken LCA studies enabled us to:

1. Better understand our mass and energy flows/balances, which lead to the installation of additional measuring systems or the calibration of the existing ones
2. Identify the major contributors to our impact in order to set priorities
3. Put in place a number of improvement activities to reduce on-site energy consumption and waste generation.

Environmental impacts of the baseline year

In this section, the results of the LCA study for the assessed impact categories are specified. These values are expressed per standard unit of material (m^2) and our total impact in 2019.

Please note that the results are expressed for cradle-to-gate scope.

*__Impacts for 2019__ were updated compared to the previous position paper including the contribution of the FENIX Factory, a new department of the plant in Bra that became operative in 2019 and for which data were not available at the time of the publication of the previous position paper.

** __Global warming__ impact includes the CO_2 storage of the wood fibres present inside of our panels.

***__The water footprint__ indicator shall be used with care due to high uncertainties and limited experience as mentioned in the EN15804-A2 standard. Thereby, the water footprint impact indicator in 2019 have been adjusted compared to the previous position paper to reflect an accurate comparison between the years.

	Unit	2019 Impact*	Impact per m^2
Global warming**	kg CO_2 eq	**84,165,993**	**4.1**
Scope 1 Emissions		25,515,046	1.2
Scope 2 Emissions		8,360,898	0.4
Scope 3 Emissions		50,290,049	2.4
Primary Energy Demand	MJ	**3,935,065,383**	**190.2**
Fossil		1,498,019,593	72.4
Renewable		2,437,045,790	117.8
Water Footprint***	m^3	**59,346,390**	**2.9**

The unit of scale or reference to which the LCA results are referred relates to the given function of the product, called a functional unit. Based on the function of our products, the functional unit of our LCA studies is 1 m^2 of panel.
These numbers provide a baseline of the environmental impact of our products.

*Impacts for 2019 were updated compared to the previous position paper including the contribution of the FENIX Factory, a new department of the plant in Bra that became operative in 2019 and for which data were not available at the time of the publication of the previous position paper.

** **Global warming** impact includes the CO_2 storage of the wood fibres present inside of our panels.

***The water footprint indicator shall be used with care due to high uncertainties and limited experience as mentioned in the EN15804-A2 standard. Thereby, the water footprint impact indicator in 2019 have been adjusted compared to the previous position paper to reflect an accurate comparison between the years.

Progress in 2021

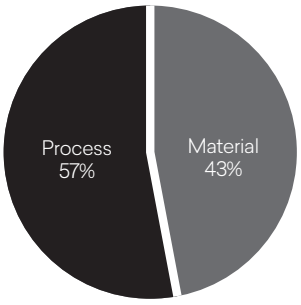
Impact category	Unit	Impact per m^2 2019	Impact per m^2 2021	△ '19-'21	Total impact 2019*	Total impact 2021	△ '19-'21
Global Warming**	**$kgCO_2eq$**	**4.1**	**3.0**	**-25%**	**84,165,993**	**70,338,305**	**-16%**
Scope 1		1.2	0.9	-24%	25,515,046	21,825,443	-14%
Scope 2		0.4	0	-100%	8,360,898	0	-100%
Scope 3		2.4	2.1	-14%	50,290,049	48,512,862	-4%
Primary Energy Demand	**MJ**	**190.2**	**147.4**	**-22%**	**3,935,065,383**	**3,421,365,350**	**-13%**
Renewable PED		72.4	58.1	-20%	1,498,019,593	1,348,830,600	-10%
Non Renewable PED		117.8	89.3	-24%	2,437,045,790	2,072,534,750	-15%
Water footprint***	**m^3**	**2.9**	**2.3**	**-20%**	**59,346,390**	**53,211,055**	**-10%**

Compared to the baseline year of 2019, the total environmental impact of Arpa showed a decrease in 2021: by 16% on global warming, by 13% on primary energy demand, and by 10% on water footprint. The main contributors to the impact changes in all categories were switching to 100% renewable electricity as of 2020, which reduced Scope 2 emissions to zero, increased energy efficiency, and use of less impacting input materials.
In the coming years we will continue focusing on the improvement activities mentioned in the previous sections.
The total and per-unit LCA results of 2020 can be found in Appendix 2.

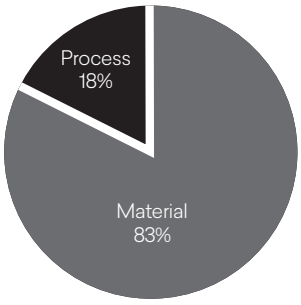
Contribution analysis for 2021

Each of the manufacturing steps described in the cradle to gate cycle contributes to a different extent to the total environmental impact of our laminates. Such impact originates from the manufacturing process itself (the energy and water consumed, waste produced and emissions generated) and from the production of the materials from which our panels are made.

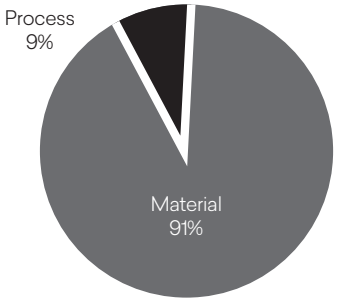
The chart below shows the contribution of the manufacturing process and raw materials for the three investigated environmental indicators: global warming (CO_2 emissions), primary energy demand and water footprint. As it can be seen in the Figure below, a significant portion of the impact of our panels is attributable to the raw materials we buy, which guides our approach to making improvements to both our own operations and to the inputs we source.



CLIMATE CHANGE



PRIMARY ENERGY DEMAND



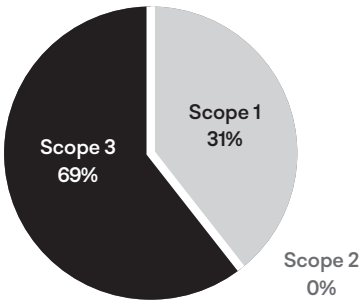
WATER FOOTPRINT

Additionally, global warming (CO_2 emissions) have been further broken-down in three categories consistently with the Greenhouse Gas Protocol:

Scope 1
All direct emissions from the manufacturing plant, including fuel combustion, boilers and afterburners.

Scope 2
Indirect emissions from electricity purchased and used by the plant.

Scope 3
All other indirect emissions from external sources, namely: raw materials extraction, production and transportation; fuel extraction; waste disposal.



GLOBAL WARMING

SUSTAINABILITY ROAD MAP TO 2030

Cradle-to-gate impact reduction

The entire goal of our sustainability approach is to define specific targets and actions to reduce our environmental impact, while continuing to supply the same products you have come to expect. Our reduction targets for 2026 (baseline 2019) are:

- Global warming (CO_2 emissions): 28% reduction
- Primary energy demand (fossil): 8% reduction
- Water footprint: 5% reduction

In order to achieve the global warming target, Arpa is undertaking a series of activities and projects detailed in the table below.

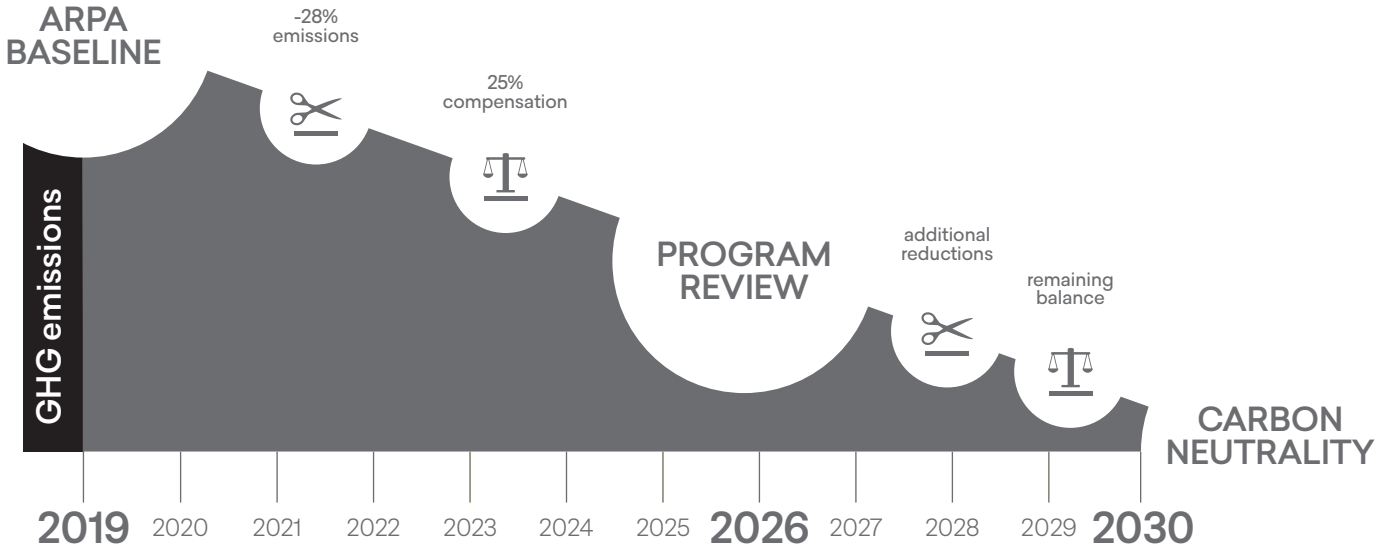
CO_2 emission reduction activity	**Emission scope**	**CO_2 reduction potential**	**Status**
Energy and Material Efficiency optimize the use of thermal energy at the presses and impregnation lines; optimize material use	Scope 1,3	12 %	Ongoing
Sourcing of Green Power switching to 100% renewable electricity	Scope 2	8%	Target reached
Sourcing Renewable and More Sustainable Raw Materials including resins from bio-sources	Scope 3	8%	Ongoing
Target reduction total 28% (23,600 tons)			

Balancing out emissions

Arpa also has set an ambitious goal of becoming carbon neutral by 2030*. Along with our internal improvement agenda outlined in the previous section, we also have started offsetting CO_2 emissions through the use of carbon credits. In addition to buying carbon offsets, we plan to start developing our own carbon sequestration projects. To this end, we have already initiated efforts to identify and select potential projects, discussed with the relevant stakeholders, and are building a plan for execution.

The picture below highlights our path towards carbon neutrality. It reflects the combined impact of our internal improvement measures and carbon offset compensation to help balance our emissions.

We recognize carbon neutrality is a long journey and there will be significant learnings along the way. As we progress through this process, we will leverage our experiences to update our approach, targets, and timelines. However, we believe it is vitally important to get started on this journey now, start the hard work of creating a more sustainable business, and becoming a leading steward of a better environment.



Improving our LCA model

Another key component of our sustainability effort is reliable and transparent data embedded in our LCA model. The accuracy of an LCA model is entirely dependent on the data available; ensuring this data quality is at the forefront of our priorities. During the next five years, we will continue to put effort toward increasing the breadth and accuracy of data collected in our plants. In LCA, there is a clear distinction between data collected on site (primary data) and data sourced from third parties (secondary data), with the former preferred over the latter. Given the significant role that raw material play in our products' LCA, we have collected primary data from some of our paper suppliers and we continue to refine our data and collect inputs directly from our paper and chemical suppliers to further improve the specificity and accuracy of data. Combined, the end goal is to develop and maintain a highly accurate and actionable LCA model for our products.

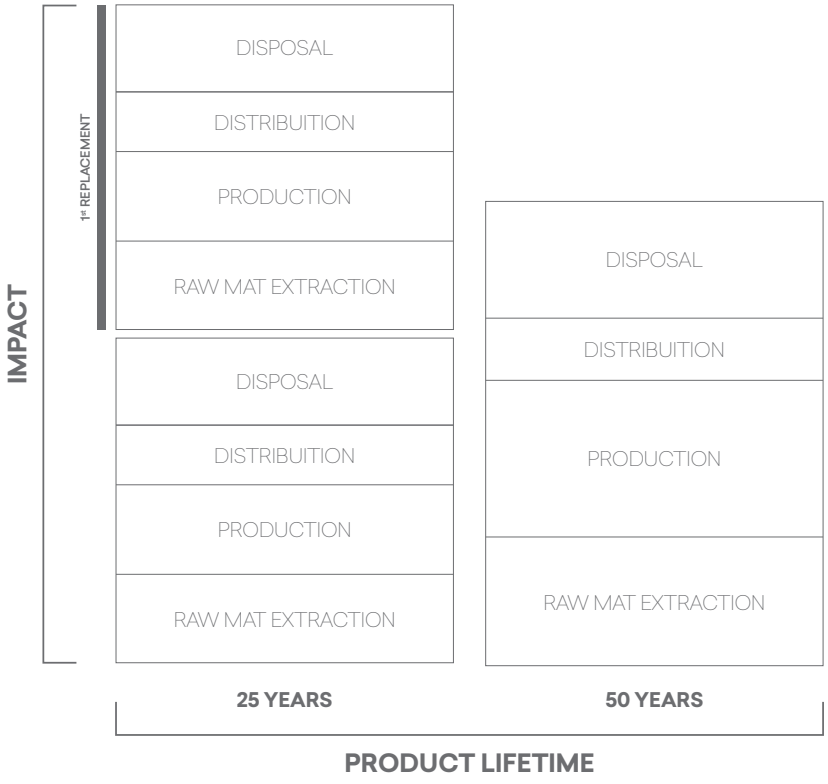
*The scope is cradle-to-gate.

DURABILITY,
A SUSTAINABILITY BOOST

The longer the product lasts, the longer the period of time to spread the environmental impact associated with the production of those raw materials and the environmental costs that incurred in the product's manufacturing, such as energy, waste, and emissions. Furthermore, by implying fewer replacements, long-lasting products entail less use of resources, lower emissions of pollutants than short life-span goods. In other words, durability represents a very effective strategy to reduce carbon emissions.

Long-lived products also imply the generation of smaller amount of waste, which is why the extension of the life time of products represents the primary strategy towards waste reduction set by the European Commission.

All of our products and their exceptional quality are a result of this vision, as they are, by definition, very durable, long lasting materials.



WHAT DO GLOBAL WARMING, PRIMARY ENERGY DEMAND AND WATER FOOTPRINT MEAN?

Global warming
This indicator expresses how much heat greenhouse gases trap in the atmosphere. Greenhouse gases are a group of compounds that are able to absorb the infrared radiation released by the Earth surface heated up by the sun. The more greenhouse gases in the atmosphere, the more heat stays on Earth. The main greenhouse gases are carbon dioxide (which is also the most abundant greenhouse gas), methane, nitrous oxide and fluorinate gases. The global warming indicator is calculated in terms of carbon dioxide equivalents.

Primary energy demand
Primary energy is energy found in nature that has not been subjected to any conversion or transformation process (such as primary energy content in crude oil, natural gas, and biomass). Energy that is already converted will require primary energy to provide this "delivered energy" (e.g. steam, electricity or other thermal energy derived from any technical process). Primary energy demand indicates the amount of energy that a system under assessment has extracted from the natural environment.

Water footprint
In this paper the water scarcity footprint has been evaluated. This indicator assesses the amount of water consumed weighted by a scarcity indicator, hence accounting for differences in potential environmental impact of water use based on given regional differences in water scarcity.

Factories included in the analysis
As of 2021, Arpa extended its control over an HPL plant located in Valencia. This factory manufactures Formica®-branded panels.

The results and targets reported in this paper refer both to the Arpa and Formica® plants.

APPENDIX 1
WHY DO WE USE CRADLE-TO-GATE SCOPE?

We use the scope cradle-to-gate for our on-site LCAs, because we focus on the stages that are under our control and that we can influence. We can improve our processes to make them more efficient and we can select less impactful raw materials. Moreover, for the lifecycle stages that are after our factory gate, we currently don't have enough data which requires us to make additional assumptions in terms of the disposal of our panels. Lastly, we are currently waiting on upcoming regulations and a general consensus on the topic of carbon storage benefits of long-lasting products at the end of the life time.

For the Environmental Product Declarations (EPDs) instead, we use cradle-to-grave scope as required by the standards.

APPENDIX 2
IMPACT RESULTS FOR 2020

Impact category	Unit	Impact per unit 2020	Total Impact 2020
Global warming*	kg CO_2 eq	**3.39**	**57,616,050**
Scope 1		1.03	17,439,825
Scope 2		0	0
Scope 3		2.36	40,176,225
Primary Energy Demand	MJ	**173.27**	**2,946,391,890**
Renewable PED		71.35	1,213,376,790
Non Renewable PED		101.91	1,733,015,100
Water footprint**	m^3	**2.80**	**47,698,323**

* **Global warming** impact includes the CO_2 storage of the wood fibres present inside of our panels.

****The water footprint** indicator shall be used with care due to high uncertainties and limited experience as mentioned in the EN15804-A2 standard. Thereby, the water footprint impact indicator in 2019 have been adjusted compared to the previous position paper to reflect an accurate comparison between the years.

APPENDIX 3
CARBON OFFSET PROJECT DESCRIPTION

In 2020 and 2021, to offset the 26,600 tons of CO_2 emitted from operations, we chose to compensate our emissions through landfill gas capture projects.

Overview of the projects

Location	Type	Carbon standard	Volume	Third party verified
Italy	Landfill gas	Green planet	37000 tons	Yes

The project involves the development, and construction of two waste-to-energy facilities in two landfill sites in northern Italy. The project objective is to capture methane gas that is released from the landfill and generate electricity through gas engines coupled with generators. If this project would not be in place, the gas escaping from landfills would be released unhindered into the atmosphere, accelerating global warming.

Arpa Industriale S.p.A.
Via Piumati, 91
12042 Bra (CN) – Italy
Tel. +39 0172 436111
arpa@arpaindustriale.com
export@arpaindustriale.com
arpaindustriale.com

12.2022

Arpa

follow us