

# GROUP POSITION PAPER 2024

A FOCUS ON ENVIRONMENTAL SUSTAINABILITY

Making real impact for less impact

# BROADVIEW MATERIALS

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# BROADVIEW MATERIALS

## 1 | EXECUTIVE SUMMARY

Broadview Materials has a leading position in the global market for surface materials. Continuous investment in developing innovative and more sustainable products is a key part of the business and growth strategy for each of its companies: Arpa Industriale SpA, Direct Online Services Ltd, Formica Group, Hartson-Kennedy Inc., Homapal GmbH, Trespa International B.V. and Westag AG.

Our approach to sustainability is fact based and data driven. We measure our impact and select targets to reduce this impact based on clearly defined projects. Then, we monitor and report on progress on a yearly basis through our position papers.

To measure our impact, we use the Life Cycle Assessment (LCA) methodology that evaluates the environmental burdens associated with the entire life cycle of a product. Amongst the numerous environmental indicators that LCA evaluates, we prioritise CO<sub>2</sub> emissions, as they receive the most public and regulatory attention.

We have adopted a cradle-to-gate approach for quantifying our footprint, by taking into consideration the life cycle stages from the extraction of raw materials to the manufacturing of our products. However, since we recognise the importance of the end of life of our products, as of this year, we have decided to report our cradle-to-grave footprint, while our primary focus remains on cradle-to-gate.

From 2019 to 2023, our cradle-to-gate carbon emissions passed from 420ktCO<sub>2</sub> eq. to 292ktCO<sub>2</sub> eq.

2019 vs 2023  
cradle-to-gate emissions



**-30%**

In 2023, the cradle-to-gate carbon footprint of the Group was 292ktCO<sub>2</sub> eq. Compared to 2022, the cradle-to-gate impact reduced by 17ktCO<sub>2</sub> eq.

2022 vs 2023  
cradle-to-gate emissions



**-6%**

In 2024, we anticipate a reduction in our cradle-to-gate carbon footprint to ~250ktCO<sub>2</sub> eq.

2023 vs. 2024 estimated  
cradle-to-gate emissions



**-15%**

So far, we have identified a footprint reduction opportunity of 186ktCO<sub>2</sub> eq., with further possibilities continuously being explored. Of these 186ktCO<sub>2</sub> eq., 20ktCO<sub>2</sub> eq. have been achieved, whilst 35-40ktCO<sub>2</sub> eq. are in progress. The remaining 126ktCO<sub>2</sub> eq. are planned for future implementation.

This document presents, for the first time, our sustainability philosophy, approach, and impact results at a Group level. By consolidating this information, we aim to emphasise the collective efforts of the entire organisation, showcasing how we work together as a unified team toward our shared goals.

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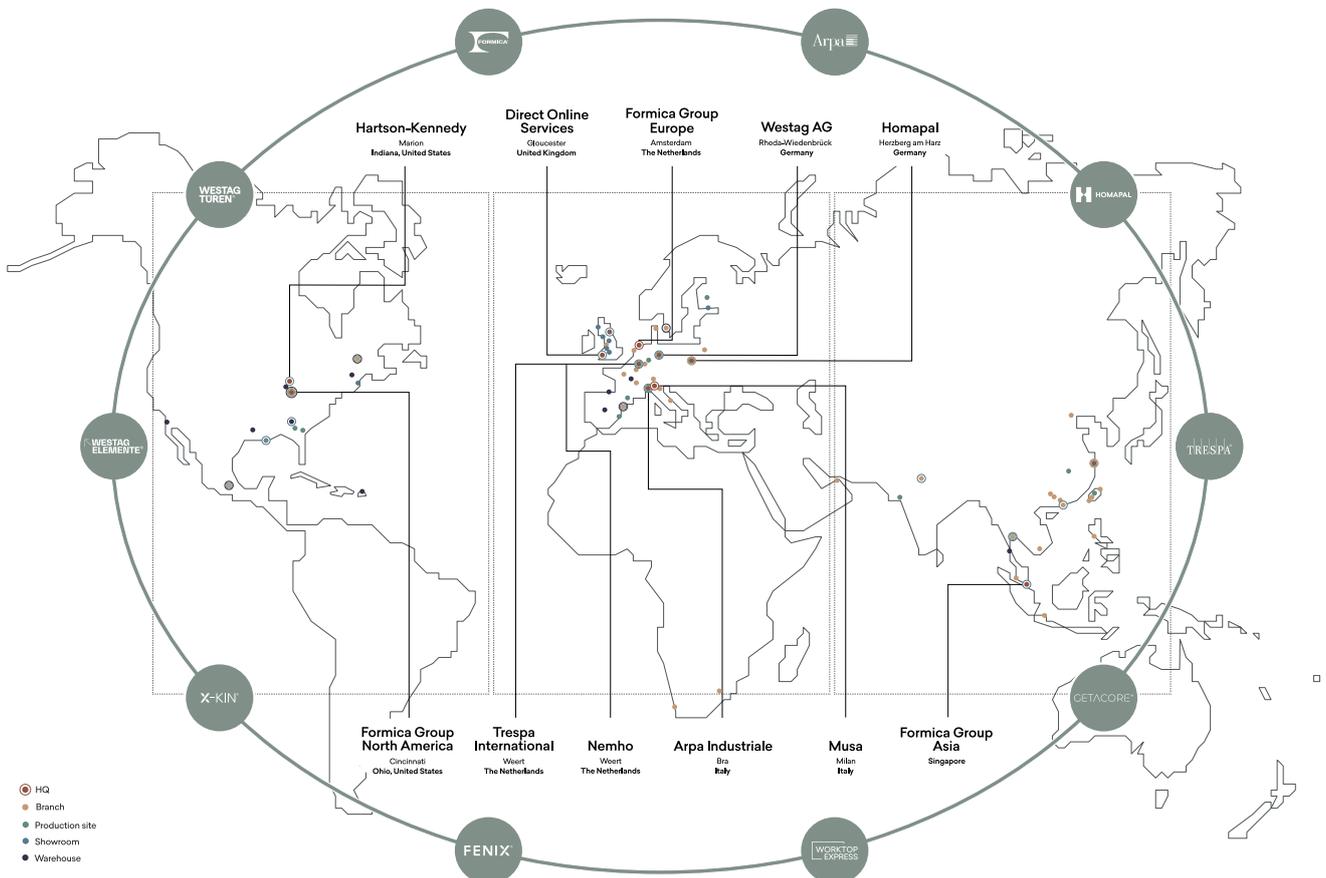
## 2 | INTRODUCTION

Broadview is a holding company that pursues long-term growth and value creation through active support of its operating companies and efficient capital allocation.

With combined sales of €1.2 billion, Broadview Materials has a leading position in the global market for surface materials. Continuous investment in developing innovative and more sustainable products is a key part of the business and growth strategy for each of its companies: Arpa Industriale SpA, Direct Online Services Ltd, Formica Group, Hartson-Kennedy Inc., Homapal GmbH, Trespa International B.V. and Westag AG.

These companies fabricate and sell composite panels and related products with superior esthetical and functional properties, which include FENIX<sup>®</sup>, an innovative material for interior design. Arpa, Homapal and Formica Group produce composite panels for interior applications such as kitchens and other residential furniture, as well as interiors for offices, healthcare, retail and hospitality. Other companies include Trespa that focuses on façade cladding and laboratory furniture in addition to Westag that produces interior doors, kitchen worktops, solid surface material and coated plywood panels. The material technology cluster also comprises Direct Online Services, an e-commerce-led, multichannel retailer of kitchen worktops.

Together, all the above companies have a global presence, operate 15 factories across Europe, North America and Asia and are supported by Group centres of excellence for innovation and technology (Nemho) and marketing, design and communication (Musa).



## 3 | OUR PHILOSOPHY

The most popular definition of sustainable development appeared in 1987 as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. Several alternative definitions of sustainability have been proposed ever since, many of which are based on the ‘three-pillar’ or ‘triple bottom line’ concept. The latter describes sustainability as three overlapping ellipses representing economic and social development and environmental protection.

The three pillars of sustainability are interdependent, and none can exist without the others.

Well aware of the equal importance of these pillars and their interdependency, this paper focuses on the environmental aspects of sustainability.

We believe sustainability improvements start with ourselves and have formulated it into three defining principles; *do no harm, do good and do better*.

Our approach to *do no harm* is as straightforward as it is fact based and data driven: we measure our impact and select targets to reduce this impact based on clearly defined and evaluated projects. Subsequently, we monitor and report on progress on a yearly basis through position papers.

*Do good* means looking for opportunities to support the environment beyond the direct scope of our footprint. This includes supporting our clients to meet their environmental challenges, for instance by providing products that warrant a long lifespan. Beyond that, some companies even guarantee that their products will be re-used in new applications.

Finally, many sustainability challenges constitute good business opportunities that will allow the companies to continue to grow and *do better*. This underlines our belief that investing in sustainability should—in the end—also be beneficial for companies to ensure that these efforts continue beyond the horizon of regulatory developments and personal considerations.

## 4 | OUR APPROACH

Our sustainability approach consists of four steps: we measure, we act, we monitor, we share.

### We measure

To measure our impact, we use the Life Cycle Assessment (LCA) methodology.

The LCA methodology represents a reliable and fact-based tool to help companies, institutions, and governments to systematically incorporate sustainability into their decision-making process, guiding their strategy towards a more sustainable future. LCA is defined as a process to evaluate the environmental burdens associated with the entire life cycle of a product, process, or activity by identifying and quantifying the energy and materials used and the waste and emissions released in the environment.

Due to its complexity and time-intensive nature, the LCA is carried out by our dedicated internal sustainability team of 12 experts, ensuring accuracy and consistency across all plants.

Given the strategic role of LCA, we deem pivotal having our LCA models and the processes we follow to get to those models and results verified by a third party. The reason for this lies both in the need of having another 'set of eyes' checking the soundness of what we do and to guarantee the highest degree of transparency and reliability of our sustainability claims to our customers and, in general, all our stakeholders. To this end, all LCAs related to our material business are certified.

In 2022, we obtained the EPD process certification for all our laminate manufacturing plants.

This certification covers every aspect of the LCA process—including data collection, quality checks, modeling, and result analysis—which is regularly audited. Due to the complexity of this certification, only a few companies worldwide have achieved it. With this certification in place, we can publish our own Environmental Product Declarations (EPDs), with a random selection of them undergoing audits. Since 2022, we have published 48 EPDs.

In addition to our laminate plants, we also have facilities that primarily manufacture doors and worktops. For these, we have adopted a different approach to third-party verification. Rather than pursuing EPD certification, our LCAs undergo a third-party critical review to ensure they comply with the relevant LCA standards.

### ***Environmental Indicators***

The LCA evaluates multiple environmental indicators, such as global warming (CO<sub>2</sub> emissions), acidification, eutrophication, ozone depletion, primary energy demand, photochemical oxidant formation, water footprint, abiotic depletion, and many others. However, managing numerous key performance indicators (KPIs) is not a practical task for any organisation wanting to make real progress.

We prioritise CO<sub>2</sub> emissions, as they receive the most public and regulatory attention—particularly at the European level, with carbon neutrality targets by 2050, and globally, through the Paris Agreement.

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## CARBON FOOTPRINT

Carbon footprint is the total amount of greenhouse gases emitted in the atmosphere by a product. Greenhouse gases are a group of compounds that absorb the heat 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 carbon footprint indicator is calculated in terms of carbon dioxide equivalents.

### ***Scope of analysis***

Our manufacturing companies, which usually don't produce end consumer products, have less influence over the use-phase and disposal. Therefore, we have adopted a cradle-to-gate approach for quantifying our footprint, by taking into consideration life cycle stages from the extraction of raw materials to the manufacturing of laminates (or other products in the case of our factory in Rheda-Wiedenbrück, Germany). Assessing the gate-to-grave footprint involves debatable use and disposal assumptions. Furthermore, there is currently no agreed guideline for the LCA methodology regarding benefits of long-lived products, like ours. These benefits stem from the long-term storage of biogenic carbon in the wood and paper components of our products, which makes up 50% to 90% of their content. As trees grow, they absorb and store carbon dioxide, which remains sequestered in our products until the end of their life cycle—ideally after reuse—when it is released back into the atmosphere. By storing biogenic carbon and thereby extending its natural cycle, we should reasonably expect a reduced environmental footprint, for example, through a discounted disposal burden depending on the product longevity.

Though the European Union commission recognised the relevance of extending the bio-based carbon cycle through long-lived products in an official communication to the parliament in 2021, no concrete progress has been made on the topic.

Despite the need for assumptions and current lack of modelling rules to include the benefits of durability into footprint calculations, we recognise the importance to assess the whole life cycle of our products. The impact of final disposal can significantly influence the overall sustainability performance of our panels. Therefore, as of this year, we have decided to quantify our footprint from cradle-to-grave, while our primary focus remains on cradle-to-gate. At the same time, in the absence of clear rules for incorporating biogenic stored carbon benefits in cradle-to-grave impact calculations, we separately report the biogenic carbon uptake of our products to clearly highlight the biogenic carbon they store.

### **We act**

The LCAs act as a foundational step in our sustainability strategy, allowing us to establish environmental targets for all companies. We primarily focus on cradle-to-gate emissions as those are the ones we can most effectively influence. However, we also work to reduce the impact after the gate through specific projects, such as Trespa Second Life. Our strategy to reduce the footprint consists of two main pillars: improving the efficiency of energy and material consumption and replacing the most impactful inputs.

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## ***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 optimising the integrated manufacturing system are examples to reduce energy consumption.

### **NEW BUFFER TANKS IN ST. JEAN (CANADA)**

One of the energy saving measures implemented at St. Jean sur Richelieu plant was the installation of heat recovery tanks. The tanks act as a buffer by capturing hot water from the press during its cooling phase and make use of it during the next heating phase. This helped us to reduce the boiler gas consumption by ~31,000GJ/year and an equivalent of 1.5ktCO<sub>2</sub> eq./year.

## ***Materials***

A large share of industrial emissions is associated with the extraction and manufacturing of materials used in our products. A key opportunity is to minimise material waste at each step in the process. Another important opportunity is optimising product and process designs to enhance performance while reducing material input.

### **WASTE REDUCTION IN NORTH SHIELDS (UNITED KINGDOM)**

In 2024, scrap was reduced from 6% to 2% in our plant in North Shields. This achievement was the result of a challenging journey. The team began by learning how to measure scrap accurately. With the data in hand, they identified the areas with the highest waste levels. This insight was crucial in determining where to focus their initial efforts for maximum impact. They then strategically targeted waste reduction, addressing one machine at a time.

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## Replacing the 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 (e.g. natural gas) with renewable options for heat (e.g. wood pellets; waste), and electricity (e.g. wind, solar).

#### STEAM FROM WASTE IN JIUJIANG (CHINA)

In 2022 the Chinese plant of JiuJiang replaced 70% of its natural gas consumption with steam generated from waste incineration at a nearby facility. To enable this, pipelines were installed to transport the steam from the incinerator to the factory. Since then, the majority of the steam used in operations has been sourced from this recovered waste heat, which would have otherwise been lost.

### *Materials*

Our approach primarily focuses on replacing fossil materials with bio-based, renewable alternatives, as these materials offer a natural way to store carbon and reduce environmental impact. Forest and crops absorb CO<sub>2</sub> from the atmosphere during their growth and continue storing it once harvested. The CO<sub>2</sub> absorbed is kept in the wood products for their whole lifetime, contributing to reduce the carbon dioxide in the atmosphere. Our panels are made of a combination of bio-based, renewable materials (wood fibre) and resins, with the bio-based share exceeding the fossil-based one. We are continuously looking for solutions to further increase the bio-based, renewable component of our panels.

Beyond innovation, we also recognise the importance of working with the right partners. Whether selecting bio-based alternatives or choosing better-performing suppliers, sustainability is increasingly becoming a critical factor in our decision-making process.

#### ARPA® BLOOM, FENIX NTM® BLOOM AND TRESPA® TOPLAB® PLUS ALIGN

Nemho, our centre for innovation and technology, has developed an innovative technology to increase the bio-based, renewable material content in the core of our panels. In our Bloom and Align products, 50% of phenol has been replaced with lignin, a natural polymer derived from paper manufacturing. Consequently, these products present an increased bio-based content compared to their standard alternatives. For instance, TopLab<sup>PLUS ALIGN</sup> has a minimum bio-based content of 83% compared to 65% of its standard alternative. All these products have been third-party certified for their bio-based content.

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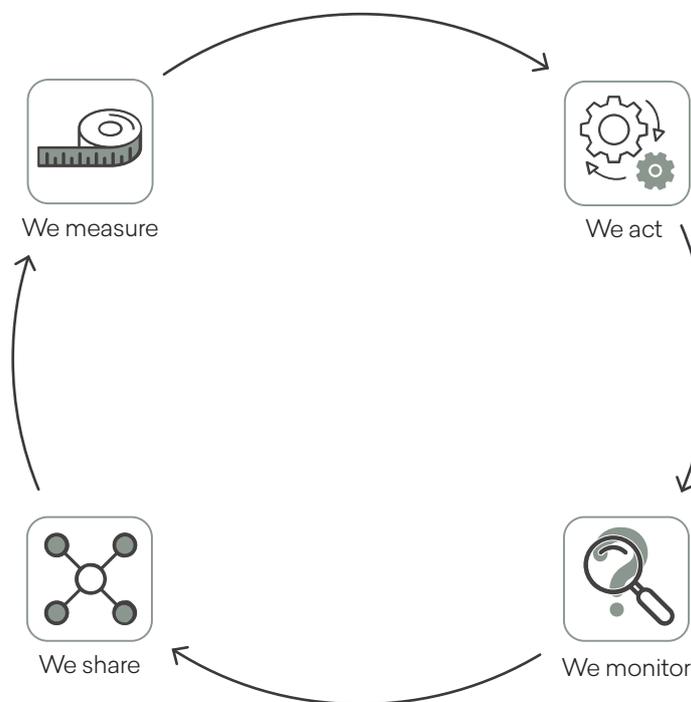
## We monitor

Most sustainability improvement projects are inherently commercial or operational, and they simultaneously deliver sustainability benefits. As a result, these projects are deeply integrated into our business planning processes. They are included in our financial models and undergo monthly reviews to monitor their status and ensure progress is being made.

To validate the outcomes of these improvement projects, we conduct an annual review of the LCA results. The progress achieved over the year, along with the Group's operational agenda concerning sustainability, forms the essential foundation upon which the budget for the following year is built.

## We share

We are dedicated to transparency in our sustainability efforts and progress, publishing our LCA results annually. This year, for the first time, we have consolidated our position paper into a single document for the entire Broadview Materials group, the individual papers of each company.



## 5 | CRADLE-TO-GATE DATA

Our journey to reduce our cradle-to-gate carbon footprint began back in 2010, and we have consistently measured and monitored our CO<sub>2</sub> reduction progress over the years. In 2021, we established 2019 as our baseline (2020 not being representative due to the pandemic) and have continued tracking our emissions relative to that year.

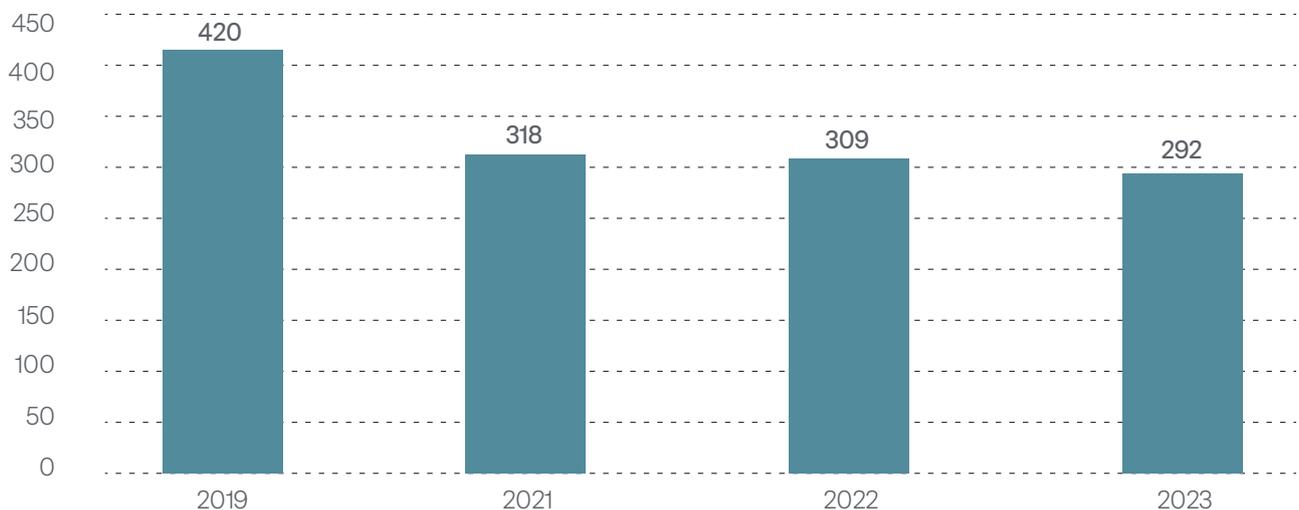
The following sections outline our progress from 2019 to 2023, along with an analysis of the key contributors. This is followed by a comparison of the 2023 results with those of 2022. Additionally, the impact estimates for 2024, along with projections for 2025 and beyond, are provided.

### Progress from 2019 to 2023

From 2019 to 2023, our cradle-to-gate carbon emissions passed from 420ktCO<sub>2</sub> eq. to 292ktCO<sub>2</sub> eq., reducing by approximately 30%, or 128ktCO<sub>2</sub> eq. This reduction is the combined effect of the improvements achieved by the different companies in the Group, lower production volumes and changes due to the refinement of the LCA models (updates in the databases).

The graph below shows the evolution of our cradle-to-gate footprint over the years (ktCO<sub>2</sub> eq.).

ktCO<sub>2</sub> eq.



Chemicals and fossil fuels have been the primary drivers of our emissions, whereas wood and paper play a significant role in reducing emissions by absorbing and storing biogenic carbon. Trees capture carbon dioxide from the atmosphere as they grow, storing it in the wood and paper. This carbon remains locked within the wood and paper used in our products until the end of their life. Though paper production generates carbon emissions, the carbon stored in the paper more than offsets these emissions.

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In 2019, the beneficial contribution of paper and wood was more limited due to two main factors. Firstly, the Rheda-Wiedenbrück factory was only included in the LCA as from 2021. This plant consumes a significant amount of wood, thereby adding to the carbon storage in our product portfolio. Secondly, the paper impact was modeled mainly using primary data starting from 2021, whereas in 2019, it was based on a general database. This change led to a reduced impact for paper, as our suppliers performed better than the average of the database.

## *Contributors to the carbon footprint*

tCO <sub>2</sub> eq.							
	Total	Chemicals	Fossil fuel	Power	Wood/Paper	Waste	Other
2019-baseline	420,292	209,862	160,784	77,091	-71,589	24,767	19,377
2022	309,230	202,804	179,035	38,332	-178,670	29,124	38,605
2023	292,128	172,545	173,582	31,863	-180,276	33,249	61,165

## 2023 results

In 2023, the cradle-to-gate carbon footprint of the Group was 292ktCO<sub>2</sub> eq. Between 2022 and 2023, the cradle-to-gate impact reduced by 17ktCO<sub>2</sub> eq. Lower production volumes contributed to a decrease of 34ktCO<sub>2</sub> eq. in the carbon footprint and drove the overall impact reductions. Upstream changes, on the contrary, added 16ktCO<sub>2</sub> eq., primarily due to data refinement and an update to the LCA database.

While several companies successfully reduced their carbon footprint, these gains were offset by increases in other areas, resulting in a net increase of 1ktCO<sub>2</sub> eq. across the Group. Our factories in Weert (The Netherlands), and Bra (Italy) contributed to the net impact increase due to reduced production efficiency. Lower production volumes led to higher energy consumption and increased waste generation. Additionally, an unfavourable product mix further impacted the footprint. On the other hand, several factories achieved footprint reductions through improvement initiatives. In China, the share of green electricity was further increased, and a greater portion of natural gas was replaced with steam byproduct at the JiuJiang plant. Additionally, overall energy efficiency improved across all Chinese sites due to various optimisation efforts. In Kolho (Finland), the shift to exclusive LNG (liquefied natural gas) usage (compared to a mix of LNG and LPG—liquefied petroleum gas—in 2022) and a reduction in fuel consumption contributed to a lower footprint. Similarly, in Saint Jean sur Richelieu (Canada), the installation of a heat recovery system for the presses led to a decrease in natural gas consumption.

The table that follows presents the cradle-to-gate emissions of 2023 alongside with 2022.

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## *Cradle-to gate carbon emissions (2023 vs 2022)*

ktCO<sub>2</sub> eq.

Plant	2022	Data adjustments	ΔVolume	Net change	2023
Weert, NL	28	1	-6	4	27
Kolho, FI	10	0	0	-1	10
North Shields, GB	20	-1	-3	0	15
Bra, IT	55	3	-14	6	50
Valencia, ES	12	1	0	-1	12
Saint Jean sur Richelieu, CA	32	1	-2	-3	29
Evendale, US	44	0	-3	0	41
Bangkok, TH	20	0	-1	1	20
HsinChu, TW	25	1	-2	4	28
QuingPu, CN	16	1	-2	-2	13
JiuJiang, CN	23	-1	-3	-8	11
Kalol, IN	2	0	3	-1	4
Herzberg am Harz, DE	9	0	0	0	9
Rheda-Wiedenbrück, DE	14	9	-1	1	22
<b>Total</b>	<b>309</b>	<b>16</b>	<b>-34</b>	<b>1</b>	<b>292</b>

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## Future outlook

To support progress, we maintain a comprehensive database of identified projects and their expected impact. As mentioned already before, the majority of these projects are commercial or operational in nature, while also delivering sustainability benefits. As a result, carbon reduction is fully embedded in our business planning, reinforcing its position as a core priority. So far, we have identified a footprint reduction potential of 186ktCO<sub>2</sub> eq., with further opportunities continuously being explored. Of these 186ktCO<sub>2</sub> eq., 20ktCO<sub>2</sub> eq. have been achieved, whilst 35-40ktCO<sub>2</sub> eq. are in progress. The remaining 126ktCO<sub>2</sub> eq. are planned for future implementation, ensuring we have the necessary capacity to execute these initiatives effectively.

Projects are categorised based on their reduction approach—either efficiency improvements or input replacements, as outlined in the previous sections.

## 2024

Based on the projects implemented in 2024 and the lower production volume experienced across the Group, we anticipate a reduction in our (cradle-to-gate) carbon footprint of approximately 15%, resulting in a total of ~250ktCO<sub>2</sub> eq. Our estimated footprint improvement is around 10-20ktCO<sub>2</sub> eq., with the upper range reflecting an annual run-rate. Half of this reduction stems from the use of green electricity in our plant in Rheda-Wiedenbrück (Germany). The remaining 10ktCO<sub>2</sub> eq. reduction is mainly a result of energy efficiency projects.

A preliminary estimate of our 2024 carbon footprint, based on actual energy consumption and volume fluctuations, aligns with our expectations. The final 2024 results will be available in May 2025, as the process is time-consuming and involves extensive data collection from each plant and department, quality verification, mass balance assessments, and modelling.

### 2024 carbon footprint estimate

tCO <sub>2</sub> eq.	Total	Chemicals	Fossil fuel	Power	Wood/Paper	Waste	Other
2019 LCA	420,292	209,862	160,784	77,091	-71,589	24,767	19,377
Δ'19-'23	-128,164	-37,317	12,798	-45,228	-108,687	8,482	41,788
2023 LCA	292,128	172,545	173,582	31,863	-180,276	33,249	61,165
<b>2024 calculated reductions</b>							
Energy efficiency	-7,500		-7,500				
Material efficiency	-1,800	-1,300	-500				
Renewable energy	-11,400			-10,100		-1,300	
Renewable material	0						
Estimation end 2024 (excluding volume changes)	271,428	171,245	165,582	21,763	-180,276	31,949	61,165
Estimation end 2024 (including volume changes)				-250,000			

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## 2025

In 2025, we plan to achieve a 35-40ktCO<sub>2</sub> eq. reduction through the implementation of 49 projects.

This improvement mainly stems from factory efficiency programs targeting both waste and energy. These reductions are almost evenly distributed between the two areas. While in 2024 we only began to tap into the potential savings achievable from waste reduction, in 2025 we will intensify our efforts, doubling down on initiatives to unlock greater opportunities in this area.

Further potential saving comes from increasing the material efficiency of our products and their bio-based content.

Additionally, to improve the accuracy of our models, we will replace database averages with supplier-specific impact data whenever available. We believe this will also lead to a reduction in our carbon footprint.

### *2025 carbon footprint projection*

tCO <sub>2</sub> eq.							
	Total	Chemicals	Fossil fuel	Power	Wood/Paper	Waste	Other
Estimation end 2024 (excluding volume changes)	271,428	171,245	165,582	21,763	-180,276	31,949	61,165
<b>2025 reduction projections</b>							
Energy efficiency	-6,850		-6,650	-200			
Material efficiency	-10,000	-1,300				-8,700	
Renewable energy	-3,200		-1,400	-1,800			
Renewable material	-7,900	-7,900					
Supplier-specific data	-11,000	-11,000					
Estimation end 2024	232,478	151,045	157,532	19,763	-180,276	23,249	61,165

## Beyond 2025

As previously mentioned, we have identified significant improvement potential. So far, we have recognised a footprint reduction opportunity of 186ktCO<sub>2</sub> eq., with further possibilities continuously being explored.

After accounting for the reductions achieved in 2024 and those planned for 2025, we still have a remaining potential reduction of 126ktCO<sub>2</sub> eq. Of this, approximately 10% is attributed to energy optimisation projects, 5% to material efficiency initiatives, 70% to less impactful raw materials, and the remaining 15% to the transition to renewable energy.

As it can be concluded based on these numbers, the greatest reduction potential for our Group in the future is primarily linked to innovations that redefine our products' raw materials and our processes. While efficiency improvements remain valuable, the most significant impact will come from forward-thinking solutions (e.g. bio-based raw materials; electrification) that minimise the environmental impact. Additionally, selecting the best-performing suppliers will play a crucial role in driving further reductions.

The potential for further reduction is significant, providing an optimistic outlook for the years ahead, as we know there is still much we can achieve. By fully leveraging these opportunities, we have the chance to not only make substantial progress in reducing our footprint but also to establish ourselves as a leader in sustainability within our industry. However, realising this potential requires discipline and rigour to ensure that the most promising initiatives are effectively implemented and deliver meaningful impact.

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## 6 | CRADLE-TO-GRAVE DATA

The sections below presents the cradle-to-grave LCA results as well as the emissions calculated using an alternative methodology to the LCA: the Greenhouse Gas (GHG) Protocol.

### LCA results

As mentioned earlier, we are expanding our reporting to include a cradle-to-grave assessment. In parallel, we are separately reporting the biogenic carbon uptake of our products to clearly highlight the carbon they store. This biogenic carbon is subtracted as a credit from the cradle-to-gate impact and added back to the gate-to-grave, when it is released into the atmosphere. Our cradle-to-grave carbon footprint totals approximately 700ktCO<sub>2</sub> eq. The cradle-to-gate impact of circa 300ktCO<sub>2</sub> eq. includes a benefit of 271ktCO<sub>2</sub> eq. for the carbon stored in the biobased content - mainly wood - we use. This stored carbon is then added back in the gate-to-grave phase, resulting in the circa 400ktCO<sub>2</sub> eq. we report below.

### *2023 cradle-to-gate, cradle-to-grave, and carbon uptake data*

ktCO <sub>2</sub> eq.	2023			
	Plant	Cradle-to-gate	Gate-to-grave	Biogenic carbon
Weert, NL		27	72	-43
Kolho, FI		10	10	-6
North Shields, GB		15	14	-9
Bra, IT		50	48	-30
Valencia, ES		12	21	-13
Saint Jean sur Richelieu, CA		29	38	-23
Evendale, US		41	42	-28
Bangkok, TH		20	17	-10
HsinChu, TW		28	24	-15
QuingPu, CN		13	14	-8
JiuJiang, CN		11	17	-11
Kalol, IN		4	2	-1
Herzberg am Harz, DE		9	2	-1
Rheda-Wiedenbrück, DE		22	94	-73
<b>Total</b>		<b>292</b>	<b>417</b>	<b>-271</b>

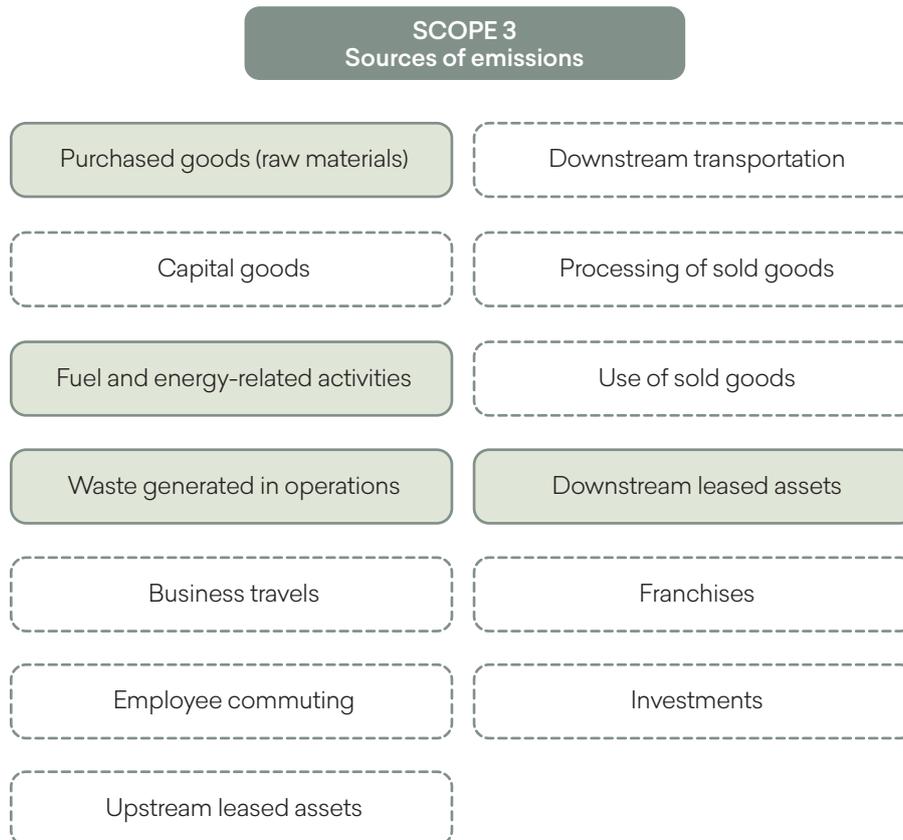
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## 2023 Scope 1, 2, and 3 emissions

In addition to the Life Cycle Assessment methodology, carbon footprint results can be assessed using an alternative approach: the Greenhouse Gas (GHG) Protocol.

Whilst the LCA approach evaluates emissions from a product's life cycle perspective, including cradle-to-gate and cradle-to-grave, the GHG Protocol categorises emissions into Scope 1 (direct emissions from owned sources), Scope 2 (indirect emissions from purchased electricity, heat, or steam), and Scope 3 (all other indirect emissions in the value chain).

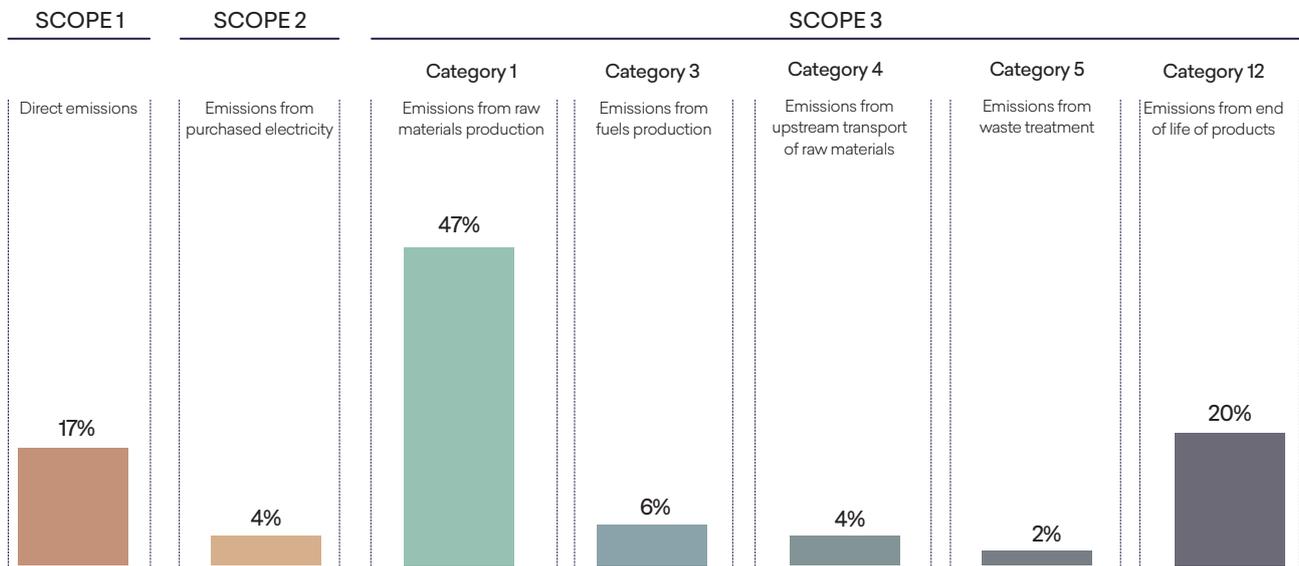
Scope 3 emissions encompass an extensive and diverse range of indirect emissions that occur across a company's entire value chain, both upstream and downstream. However, not all the sources have a material impact on our overall carbon footprint. To ensure a focused and meaningful approach, we prioritise the significant contributors. Based on a preliminary screening analysis, we excluded subcategories with a negligible impact (<3%). The graph below outlines the different Scope 3 emissions sources, with those included in our calculations highlighted in green.



# BROADVIEW MATERIALS

The calculation principles and modeling assumptions applied to both the Life Cycle Assessment and the emissions scopes remain consistent except for a key difference concerning carbon uptake and biogenic emissions. The LCA method accounts for carbon uptake as a credit in the cradle-to-gate phase and later releases it in the gate-to-grave phase as biogenic emission. In contrast, the GHG Protocol does not account for biogenic carbon credits nor releases. As a result, although both approaches result in the same total emissions—approximately 700ktCO<sub>2</sub> eq.—the way these emissions are distributed throughout the product’s lifecycle differs.

## GHG emissions distribution per scope



## 7 | BEYOND THE GATE

Our products, at the end of their useful life, are typically incinerated, resulting in the release of all stored carbon into the atmosphere. However, for our durable products, this release occurs with a significant delay due to their extended lifespan. A longer lifespan not only keeps carbon stored for a prolonged period but also reduces the need for frequent product replacements. This, in turn, leads to lower resource consumption, less waste generation, and reduced emissions over time, ultimately contributing to a smaller overall environmental footprint.

Our products are designed to last longer, whereas shorter life cycles often mean lower-quality materials. We produce high-quality yet affordable materials, enhancing the durability of the final product without significantly impacting the price.

In addition to designing for longevity, we encourage and facilitate extended product lifespans through initiatives such as Trespa Second Life.

### KITCHENS: PAST VS. PRESENT

In the past, kitchens used to last 20 to 30 years, whereas, today, their lifespan is often much shorter due to shifts in consumption patterns and manufacturing practices. Fast-changing trends, lower durability, and a culture of frequent upgrades have led to kitchens being replaced more often. Since kitchens are made from a complex mix of materials, they are difficult to recycle, meaning shorter lifespans result in increased resource extraction, higher production needs, and more waste. This, in turn, leads to greater carbon emissions and environmental impact.

# BROADVIEW MATERIALS

## Trespa Second Life

Trespa Second Life is a program aiming to reuse Trespa material that for one reason or another is being dismantled before the end of the product's useful life. That being changing building regulations or simply a change in taste of the building owner, we take back the material, which still has a lot of value to offer.

So far, over 2023 and 2024, approximately 9,000m<sup>2</sup> of Trespa panels that would have otherwise been incinerated have been repurposed for various applications such as outdoor furniture, bike sheds, garden projects, signage, and more, saving circa 100,000kgCO<sub>2</sub> eq. The panels we took back were between 12 and 38 years old and still in very good conditions.

### HOW TRESPA SECOND LIFE WORKS

**Eligibility check:**

Panels necessarily need dismantling, be verified as Trespa panels, not been exposed to hazardous materials, mechanically attached, and dismantled without excessive damage. Trespa assesses the environmental impact of transportation to ensure its outweighed by the environmental benefits of reuse. Trespa Second Life is active in the Netherlands, France, Germany, and Belgium with plans for expansion to other regions.

**Express interest:**

Interested parties should send an email to [secondlife@trespa.com](mailto:secondlife@trespa.com) and provide information about the panels.

**Evaluation:**

Trespa evaluates the request for take-back.

**Reused and collaboration:**

If approved, the panels are repurposed for various uses like (bike)sheds, storage, garden applications, signage, and waste separation bins in collaboration with partners.

# BROADVIEW MATERIALS

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## 8 | DISCLOSURE BESIDES THIS POSITION PAPER

As sustainability is at the core of our strategy, we include our LCA results in Broadview's financial report each year.

# BROADVIEW MATERIALS

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