

Formica Group

Materialising Sustainability



THE FIRST AND ORIGINAL

Est 1913

INSPIRED BY LIFE. EVOLVING WITH THE TIMES



In collaboration with Nemho Sustainability Team

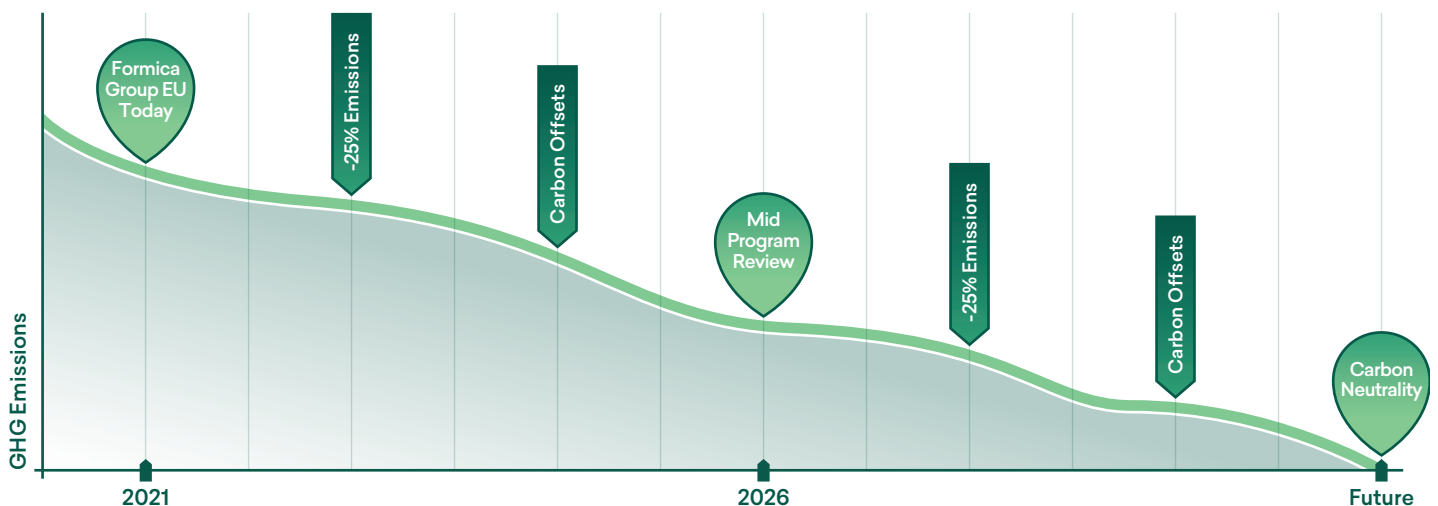
Executive Summary

Formica Group: The path toward carbon neutrality

Since its founding in 1913, Formica Group has worked to provide innovative, high quality products to its customers. Using resources efficiently has always been a key part of how we run our business. In 2019, Formica Group joined Broadview, a Netherlands based company and leader in sustainability in the decorative materials market. The acquisition by Broadview has raised the bar for sustainability expectations and provided access to tools and technologies to accelerate our sustainability improvement trajectory.

The next step in Formica Group's sustainability journey is a higher level of transparency - proactively communicating our environmental impact data and our plans for improving it in the future. To do that, we will publish an annual Sustainability Position Paper that will detail our journey to reduce emissions in Formica Group facilities and develop offset projects that help reduce or capture carbon emissions in the broader environment. Our path toward carbon neutrality includes a targeted reduction of carbon emissions by 25% by 2026.

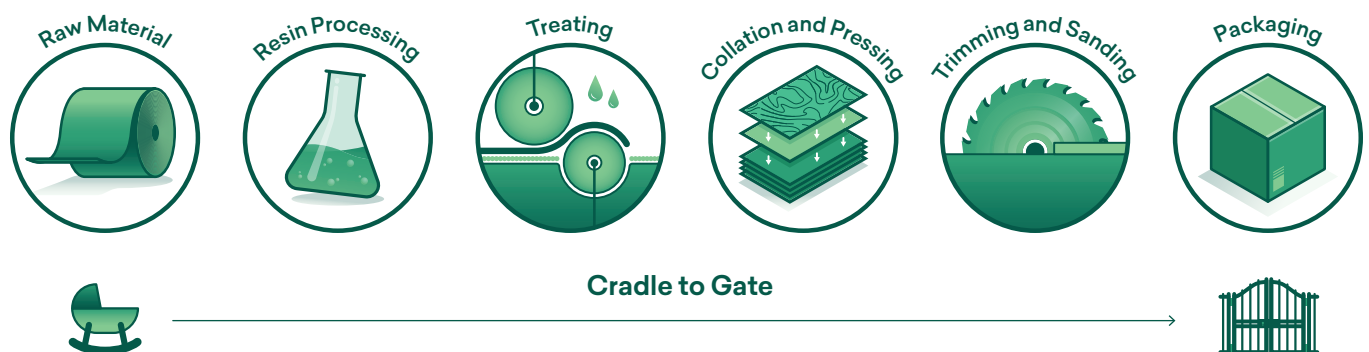
Moreover, in line with the European target of reaching carbon neutrality by 2050, we set the ambition of becoming carbon neutral by 2040. Our main focus remains on cutting emissions and we will rely on compensation as last resource.



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.



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 limit 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. With Broadview, Formica Group was able to leverage leading sustainability tools to fast track our effort to create a Life Cycle Assessment. The LCA results are shown below for the two factories in Kolho, Finland and North Shields, UK in the three key environmental factors: 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	2021 Impact
Global Warming ¹	ton CO ₂	50.729	38.264
Primary Energy Demand	GJ	2.424.445	1.923.074
Water Footprint ²	m ³	34.200.606	30.218.826

Formica Group has plans to address all three environmental factors, however, the urgency of Global Warming requires that the reduction of CO₂ emissions be our absolute priority for the years to come. Our primary focus will be on projects to cut the 12,7 thousand tonnes of CO₂ emissions generated in the production of our products.

Between 2019 to 2021, Formica Group noted an impact reduction on global warming by 29%. This reduction was mainly due to the switch to 100% Renewable Electricity as of 2020 and increased waste efficiency, however a share of this decrease was due to the lower production volumes because of the Corona Pandemic as well as some data improvement activities. Therefore, in order to achieve the 5-year targets, we will continue implementing impact reduction projects detailed in the next section.

A clear action plan for the coming 5 years

Our goal is to reduce carbon footprint which starts with a goal for a 25% reduction (12,7 thousand tonnes) of CO₂ 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 Efficiency – optimize the use of thermal energy at the presses and impregnation line	Scope 1	6%	Ongoing
Sourcing of Green Power – switching to 100% renewable electricity	Scope 2	5%	Target reached
Sourcing Renewable Raw Materials – including resins from bio-sources	Scope 3	14%	Ongoing
Target reduction total: 25% (12.700 tonnes)			

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 over 50% 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 CO₂ from the atmosphere during their growth and continue storing it once harvested.

Beyond Carbon reduction, Formica Group will also pursue a 7% reduction in Primary Energy Demand and an 8% reduction of our Water Footprint. As stated above, we will develop projects to capture carbon outside our business; this will include buying offsets or co-investing in projects.

We will be transparent about 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 you 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, a long-form version of this paper is available with additional information and data. Our Formica Group team also is more than happy to answer questions - feel free to contact your local Formica Group team member for more information.

¹Global warming impact includes the CO₂ storage of the wood fibres present inside of our panels.

²The 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.



Introduction

The Formica Group of companies was founded in 1913 in Cincinnati, Ohio as The Formica Products Company by former Westinghouse engineers Daniel J. O'Connor and Herbert Faber. The two discovered that plastic resins could be used as an effective substitute “for mica” in electrical componentry, and with their invention, they created a new category of materials known as high-pressure laminate (HPL). By the 1930s, The Formica Products Company had shifted away from industrial applications to decorative surfaces. Formica® Brand Laminates became well known for fashionable designs, durability and ease of cleaning, and Formica® Surfaces were broadly used in cafes, railway cars and ocean liners.

Fast forward to today, the modern-day Formica Group remains committed to innovation and maintaining a leading position in design and manufacture of high quality HPL surfaces for applications ranging from health care to family homes, education to hospitality, retail, leisure and transport projects. Today, Formica Group is a global group of companies operating worldwide. In Europe, Formica Group has plants in the UK, North Shields, Spain, Valencia and Finland, Kolho.

In 2019, Formica Group was purchased by Broadview Holding, a Netherlands-based global leader in material technology. Part of Broadview's explicit strategy is that each business in its group, including Formica Group, will pursue ambitious sustainability initiatives and results. Along with Broadview Holding, Formica Group is committed to a long-term planning horizon that includes becoming an industry-leading environmental steward. A key element to this approach is being highly transparent about our current environmental footprint as well as our plans and targets for reducing our overall impact.

As part of our new sustainability approach, Formica Group will publish its environmental impact data every year, as well as our targets and initiatives for the coming year. This report is the first of our annual publication of our sustainability data and results. We are excited to share it with you as we continue to advance our sustainability efforts.

Overall Philosophy

Formica Group'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

We 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 minimise the environmental impact in all of our operations and products.

Do good

We will support suppliers and customers in realising 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

We believe 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.

Overall Philosophy

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

1. Common Sense

Formica Group 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 maximising our product functionality while minimising 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.

2. Fact-based approach

At Formica Group, 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 process 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 Formica® Brand products and the resulting wastes and emissions released into the environment.

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

The environmental burden of product or an activity can be expressed through several impacts, such as global warming, acidification, eutrophication, ozone depletion, primary energy demand, photochemical oxidant formation, water footprint, abiotic depletion and many others. For Formica Group's LCA assessment, we show results tied to three key environmental factors: Global Warming (CO₂ Emissions), Primary Energy Demand and Water Footprint.

From among these three environmental impacts, global warming represents Formica Group'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 China and Thailand) 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.

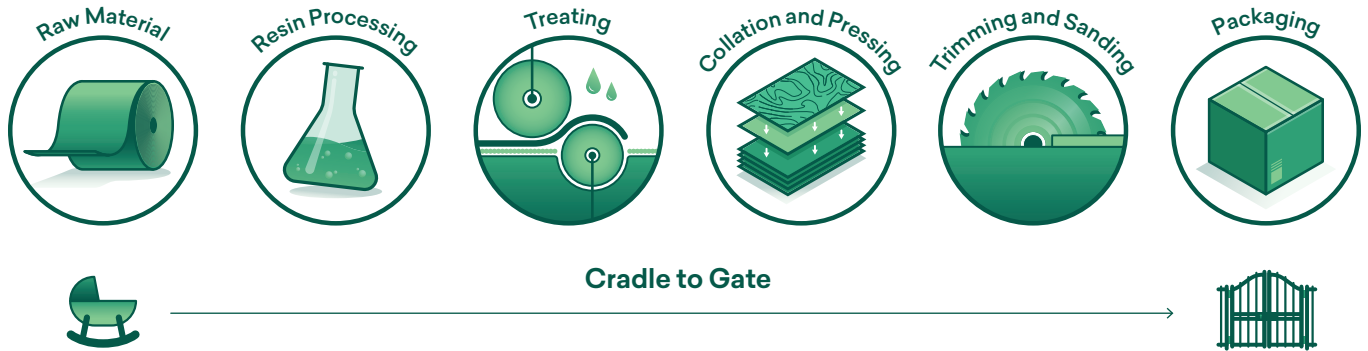
3. Part of how we run the business

All sustainability initiatives are part of Formica Group'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 formalised in a detailed sustainability target agreement. Progress is closely monitored and discussed by the leadership team of Formica Group 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. Formica Group 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 Formica Group'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.



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 using 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.

Materials;

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

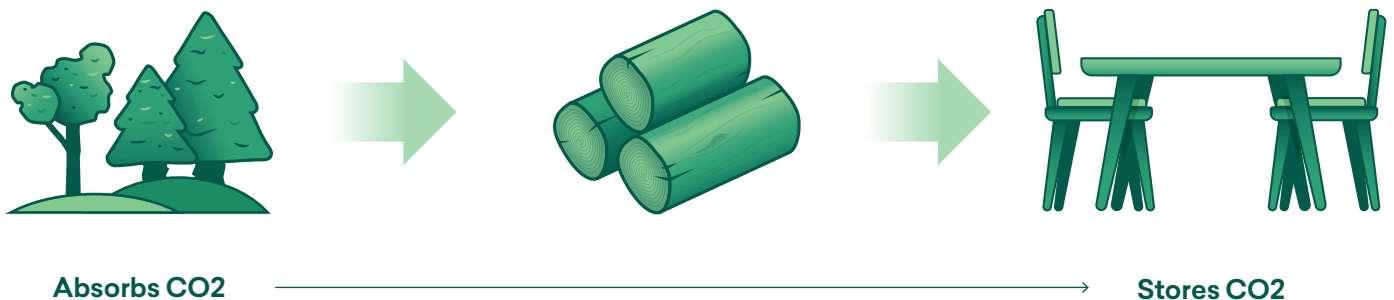
Additionally, we will work with the materials suppliers that contribute the most to our impact, to share our ambitions and goals and to find mutually beneficial opportunities to improve our collective environmental footprint.

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, hydro, solar). This will include working with third parties but also projects implemented on our own sites.



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 CO₂ from the atmosphere during their growth and continue storing it once harvested. To get a bit technical, trees absorb through the photosynthesis CO₂ and solar energy in their wood creation and release oxygen in return. The CO₂ 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 resin, with the bio-based share exceeding the fossil-based one.

The rising availability of bio-based materials is making it more and more feasible to further increase the share of bio-based materials within our products. Between selecting bio-based alternatives and better-performing suppliers, sustainability will become a critical parameter when choosing our partners.

Balancing Out Residual Emissions

As mentioned earlier, Global Warming (CO₂ emissions) represents our absolute priority for the years to come. This means we will put extraordinary efforts to cut the CO₂ emissions generated by our products¹. We will pursue this goal by applying the strategy outlined previously 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. For residual CO₂ generation, Formica Group will compensate 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 sequestration projects.

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

Formica Group Baseline LCA Data:

Our Learnings and Progress to Date

In recent years, Formica Group has put additional effort toward strengthening our sustainability approach. As a starting point, we have conducted detailed life cycle analysis at all our facilities and have created a plan to improve our environmental impacts. Formica Group's recent LCA studies have enabled us to:

- Better understand our mass and energy flows/balances
- Measure our environmental impacts per standard unit of material, to establish a normalised measure for future improvements
- Identify the major environmental impact contributors in our process in order to set priorities for action
- Investigate a number of external activities to understand their potential of decreasing our global warming impact

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, and our total impact in 2019 at Formica North Shields (UK) and Kolho (Finland) plants.

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

Impact Category	Unit	Impact per unit	Total Impact 2019
Global Warming²		4,32	50.729
Scope 1 Emissions	ton CO ₂ eq.	1,69	20.524
Scope 2 Emissions		0,32	3.613
Scope 3 Emissions		2,32	26.592
Primary Energy Demand		204,30	2.424.445
Renewable PED	GJ	84,36	995.987
Non Renewable PED		119,94	1.428.457
Water Use³	m ³	3,14	34.200.606

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 m² of panel.

These numbers provide a baseline of the environmental impact of our products.

¹ The emissions generated from cradle to plant gate

² Global warming impact includes the CO₂ storage of the wood fibres present inside of our panels.

³ 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 has been adjusted compared to the previous position paper to reflect an accurate comparison between the years.

Progress in 2021

In this section, the LCA results for the years 2019 and 2021 are shown and discussed.

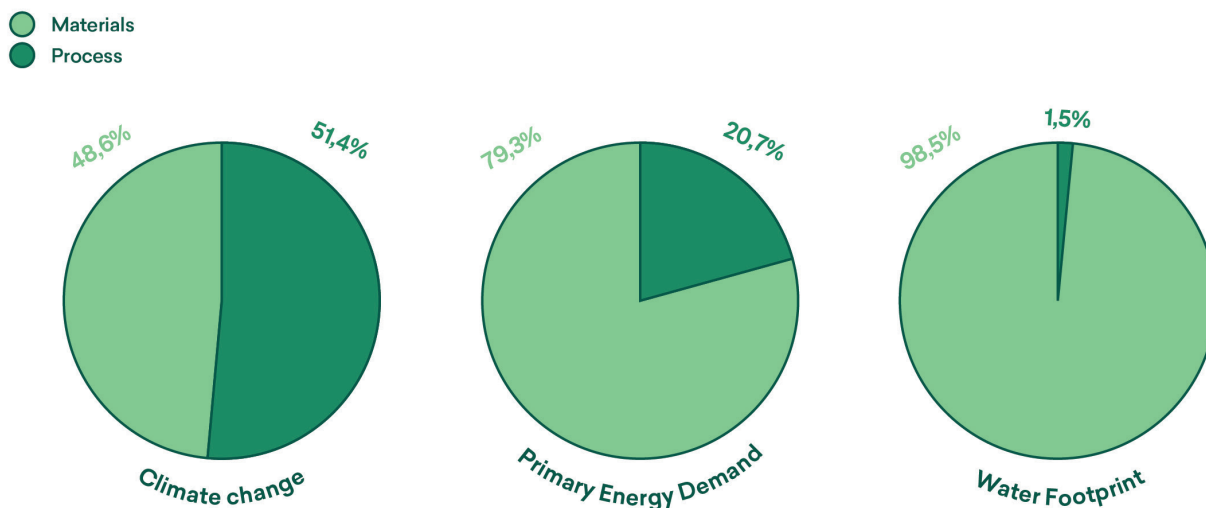
Impact Category	Unit	Impact per unit 2019	Impact per unit 2021	Δ'19-'21	Total Impact 2019	Total Impact 2021	Δ'19-'21
Global Warming		4,32	3,24	-25 %	50.729	38.264	-25 %
Scope 1	ton CO ₂ eq.	1,69	1,59	-6 %	20.524	18.727	-9 %
Scope 2		0,32	0	-100 %	3.613	0	-100 %
Scope 3		2,32	1,65	-32 %	26.592	19.537	-27 %
Primary Energy Demand¹		204,30	163,01	-20 %	2.424.445	1.923.074	-21 %
Renewable PED	MJ	84,36	68,69	-19 %	995.987	810.347	-19 %
Non Renewable PED		119,94	94,32	-21 %	1.428.457	1.112.727	-22 %
Water Footprint	m ³	3,14	2,56	-18 %	34.200.606	30.218.826	-12 %

¹ A calculation mistake while separating the total PED values between NRW and RW in the last version has now been fixed.

Compared to the baseline year of 2019, the total environmental impact of Formica Group panels showed a decrease in 2021; by 25% on Global Warming, by 21% on Primary Energy Demand, and by 12% on Water Footprint. The observed delta in all impact categories is driven by switching to 100% renewable electricity on both Kolho and North Shields factories as of 2020, increased waste efficiency at both factories, and increased fuel efficiency at the North Shields factory while a share of this reduction was due to the production volume decrease and data improvements. Excluding the production volume decrease, the impact change would have been 5% decrease on Global Warming, 0,5% decrease on Primary Energy Demand, and an 11% increase in Water Footprint. Hence, in the coming years we will continue putting our focus on improvement activities mentioned in the previous sections. The total and per-unit LCA results of 2020 can be found in Appendix 2.

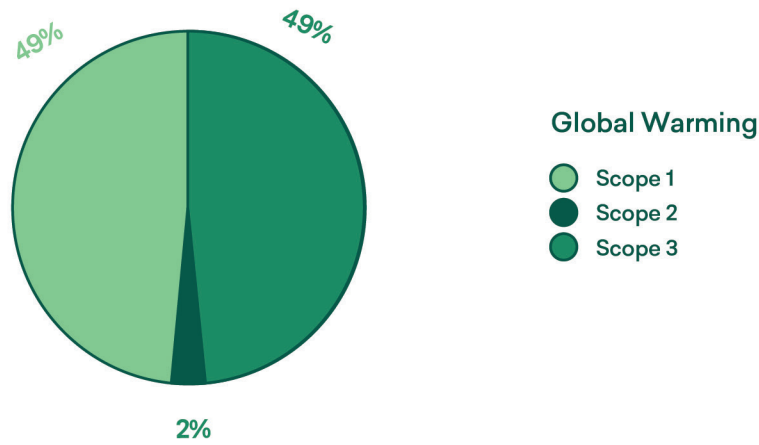
Contribution analysis for 2021

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 (CO₂ 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.



Additionally, Global Warming (CO₂ emissions) has been further broken-down in three categories consistently with the Greenhouse Gas Protocol (see Figure below):

- 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



Cradle-to-gate impact reduction

The entire goal of Formica Group's 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 (CO₂ emissions): 25% reduction
- Primary energy demand (fossil): 7% reduction
- Water footprint: 8% reduction

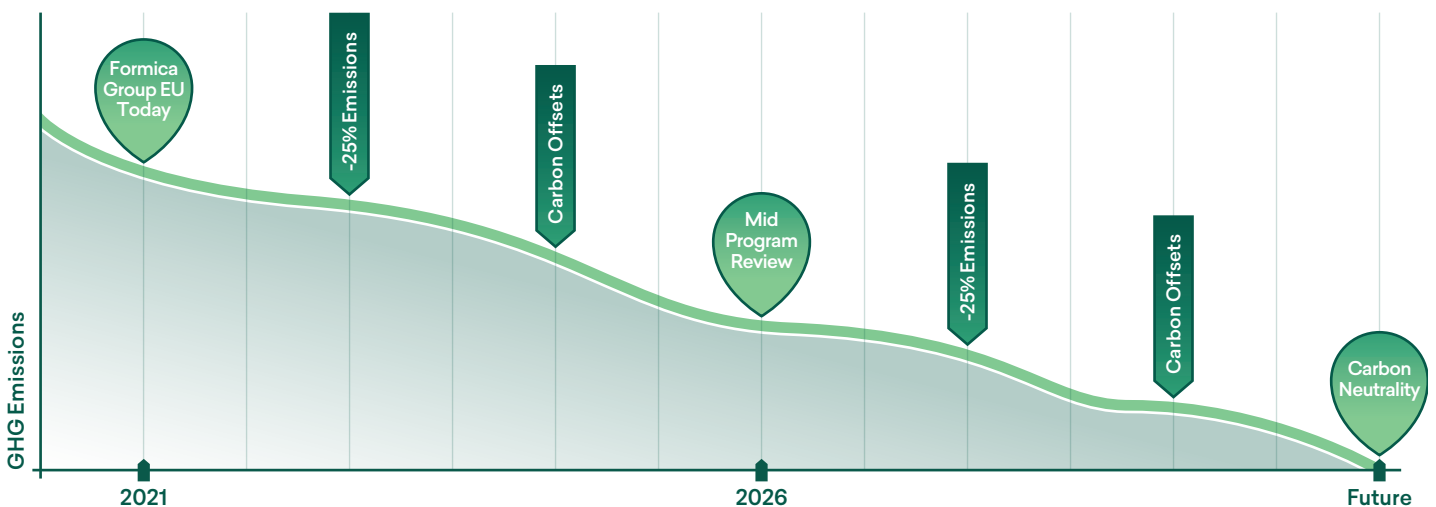
In order to achieve the global warming target, Formica Group is undertaking a series of activities and projects detailed in the table below along with the updated status.

CO ₂ emission reduction activity	Emission scope	CO ₂ reduction potential	Status
Energy Efficiency – Optimize the use of thermal energy at the presses and impregnation line	Scope 1	6%	Ongoing
Sourcing of Green Power – Switching to 100% renewable electricity	Scope 2	5%	Target reached
Sourcing Renewable Raw Materials – including resins from biosources	Scope 3	14%	Ongoing

Target reduction total: 25% (12.700 tonnes)

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 recognise 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 Life Cycle Analysis 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 put forth a continuous 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 plays in our products' LCA, we plan to continue to refine our data and collect inputs directly from our paper and chemical suppliers to further improve the specificity and accuracy of that data. Combined, the end goal is to develop and maintain a highly accurate and actionable LCA model for our products.

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 Category	Unit	Impact per unit 2020	Total Impact 2020
Global Warming		3,86	37.019.395
Scope 1	ton CO ₂ eq.	1,77	16.859.434
Scope 2		0,11	1.113.925
Scope 3		1,97	19.046.035
Primary Energy Demand¹		175,17	1.676.923.624
Renewable PED	GJ	71,24	681.680.908
Non Renewable PED		103,93	995.242.716
Water Use²	m³	2,68	25.769.354

¹A calculation mistake while separating the total PED values between NRW and RW in the last version has now been fixed.

²The 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.

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.

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