

Sustainability Insights 2023

Sustainability at Brenntag

In Sustainability Insights, we wish to give you a glimpse into the myriad of sustainability projects with and in which Brenntag is involved worldwide. Driven by the aspiration to contribute to the preservation of our planet for future generations, in 2022 we developed and introduced a comprehensive ESG strategy. Locally, this is implemented by numerous employees who work to ensure a sustainable future and look after the well-being of both the people around us and the environment. On our projects, we look for environmentally friendly solutions, become involved in the communities at our sites, help our customers to reduce their carbon footprints, enter into new partnerships, reduce our own emissions and support our employees' advancement in line with their qualifications and talents.

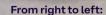
Dive into the many different topics and projects that we present in the sections Pathway, People and Planet. In the Pathway section, you will gain an insight, among other things, into our vision of a circular economy as well as a range of sustainable initiatives at our sites. In the People section, you will get to know our employees who are active in a variety of ways, such as redesigning kindergartens in South Africa, and take forward important topics such as diversity, equity and inclusion. Under Planet, we show you our activities to increase environmental protection. The projects range from our own beehives through tree-planting to initiatives to increase sustainability in the pharmaceuticals industry.

This is a colorful selection of our activities to increase sustainability and shows the impact that we can have if everyone pulls in the same direction.

The Brenntag team wishes you an interesting, informative and entertaining read.



In the first issue of Sustainability Insights, we show, how diverse our global sustainability efforts are. We want to illustrate what we do at our sites and what our employees are committed to with passion. How important sustainability is to our corporate strategy is explained by our CEO Christian Kohlpaintner and Vice President Sustainability Brenntag Group Andreas Kicherer in an interview.



Dr. Christian Kohlpaintner CEO Brenntag SE

Dr. Andreas Kicherer

Vice President Sustainability Brenntag Group



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This is the very first issue of Sustainability Insights, Brenntag's new annual sustainability magazine. Where did the impetus for this publication come from?

Christian Kohlpaintner: For many years, sustainability has been a very important topic for Brenntag; it's an essential part of our strategy and our purpose. We make enormous efforts worldwide to continuously improve our sustainability performance and implement numerous projects to drive our agenda forward. These merit a dedicated publication that describes individual measures, provides background information and spotlights positive effects in greater detail than is possible within the mandatory ESG (environment, social, governance) reporting framework.

So, Sustainability Insights complements your existing ESG reporting?

Andreas Kicherer: Indeed. For almost ten years, Brenntag has very successfully covered its sustainability efforts and projects in annual sustainability reports accompanying the annual report. This March, we published for the first time a combined separate non-financial report integrated into

the annual report. This integration also underlines Brenntag's commitment to ESG, it being a performance driver for our company. The non-financial report mainly focuses on aspects such as key figures on sustainability and our ESG strategy. In particular, it addresses the information needs of our stakeholders in the financial sector such as capital market players, banks and rating agencies.

Sustainability Insights, on the other hand, shines a spotlight on people and environment-driven sustainability efforts and projects, as they are an essential part of our sustainability agenda. This magazine addresses the needs of a broader interest group including existing and future employees, customers and suppliers, and offers a look behind the scenes at Brenntag featuring a wide variety of stories.

What can we expect from this magazine?

Andreas Kicherer: Our ESG strategy and agenda includes a highly diverse range of topics. We want to foster a sustainable future and care for human needs. It was our goal to cover that purpose within the magazine. That is why we have structured it along the topic areas Pathway, People and

Planet. We feature examples along the entire value chain and, of course, also keep an eye on our community relations, as these are part of our commitment to society.

I assume that these efforts are not just a matter of goodwill but have an impact on Brenntag's worldwide business.

Christian Kohlpaintner: As a worldwide operating company, we implement and aim to achieve our sustainability goals on a global scale. Brenntag has the vision and the capabilities to shape the future of our industry by empowering our partners within networks and driving collaboration, excellence and shared success. A well-thought-out sustainability framework, based on a comprehensive and future-oriented ESG strategy, will bring our vision to life and have a beneficial effect on the business. I am convinced that sustainability can only create an impact if it is fully aligned with the business strategy and sets ambitious goals. Thus, Brenntag can really foster change in our industry.

We are talking on a global scale, but what about on a regional or even local level?

Andreas Kicherer: We can only progress if we act as a collective and if all employees at all sites support each other. And this is exactly why it's so important for us to tell regional and local stories as part of our major global initiatives. One Insights story is about Indigenous communities in North America, another about composting at a site in Latin America. One time we travel with our readers to tree-planting projects on Southeast Asian islands in the Asia Pacific region, we show how employees are volunteering for kindergartens in Africa, or how application centers in Europe can work sustainably with the help of green enzymes. All these very different and sometimes local stories represent Brenntag. That is why it is important for us to emphasize: Every single employee contributes in their own way to our sustainability success. And all these pieces complement one another for our comprehensive sustainability picture, our "Future Sustainable Brenntag".

Christian Kohlpaintner: The sustainability journey at Brenntag is extraordinarily multifaceted. No matter whether you explore the global Group strategy or individual employees' contributions and ideas at our sites: There is a lot to discover at Brenntag. In this magazine, you can read about an exciting selection of our projects and initiatives with a focus on those we implemented in 2022. In that sense, I am particularly pleased to welcome you, dear reader, to this very first issue of our Sustainability Insights. ■

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Christian Kohlpaintner



Pathway

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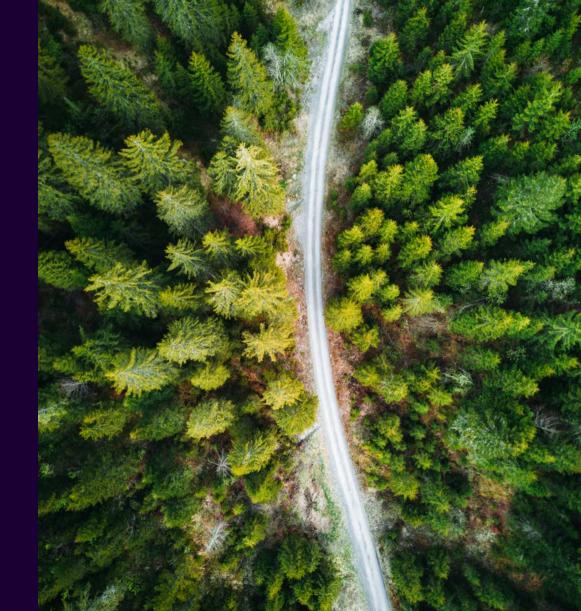


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Pathway: Our route to a sustainable future

Sustainability is a fundamental part of our corporate strategy and culture. We are working to ensure a sustainable future. This is embodied in our sustainability vision Future Sustainable Brenntag. Through our corporate governance structures, we give consideration to the effects of our operations on the environment and society both in day-to-day business and when making strategic decisions.



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Assessing physical climate risks: our climate change early-warning system

One of our primary objectives in all our sustainability activities is to reduce greenhouse gas emissions in order to achieve the 1.5°C target. Nevertheless, we have to consider the possibility of stronger warming and learn how to handle and adapt to the effects. This includes being aware of the very different risks at our sites distributed around the globe.

In 2022, we launched a pilot project where we identify physical climate risks for all Brenntag sites throughout the Group. More specifically, our Swiss partner Sustainaccount analyzes the future potential risk arising from fluvial and coastal flooding, water availability, hail, flash floods, heat waves, storms and fire.

The risk assessments are based on different temperature scenarios. This means that we calculate risks where global warming is 1.5°, 2.0° and 4.8° Celsius. The result has a value ranging from 0 - that is, very low risk - to 1, very high risk. Potential risks can thus be determined specifically for each site. This approach helps us to assess possible risks and take appropriate precautions. To this end, all sites are shown on maps where they are marked in color according to their respective risk classification. The scenarios are thus easy and intuitive to understand.

The physical risk assessment is an innovative and very important step for our industry. On the basis of the data obtained, we can take preventive precautions, make structural changes or, in the most extreme case, even switch sites in a timely manner. We bear particular responsibility as we handle chemicals, which could - in the event of natural disasters due to flooding, heat waves or storms, for example - cause hazards. We also use this information in selecting new sites for our company.

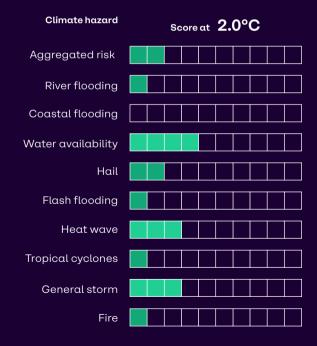


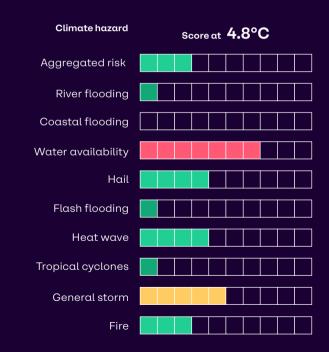


Site example: Memphis, Tennessee (USA)

For our site in Memphis in the state of Tennessee in the USA, higher risks are evident in a 4.8° C global warming scenario for the year 2050. Compared with the other scenarios, climate change manifests itself in particular in the form of heat waves and the availability of water.

Climate hazard	Score at	1.5°C
Aggregated risk		
River flooding		
Coastal flooding		
Water availability		
Hail		
Flash flooding		
Heat wave		
Tropical cyclones		
General storm		
Fire		





Savvy climate protection: our carbon management program

We want to emit no more greenhouse gases by 2045 and all of our own processes shall be carbon-neutral by 2025. We want to contribute to limiting global warming to 1.5°C in accordance with the Paris Agreement. These are two of Brenntag's ambitious climate protection targets. With this in mind, we are getting creative: Our carbon management program sets incentives for our companies around the globe to save more CO_2 and provides an innovative approach to steering the entire company toward net zero.

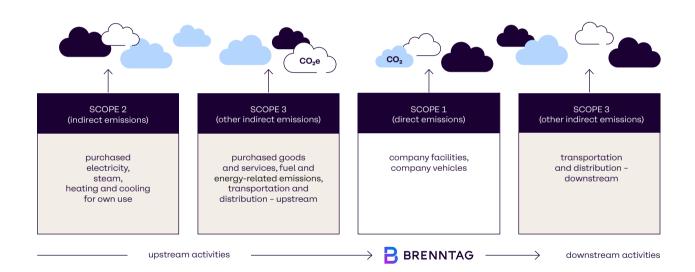


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Taking responsibility for actions within one's own sphere of influence and setting incentives - that is one of the central ideas behind the carbon management program. Each year under this program, Brenntag's own Sustainability Council sets a virtual, intracompany price for CO₂ emissions (Scope 1 and 2) that is used to translate each company's greenhouse gas emissions into internal costs. This steers the transformation toward low-emission business practices, as the higher the price, the higher the incentives to save emissions. The Group-wide total calculated using the carbon price is paid into a climate protection fund, from which the companies, in turn, are provided with a budget for new carbon-saving projects.

New project ideas

Each year, Brenntag companies can apply by submitting carbon-saving projects; a prize from the climate protection fund is on offer for the best ideas. With the help of these rules



Last year, 16 sites worldwide had applied for this type of internal funding by submitting the project ideas they had developed for cutting greenhouse gas emissions, and eleven of those sites were selected by the Sustainability Council. By purchasing electric cars, electric trucks and the related charging infrastructure or installing heat pumps, the companies not only wish to reduce their carbon footprint: The shift in vehicle, heating or air-conditioning technologies associated with these measures is a catalyst for change. Our site in Traun in Austria is even aiming to complete the switch to being a zero-emissions site in the next few years.

Keen interest

As the total volume of applications in the first year exceeded the budget, a jury made up of members of the Brenntag Sustainability Council ultimately set additional criteria for the award. "The applications exceeded our expectations," explains Vice President Sustainability Brenntag Group Andreas Kicherer, who goes on to say: "In the end, the Council selected projects that are significant drivers of our zero-emissions strategy and promote innovation, build experience or initiate a culture of change within Brenntag."

The use of electric trucks is one example. Above and beyond the technical innovation, the Brenntag teams gain experience around the range and possible uses of heavy-duty electric vehicles. This paves the way for innovative distribution. The companies also enable the transition from older pool cars to modern electric vehicles. Employees who use these cars gain their own experience of e-mobility, become familiar with the benefits of this technology and contribute to a cultural change within the company and ultimately within society.

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We are very much relying on the inventiveness of our Brenntag colleagues to propose innovative and locally tailored projects. The high application rate is a clear sign of this initiative's success!"

Anne Troost

Shift-Salt: in search of an alternative to sodium

Whether as an ingredient, a preservative or a flavor enhancer, salt is contained in almost all foods - but often in high concentrations. Despite physicians' warnings, salt consumption in many European countries is more than twice the recommended maximum daily intake. On the Shift-Salt project, Brenntag in the Netherlands has joined forces with business partners to research solutions for a more sustainable and healthier intake of salt.





Salt consumption in Europe is often far in excess of the maximum amount per day recommended by the World Health Organization (WHO). On average, Europeans consume between nine and 19 grams of salt a day, well above the maximum of five grams recommended by the WHO. This is alarming, as excessive salt consumption increases the risk of life-threatening diseases such as hypertension, cardiovascular disorders and kidney disease. The WHO estimates that up to 2.5 million deaths could be prevented every year if salt consumption were cut to the recommended level.

At the same time, though, salt is also essential. Not just directly for the human body, where it plays an important role in digestion and bone formation for example, but also for our expectations with regard to how dishes taste. Reducing salt in foods can therefore result in extra salt ultimately being added in copious amounts on the plate - and thus yet more salt entering the body: "Salt content has a direct impact on the acceptance of foods. Salt is a flavor enhancer and so plays a central role in how foods taste. If the food industry does not add enough salt to dishes, we know that consumers add extra salt - which often has the negative effect that more

salt is used than originally intended," explains Stéphanie Pretesacque, Innovation & Application Director - Nutrition EMEA at Brenntag.

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Stéphanie Pretesacque

Sodium

Sodium is an essential nutrient that is required in the human body to maintain plasma volume, for acid-base balance, to transfer nerve impulses and to keep cells functioning normally. However, an excess of sodium can increase health risks, including high blood pressure. Sodium occurs naturally in a large number of foods, such as milk, meat and shellfish. It is often contained in large quantities in processed foods such as bread, artificially preserved meat and crisps, but also in sweet snacks such as biscuits and in spices. In addition, many people consume sodium in the form of monosodium glutamate, which is used as a flavor enhancer, for example in soy sauce. However, monosodium glutamate also occurs naturally in large quantities in parmesan, tomatoes, grains, meat and fish.

Platform for exchanging information along the entire length of the value chain

Reducing salt in foods is no small task. Rather, it requires innovative solutions to improve long-term consumer health – without impairing the taste of the foods. For this reason, Wageningen University and Research in the Netherlands launched the Shift-Salt research project, in which numerous well-known companies are involved. Together with the project partners, Brenntag provides ingredients expertise that can be used on the project. In addition, Brenntag can make a number of food products in its innovation and application center in Loosdrecht, thereby enabling the researchers to gain further valuable insights for the project.

Shift-Salt's intention is to develop technical solutions with the aim of reducing the sodium content of foods. For the actual problem with table salt – the technical term for which is sodium chloride – is the sodium. Shift-Salt also intends to investigate how consumers make decisions about reduced-sodium products in the supermarket and foster acceptance of those foods. The research project focuses on soups and sauces, as these make up a significant portion of basic foodstuffs in Europe.



healthy lifestyle."

Three-year plan for responsible salt consumption

The Shift-Salt project started last year, with the focus on recording the current state of the art. This year, the project was extended to include the development of new strategies to reduce salt and sodium in foods with the aim of initially developing healthier sauces and soups. The next activities will center on understanding consumers, as it is important to find out why products with an excessively high salt content often land in their shopping basket. Shift-Salt is also working on a digital manual on salt reduction in soups and sauces.

"It's very inspiring to be part of an innovation-driven project team that combines the strengths of its industrial and academic members to address a shared and simple goal: to enable consumers to eat healthier products, and always with enjoyment," says Pretesacque, summing up Brenntag's aoal on this project. ■





Project launch with pilot customers

In 2022, we successfully tested this calculation of the cradle-to-gate carbon footprint with a selection of pilot customers from different industries. The service has since been continuously improved and in 2023 is being made available to a

larger group of customers. Both the scope and the quality of the emissions data are therefore constantly increasing. At the end of 2022, we were already able to show the relevant carbon footprints for around 850 products from our portfolio.

Forward-looking in every respect

The calculation of the CO_2 emissions per product is welcomed by our customers. For an increasing number of product tenders are not just based on service and price components, but also require information on carbon intensity. Based on this emissions data, we have already won a public tender for sodium hydroxide for the production of tap water, where 40 percent of the award criteria were linked to sustainability-related information. \blacksquare



We at Brenntag are constantly trying to improve. As a result, production processes may change and once-important and costly items of machinery and equipment may suddenly fall out of use. In order to still get the most from our equipment, we have developed an internal online data exchange system that allows any operating resources that are no longer required to be transferred to the sites that need them. This more efficient use of our plant and machinery does not just benefit our company. By operating the system, we prevent redundancy and thus conserve our planet's finite resources.

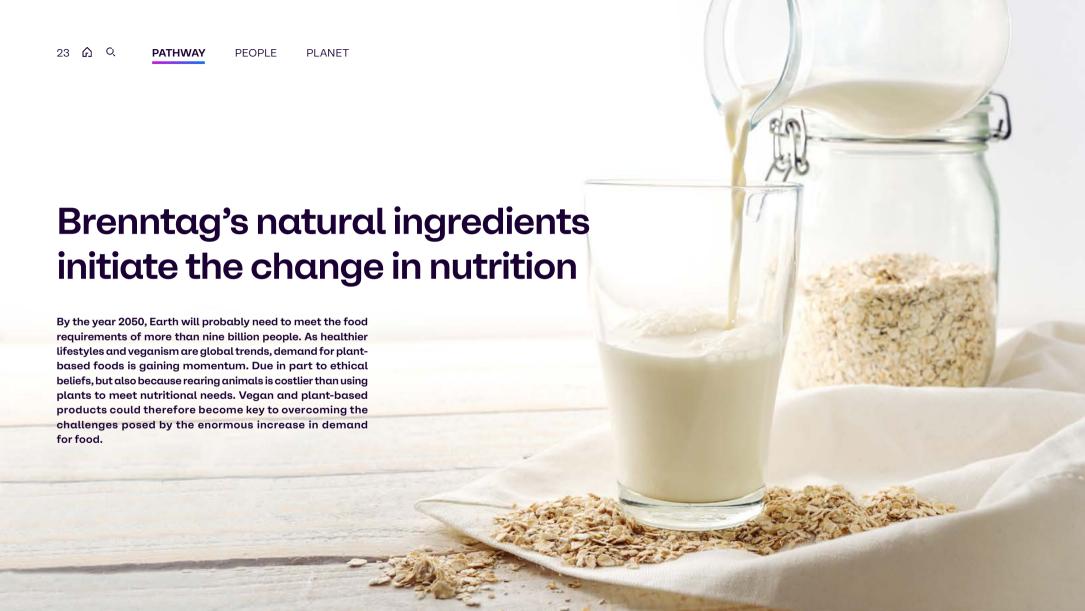


Be it heavy industrial equipment, mixers, tanks, measuring devices or compressors, many items of equipment are essential to our operating processes and are used at a number of different sites, but are not always needed all the time or sometimes even cease to be used at all due to changes to processes. If plant and other items of equipment go unused for a relatively long period of time, it makes sense to make them available to other production facilities. This resource awareness benefits both sites and not least of all the environment. We have therefore built an online data exchange system through which the allocation of redundant equipment can be centrally managed.

This new point of contact also enables equipment to be exchanged across national borders. So that everything goes smoothly when items are exported, the relevant departments are given support, as shipping industrial equipment internationally is no easy task. Import and export regulations need to be observed and external experts, such as the manufacturers of the items of equipment, need to be consulted in order to determine the actual value of the items.

Just how big an impact this program can have becomes clear from looking at the carbon footprint of everyday items in chemical operations: A 40m³ tank for hydrochloric acid produces around 19 metric tons of CO2 emissions during production. So, using these tanks efficiently throughout their entire lifecycle makes a big difference.





So, creating plant-based foods for this market is a rather challenging endeavor. As Ramkumar PS explains: "The texture of the products needs to be just right, otherwise people won't accept them. But at Brenntag, we have experts in our Food & Nutrition department who have the knowledge to create tailor-made formulation and application solutions for our customers willing to take on the challenge."



Our global network of food innovation and application centers

To demonstrate the expertise of Brenntag's specialists, plantbased sausages and an oat-based drink were developed as concept studies to suit the unique market needs. "We presented both concepts at the food industry trade fair in Bangalore and our customers were enthusiastic about the taste and texture as well as the fact that we use all-natural ingredients like pea fiber and protein as well as natural preservatives. We are expecting to see major developments in this food trend in India in the coming years and Brenntag is determined to be the leading provider of the natural ingredients needed as well as a development partner for any new products that our customers want to create," says Ramkumar PS.

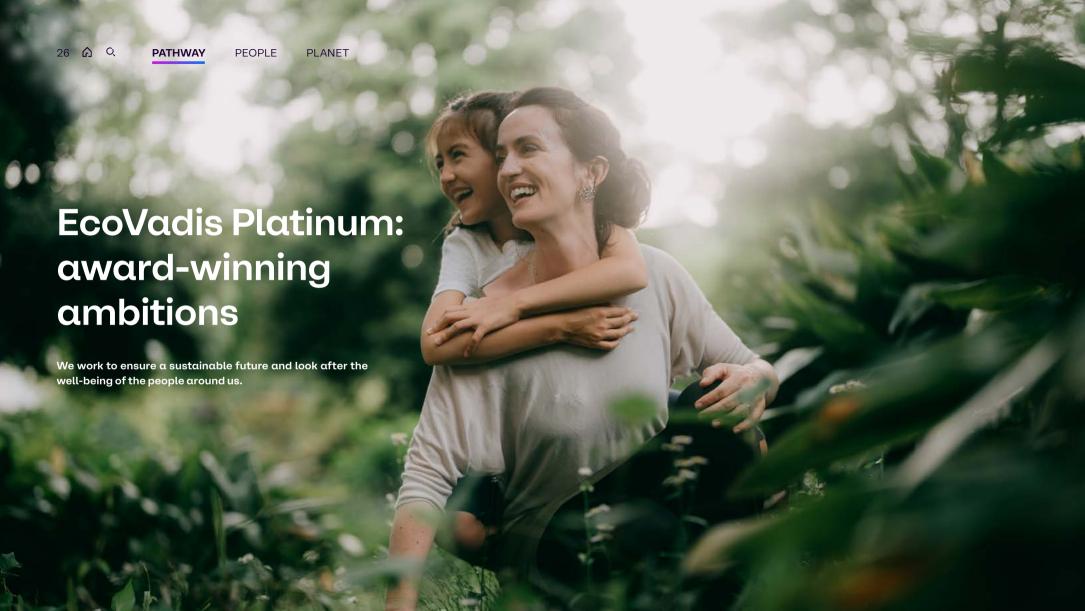
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Ramkumar PS

Brenntag currently operates 32 food innovation and application centers worldwide (two in Beijing, China) that create tailor-made solutions for customers. These centers have in-depth industry expertise in the meat, poultry and fish processing, bakery and bread, dairy and ice cream, beverages, chocolate and confectionary, convenience food, fruit and vegetable processing segments.







Further information:

https://corporate.brenntag.com/en/sustainability/ sustainability-at-brenntag/ratings/

Our advances in sustainability ratings confirm our endeavor to be a pioneer in our industry. EcoVadis Platinum status provides our business partners, investors, media and the wider public with a valuable approach to rating Brenntag on sustainability. Everyone benefits from that."

Henning Brand Group Sustainability Manager



In Spain, for example, we successfully replaced conventional, petrochemical components in cleaning agents with biobased ingredients together with a customer. The gratifying result: Due to the biological base material, the carbon emissions profile is significantly improved, the environmental compatibility is increased and the cleaning effect is much better. An interaction where all sides win.

Sustainable products portfolio



Low-carbon economy

Sust. value proposition: CO₂ emission reduction / compensation

Categories

- Feedstock
- Green energy
- CO₂ compensation

CO₂ footprint as new key value proposition



Safe products

Sust. value proposition: Protection of environment & health

- Improved product labelina*
- Reduced tox. profile*
- Low environmental impact*
- * vs. industry standard

Sustainability solutions



CO₂ management

Sust. value proposition: CO₂ emission management

- Cradle-to-Customer'sgate CO₂ footprint
 - Product
 - Brenntag valueadded services
- Full CO₂ emission transparency for optimization & benchmarkina



Circular economy

Sust. value proposition: Resource efficiency CO₂ emission reduction

- Circular business models
- Chemical leasing & recycling
- Packaging optimization

Customer satisfaction survey:

We have made sustainability a central component of our regular customer satisfaction survey. The result: More than two thirds of the customers, who participated in the survey, are interested in more sustainable products and services. "The result encourages us to further expand sustainable offerings such as the low-carbon product portfolio."

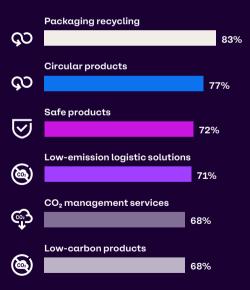
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The result encourages us to further expand sustainable offerings such as the lowcarbon product portfolio."

Wolfgang Edel

Senior Manager Sustainable Products & Solutions

Most of our customers attach great importance to the following sustainability aspects:



People: Fair working relationships around the globe

We are a fair and safe employer. We achieve this by creating a dynamic corporate culture shaped by diversity and continuously investing in our employees' development. We work to ensure that human rights are upheld and protected in our global supply chains. Moreover, our aim is to be perceived not just by our business partners, but also by the communities in which we operate in our regions as a responsible and valued partner - through volunteer service and social commitment, for example.



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Safety First!

Safety is of paramount importance at Brenntag. In this context, we not only care about our employees and business partners, but also assign a central role to environmental protection and nature conservation. Every year, Brenntag presents Global Safety Awards in order to shine a spotlight on the best safety achievements at our sites around the globe and reward the teams for their results. These internal awards foster the safety culture within the company and place a holistic focus on the important issue of safety.



same direction."

For this reason, the company offers two Global Safety Awards within Brenntag: The Safety Excellence Award and the Safety Phoenix Award are presented every year. All operational sites around the globe can apply for these awards. "Ultimately, two sites receive the highest awards. The competition and the signal sent to the entire organization are very strong and show how important safety is to Brenntag," explains Aliaksei Lashuk, QSHE Project Manager for the EMEA region and the person responsible for coordinating the Global Safety Awards. This opportunity is a well-used one. Sites from all regions around the globe take part and submit outstanding



Excellent on safety

In 2022, the Safety Excellence Award went to the Traun site in northern Austria, which stood out by virtue of its exemplary safety performance and has been operating entirely without injuries for just over seven years now. Among other things, the jury were convinced by the extensive safety campaigns peppered with creative visual ideas. "We're accepting this high accolade with pride, humility and respect! It was a long journey from the site that we lost in the terrible fire in 2001 to this prize," concludes Albert Hart, Managing Director of Brenntag in Austria.

For Brenntag's Indian joint venture with Raj Petro, it was likewise a long journey to becoming a recipient of the Safety Phoenix Award. Within a year, a qualified Health, Safety & Environment (HSE) team was initiated at the site. Within the space of just ten months, the experts at the Manali site

in the city of Chennai on the Bay of Bengal developed HSE programs and conscientiously implemented the Brenntag safety standards. This immediately produced results. Between 2019 and 2021 the accident frequency rate and the number of incidents were each reduced to zero. This milestone was achieved by providing employees with extensive training and implementing the Brenntag safety culture.

Learning from mistakes

This culture also includes talking openly about it when something almost happened so that others can learn from these situations. For example, the rate of registered near-misses rose from 1.5 to 4.2 within a year – that does not mean that more near-misses occurred, but rather that awareness, handling and transparency in this context were significantly improved. "It's an honor for the Manali site to receive this award as part of the global Brenntag family. The enormous efforts of the teams, together with the unbridled support of the local and regional management level, are what made this possible," says Sirhans Peshin, Senior Director Supply Chain at the Indian joint venture Raj Petro, in summary.

Safety Excellence Award

The Safety Excellence Award honors the site that delivered the best safety performance in the past year. The standards are very high: The criteria that a site must meet include, for example, a comprehensive safety management system, a first-rate safety performance, proactive safety behavior and joint commitment to establishing a strong safety culture within the team.

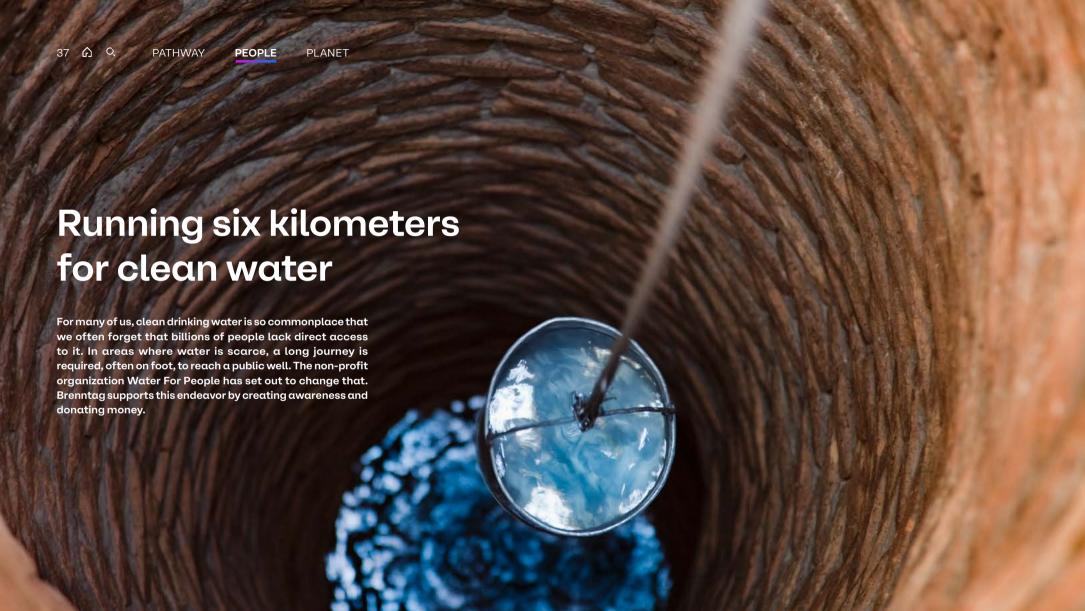


Among other things, Brenntag invested in fire protection at the Manali site. To protect employees, a lifeline system was also installed with a view to improving safety when working at heights, such as when checking a tank fill level. An automatic tank-level gauge system enabled the company to prevent numerous potential accidents. In particular, unintended releases of substances and liquids during transfer from one tanker to another were massively reduced. Sustainability is also enhanced by the new, highly efficient generator that enables an improvement in the filtering of exhaust gases. An important contribution to both greater environmental protection and improved health in the workplace.

Safety Phoenix Award

The Safety Phoenix Award honors the Brenntag site that has shown the greatest improvement in safety and a measurably enhanced safety culture in recent years. This must be achieved through an effective safety program that brings about a sustained improvement in safety behavior and the safety culture among all employees at the site.





Water is a resource that is very unevenly distributed on our planet. While many areas have enough clean water all year round, there are other regions, sometimes even entire countries, where water is so sparse that it becomes a fought-over resource. According to Unicef, four billion people experience at least one month a year when their access to sources of drinking water is extremely limited. Two billion live in countries where the water supply is generally inadequate. And climate change is only making matters worse. According to Unicef extrapolations, half of humankind could be affected by a shortage of water by 2025.

The situation is particularly precarious for women and girls: The long journeys they have to make due to the shortage of water put them at an increased risk of injury and attack, and the enormous amount of time they invest stops them from concentrating on an education or a secure livelihood.

Long-term collaboration for a better water supply

The US non-governmental organization (NGO) Water For People works to enable people to access clean drinking water and toilets. In North America, Brenntag has been an active partner to the NGO since 2018. The effectiveness of the measures, the experience of working with water supply and the proximity to Brenntag's business activities in water treatment were among the deciding factors in favor of this collaboration.

Brenntag's involvement with Water For People also includes actively increasing the visibility of the organization. In 2022, we entered several teams in the World Water Classic. The World Water Classic is a virtual event that is hosted annually by Water For People whereby participants walk or run six kilometers or bike 60 kilometers for a good cause. The six kilometers are symbolic of the average distance that women

and girls in many countries in sub-Saharan Africa have to tackle on foot in order to fetch fresh water for their families.

The campaign week in October 2022 raised almost USD 53,000 in total. Half of this came from participants' sponsors and half was donated by Brenntag. "We were therefore the top team in the World Water Classic. In total since 2018, we have donated roughly USD 500,000," says a delighted Katie Kelleher, Senior Manager Water Treatment at Brenntag Canada, who did of course take part herself. ■

Donations since 2018: about USD 500,000



We're improving the water supply of millions of people

Since last year, our water treatment expert Katie Kelleher has been a member of the Board of Directors of Water For People Canada. The NGO had previously presented her with the Kenneth J. Miller Founders' Award for her exceptional volunteer service. She is committed to improving access to drinking water in developing countries and for Indigenous communities in Canada.



Katie Kelleher Senior Manager, Water Treatment Canada Katie Kelleher: We normally organize two campaigns a year. In spring 2022, we supported a virtual impact tour to Nicaragua, where Water For People provides an insight into its work by video conference. There are interviews with people responsible for the water networks or from the local project schools. The aim of the campaign was to attract donors. Brenntag then doubled the amount raised. This enabled us to collect a total of USD 59,000 last year, for example.

What is the second campaign?

We are also taking part in the World Water Classic, an event in October where participants run six kilometers or cycle 60 kilometers. Brenntag supports its participating employees and, in this case too, doubles the amount donated. In 2022, we collected USD 53,000.

What is your role at Water For People Canada?

I am a member of the Board of Directors at Water For People Canada. We meet every two months and discuss current issues and projects with the aim of fundraising for Water For People in Canada. All the funds raised by Water For People Canada are currently being used to support the country programs in Bolivia. The organization is also devoting more attention to the WASH program in North America, and I am part of a working group on that issue specifically for Canada. Here and in the USA, there is considerable inequality in access to drinking water and Indigenous peoples are disproportionately affected.

Why did the organization present you with the Kenneth J. Miller Founders' Award?

The prize is awarded to volunteers who have done exceptional service. I believe that I was selected because I raised a large amount of money at the World Water Classic two years in a row. And before I became a member of the Board of Directors.

I worked with two other volunteers on a desktop landscape assessment where we examined Canada's geography and the uneven distribution of drinking water. At the end, we produced an 80-page report that now provides the basis for our work on the Board of Directors with a long-term view to extend resources to the need domestically.

What are your wishes for the future?

We have a champions network to connect our very dedicated people. I think that is awesome. It would be great if we could attract even more colleagues from different areas of our company and in different roles to Water For People. The more people we are, the easier it will become to collect donations and implement projects. Together as one Brenntag team, we can thus achieve even more and improve the water situation for millions of people.

In the past, there have already been a number of local, regional and global initiatives at Brenntag to address diversity, equity and inclusion (DE&I). At the beginning of 2023, Brenntag recruited DE&I expert Julia Pedersen as Global Director in order to take this important issue further forward and put the measures and projects on a firm, common foundation. She is now developing a comprehensive strategy for the company.



Julia Pedersen: Many people can conjure a picture of diversity, as it's about variety: in terms of gender, disability or ethnic origin, for example, to name a few. People bring this variety to the company where they work. The multitude of different perspectives has been shown to significantly increase the innovation potential for developing new products and services. So, companies benefit enormously when they place emphasis on diversity. In the case of equity, there's a need for caution, as many people think that the 'E' stands for Equality, i.e. equal treatment. Equity goes beyond that, however, and means equality of opportunity. So, it's not about treating everyone equally, but about enabling everyone to have equal opportunity, such as access to education and training, for example. We identify and systematically break down conscious and subconscious barriers that hinder this equality of opportunity at Brenntag. Inclusion denotes the culture that it takes to enable diversity. Only when people of different social and demographic identities feel heard, valued and supported do they engage in the best way possible and share their perspectives. Inclusion therefore makes diversity within the company sustainable.

What motivates you to work to advance this issue?

I consider it very important to openly recognize the viewpoints of others and also question already-established views held by the majority in society and regarded as the norm. As a young adult, I lived, worked and studied in South Africa for six years. Just a few years after apartheid ended, not just racism, but also gender issues and LGBTIQ+ - as we now call this set of issues - were highly relevant both socially and academically. That shaped me as a person and kindled my desire to support these issues. I am now the mother of two small children and it's important to me that when they are grown up, they are able to live and work in a more open, tolerant and just world.



Is DE&I a trending topic for companies that no one will be talking about any more in a few years' time?

No, I don't think so. In recent years, the issue has become much more visible - especially in North America and Europe. As regards companies, DE&I touches on a number of areas: job advertisements, teamwork, women as leaders, to name just a few. My role is very diverse; there are touch points everywhere. At the same time, there are many findings from external studies and experiences gained by other companies. We incorporate these in developing the global Brenntag DE&I strategy, just as we incorporate the different experiences from our initiatives, such as the Women at Brenntag program that we have already launched.

What is the situation at Brenntag?

I am pleased that Brenntag has laid solid foundations in many respects over the past few years. Both globally and regionally, there is already a lot of commitment and numerous initiatives. The task now is to combine and extend these different projects and mold them into a global DE&I

strategy from which work packages can, in turn, be created for the individual regions. But in doing so, it's also important not to lose sight of the issues that are sometimes very different regionally and to continually obtain feedback from employees locally.

What change are you aiming for?

We want to increase diversity. For a long time already. Brenntag has been working consistently to increase the percentage of women within the company and back in 2021 undertook to raise female representation across all levels of management to 30 percent by 2030. Secondly, we want to ensure that the talent we attract wishes to stay with us and play an active part. Brenntag has a culture of openness: We listen to one another and learn from one another. This creates the right conditions for an inclusive working environment where everyone can be their 'authentic self' as it is called in the field of DE&I. ■

Brenntag has a culture of openness: We listen to one another and learn from one another."

Julia Pedersen

Global initiative supports the advancement of women

At Brenntag, we work to ensure that our employees are able to grow professionally and develop in line with their personal objectives. In doing so, we place particular emphasis on the development of women. The measures initiated to this end include the worldwide initiative "Women at Brenntag - Global Development Program". Since the program was launched, 239 women have had the opportunity to develop personally and professionally. As an example, two participants report on their personal impressions in our interview.



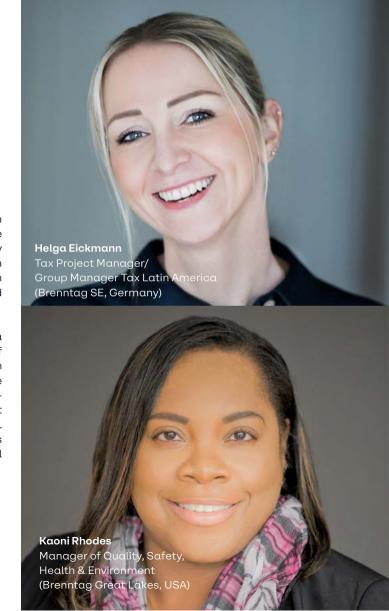
Helga Eickmann: The appeal for me was the opportunity to discuss our day-to-day work at Brenntag with female colleagues around the globe. The program is also a fantastic opportunity to build an international network within Brenntag.

Kaoni Rhodes: I wanted to gain valuable mentorship from an experienced business coach and access to tools developed specifically for women leaders. As I had imagined, the program then taught strategies to build self-confidence, among other things. I also wanted to network internationally to a greater extent and build important relationships with women with similar professional ambitions.

What were your takeaways from the program?

Helga Eickmann: The virtual one-on-one coaching in particular taught me important techniques that are useful for coping with personal challenges in the workplace. In this case, it was very helpful that you were able to set three focal points for the coaching. I chose topics that occupy my time and attention in my work environment and my coach then prepared specifically to support and challenge me in a targeted manner. In the process, I gained some very individual experiences that are unbelievably valuable in day-to-day working life. For example, you are given tips on effective time management, setting manageable goals and communicating better.

Kaoni Rhodes: I learned how important it is to develop a growth mindset that seeks to continually challenge oneself and push boundaries. Having this outlook, I was able to open up to new opportunities and experiences. My coach also gave me many insights into how to achieve a better work/life balance. Of course, there are also situations where self-doubt creeps in. In my coach, I have someone who believes in me. She helped me find ways of dealing with difficult situations and finding creative solutions that provide a successful outcome in the end.



Helga Eickmann: Definitely. It was a very good and instructive experience. It was helpful to discuss day-to-day work situations with the other women on the program so as to gain their perspective. And this interaction always took place in a friendly and often jovial communication environment. I would not want to miss the personal self-reflection in the course of the one-on-one coaching, either.

Kaoni Rhodes: The program offers women an incredible opportunity not only to develop their business skills, but also to reflect on their mindset and their overall approach to work. Participants are equipped with the knowledge and resources they need to better overcome challenges in day-to-day working life. The program also offers a tremendously practical approach: The learnings can be applied immediately, both at work and in your private life. I can recommend getting involved to all female colleagues. ■

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The program offers women the opportunity to analyze their own individual challenges during coaching sessions and to work out starting points for their own further development."

Svenja van Eeckhout

Women at Brenntag -Global Development Program

With an eye toward DE&I, the focus of the program is on the professional development of women. It is intended to help them confidently overcome the challenges in the workplace at the different stages in their career. The program lasts six months in total and includes a world-wide virtual kick-off meeting, three global workshops and one-on-one coaching sessions. To participate in the program, female colleagues need to discuss their own goals with their line manager and then actively apply.





South Africa has a long history of social inequality. The effects of apartheid reverberate to this day: The extremely inequitable distribution of wealth, land ownership and opportunities for advancement continues to mean that the black population are poorer on average than their white compatriots. Brenntag is actively working to drive change towards greater equity in the country. Of the various initiatives supported by the government's B-BBEE program, Brenntag SA works together with the non-profit organization ForAfrika, which supports communities in Africa with regard to emergency aid, water, sanitation and hygiene, food security, economic development, education, health and nutrition. Brenntag SA helps ForAfrika primarily with regard to early childhood development.

For Afrika

Some color, a wealth of ideas and many helping hands are enough to make a big difference. With these creative ingredients, walls can be colorfully decorated, toilets repaired, vegetable gardens created in old tires and thus a broad smile brought to children's faces. Our employees worked

as volunteers for the organization ForAfrika three times in 2022: On the South African public holidays – Nelson Mandela Day and National Women's Day – as well as on the United Nations' World Children's Day, in-kind donations in the form of food, blankets, toys and aid packages were collected among the workforce by Brenntag employees and handed over to the kindergartens. The volunteers put in a great deal of work locally and renovated three kindergartens in Lesedi (Johannesburg), Qampilo (Durban) and Zusakhe (Cape Town). Brenntag intends to get involved again this year so as to continue driving the change that has been initiated.

Further information:

https://www.forafrika.org/



In Canada, the term Indigenous peoples refers to First Nations, Métis and Inuit peoples. These groups are the original inhabitants of the land that is now called Canada. In 2021, over 1.8 million people in Canada were identified as Indigenous, making up 5 percent of the national population. The Canadian Council for Aboriginal Business (CCAB) builds bridges between Indigenous and non-Indigenous businesses and communities through various programs. As a committed participant in the Council, Brenntag has established a strategic partnership with Fort McKay Industrial Solutions (FMIS), a certified Aboriginal business with the Council and a division of the McKay Métis Group, which is owned by the Fort McKay Métis Nation.



The CCAB positions Indigenous business at the focal point for strengthening Indigenous communities, promoting progressive and prosperous relationships, and growing a new economy based on mutual respect and shared prosperity. "Brenntag in Canada is attempting to achieve Progressive Aboriginal Relations (PAR) certification with the CCAB. The certification program validates the performance of and confirms company commitment, success, and impact. Participation in PAR promotes that Indigenous relations are addressed as part of Brenntaa's overall corporate social responsibility, strategy and considered in annual planning and at the strategic level. We are working hard on this, but it's still early days," says Lisa Mattern, District Manager at Brenntag in Canada.

In June 2021. Brenntag in Canada announced that Fort McKay Industrial Solutions (FMIS) would become a long-term distribution partner to create a hub for energy and mining chemicals in Northern Alberta. "It is the first collaboration in this form for Brenntag. Previous partnerships with Indigenous-owned companies have usually been transactional, with no formal agreements or guiding principles. But in Canada, FMIS has become our strategic customer and distribution

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Brenntag in Canada is attempting to achieve **Progressive Aboriginal** Relations (PAR) certification with the CCAB. The certification program validates the performance of and confirms company commitment, success, and impact."

Lisa Mattern

Fort McKay Métis Nation

The Fort McKay Métis Nation is made up of the historic Métis community that originally provided labor to the fur trade in the Athabasca region of what is now northeastern Alberta in the early nineteenth century. Its members have a mixed ancestry that includes French, English, Cree, Dene and Métis heritage with close ties to members of the Fort McKay First Nation. The community draw strength from the positive aspects of their mixed heritage keeping feet in both the Aboriginal and their Euro-Canadian backgrounds. While the fur trade has remained a core part of the community's identity, in more recent years, members have had to manage the impacts, and leverage opportunities brought by the development of the oil sands.

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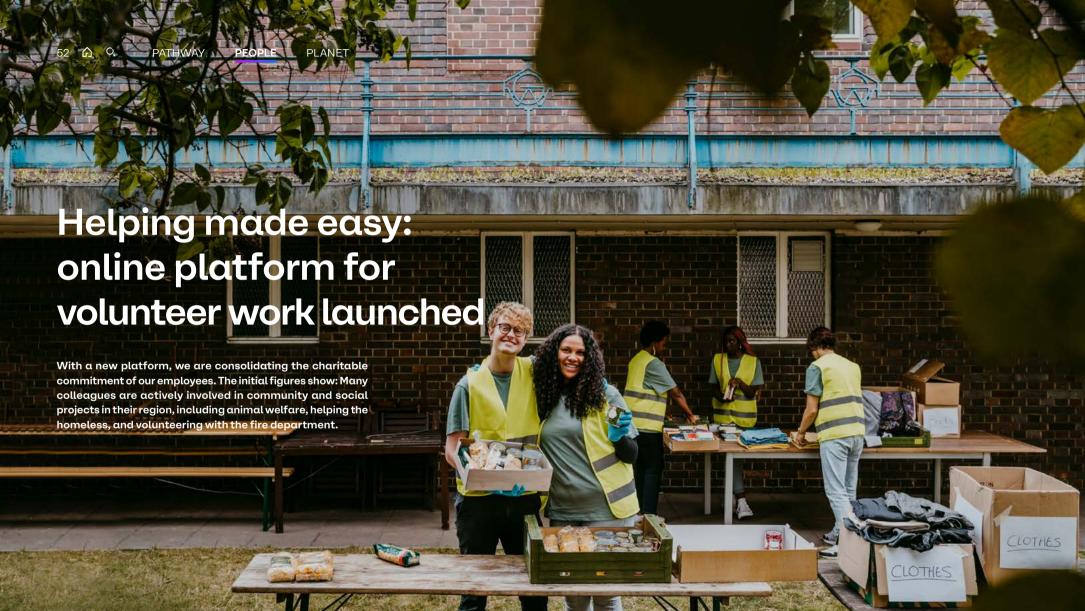
By effectively complementing each other's core strengths and values - FMIS and Brenntag - we were able to portrait a magnificent display of world-class chemical supply program in Canadian Oilsands."

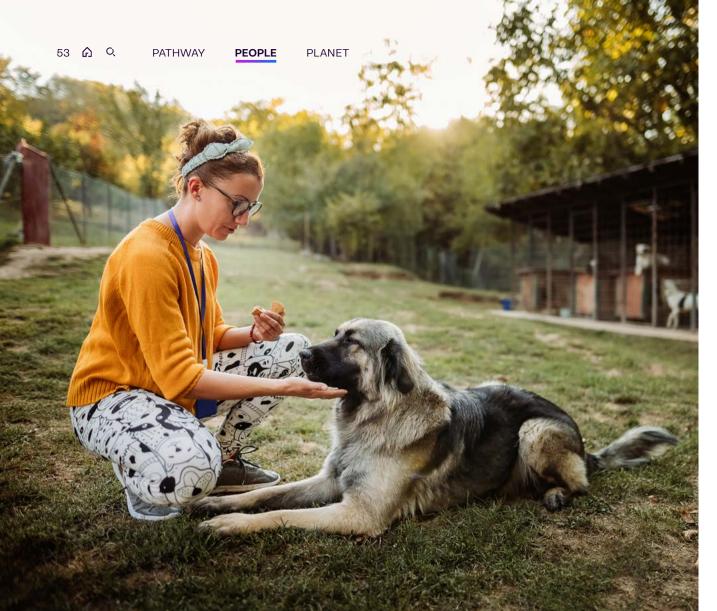
Volkan Celik

partner. This is a great template, not only for our business in Alberta, but for all of our business in Canada," says Martin Jette, President, Brenntag Essentials Canada. According to Volkan Celik, COO to FMIS, "By effectively complementing each other's core strengths and values – FMIS and Brenntag – we were able to portrait a magnificent display of world-class chemical supply program in Canadian Oilsands."

"The implications of this agreement go beyond just business," says Crystal Young, President & CEO of the McKay Métis Group. "It shows the strengths that emerge when business and local communities work together towards a common goal of sustainable economic development. This is game-changing for us, but it is also a tremendous example for Canada."

Though severely threatened, and in certain instances extinguished by colonialism, Indigenous culture, language, and social systems have shaped the development of Canada and continue to grow and thrive despite extreme adversity. The Canadian Council for Aboriginal Business (CCAB) has set itself the goal of reducing these injustices. Since 1982, the CCAB has brought together businesses and Indigenous businesses and communities in Canada, working to improve Indigenous economic empowerment and connect with the 500 participating businesses. Brenntag and FMIS are both members of the CCAB.





In June 2022, we at Brenntag in North America introduced the internal platform Connecting Community. Our employees can use this to find charitable organizations and actively support them by making donations or serving as volunteers. Within six months, a total of 30 different projects in North America had received support. Our colleagues did over 1,500 hours of volunteer service for over 20 different charitable causes, including for animal welfare, social assistance, helping the homeless, and on the volunteer fire service. Water For People also received donations through the platform last year. Connecting Community makes it easier for our employees to actively support good causes. We would like to thank everyone for their commitment and look forward to doing even more for people and nature in the coming year.

Climate protection and reduction of emissions, resource efficiency and circular economy are specified focus areas of our ESG strategy. Our aim is net-zero $\mathrm{CO_2}$ emissions by 2045. As the global market leader, we wish to become the leader in the responsible distribution of sustainable chemicals and ingredients and take responsibility for our actions. We are fully committed to continuously reducing our environmental footprint and increasing our environmental handprint in order to protect the environment. At the same time, we help our customers to achieve their sustainability targets.



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Raw materials shortage in the spotlight: Recycling breathes new life into high-quality polymers

Polymer recycling is often the subject of criticism, as recycling laboriously separated polymers waste frequently leads to lower-quality products and is quite appropriately also termed downcycling. For a long time, this was similarly true of high-quality polymers used in technical applications. But thanks to the expertise of our polymers technicians, it is now possible to recycle them to a consistently high standard of quality. One example is the recycling of reusable thermoplastics from industrial production.



Polymers have their work cut out. Especially if they are technical thermoplastics, as is the case at Brenntag Polymers. They are developed to function reliably in plant and machinery, cars, electrical and electronic components or medical products: as cooling elements with thermal-conducting properties in the engine compartment, under continuous load conditions and yet abrasion-resistant on industrial conveyor belts or as detectable elements optimized for hygiene in the food and healthcare sectors. At the same time, the properties must also be suitable for the different processing methods in the polymers industry. "Increasingly, recyclability also plays a central role in our industry. This attribute is gaining enormously in relevance," says Martin Reers, who as a process engineer at Brenntag Polymers in Ramstein, Germany, advises his customers on everything to do with the development of customer-specific materials - termed 'compounds' - and the manufacture and processing of thermoplastics. "For one to two years now, we have been witnessing a major change in the industry, driven by energy prices and the difficulties in supply chains. Recycling polymers by producing recompounds is becoming increasingly attractive. The word waste has ceased to exist in this context."

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Increasingly, recyclability also plays a central role in our industry. This attribute is gaining enormously in relevance."

Martin Reers



Recompounds for industries of the future

Customer specifications

Brenntag Polymers Germany helps its customers with precisely this ground-breaking change. Combining distribution, compounding and technical support, the company is a highly capable partner to the polymer industry. For high-quality polymers with special properties are needed more than ever: For fields of the future such as innovative mobility, renewable energy or in mechanical and systems engineering, they are irreplaceable.

In order to economize on resources despite the strong demand for thermoplastics, the Brenntag Polymers service portfolio now includes advising customers on developing their own circular economy. "Our customers are keen to use resources responsibly and reduce their carbon footprint," explains Martin Reers. "They also need to save on costs in order to operate competitively."

BRENNTAG Material development Compounding

Compounding

is a technical term used in thermoplastics engineering. It refers to the process of adding different additives to a base polymer in order to improve the properties of the materials and modify them according to the customer's requirements. Additives are fillers and reinforcing materials, such as glass fibers and beads or carbon fibers, which influence the structure and surfaces of polymers. Other additives include chemical substances used to achieve certain properties in a material, such as thermal endurance, abrasion characteristics, color or plasticity. In recompounding at Brenntag Polymers, production residues such as sprues and runners from thermoplastics manufacturing are recycled as a base. These are sorted by type, meaning that the recycled material consists only of one type of thermoplastic. They are then mixed with additives and returned to product development and production.

Products for sophisticated applications

Brenntag Polymers' expertise comes in useful when a desire to cut back conflicts with a desire for quality. As ultimately, only high-quality recompounds become new high-performance products like those needed in technology sectors in particular, such as for lightweight components, battery holders, carrier boards, spacers, casing and covers for e-mobility, as components in heat pumps, wind and solar energy systems or as elements in lighting technology and LEDs. Production residues are used for this purpose and are usually ground at the customer's end. Brenntag Polymers combines this ground material with specific additives to produce a high-quality granulate that is reused in sophisticated applications.

Martin Reers shows the sample of a vehicle light made from a red-translucent, recompounded material. "Our customer is using this to manufacture a product with a complex structure that fulfills very specific requirements - and in the process is saving over half of its previous costs," says the experienced technician, enthusing about the outstanding result. He has

been working in the industry for 38 years already and sees a clear path forward: "Giving thought to recycling valuable materials as early as the product development stage - this is something we help our customers with. In this way, we save on primary raw materials, produce less waste and reduce our environmental impact."

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Our customers are keen to use resources responsibly and reduce their carbon footprint."

Martin Reers

Brenntag Polymers

Brenntag GmbH's Polymers unit offers individual and sustainable polymer solutions as well as value-added services for the thermoplastics processing industry. The Polymers team at the Ramstein site specializes in the development, production and marketing of compounds made from high-performance polymers and engineering thermoplastics. The polymer experts provide customers with differentiated and end-to-end support in implementing customized applications.



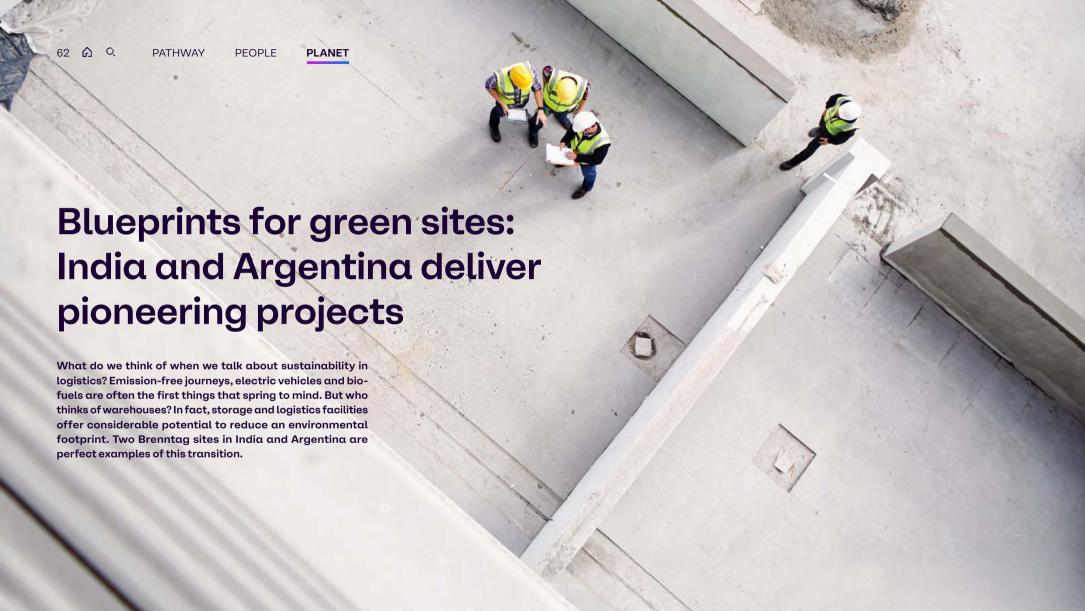
The energy transition on the roof

Last year, we installed solar panels at six further sites around the globe. Through this gradual switch to renewable energy, we are not only meeting our own electricity requirements, but also feeding surpluses directly into the power grid. Thus, our switch to green electricity – which we plan to have fully completed by 2025 – also benefits others. A map shows our progress in expanding solar power generation.

We do not just use the green electricity from our solar power plants to operate our own sites. In Hungary, for example, around eleven percent went into the power grid, as we generated more than we consumed.

With a capacity of almost 600 kW, the solar system on the roof of our site in Kędzierzyn-Koźle, Poland, was the largest to be installed last year. Together with the other new systems in Singapore, the USA, Hungary, Slovakia and Argentina, we have increased our annual electricity production by 1.7 MW to 3.5 MW in total – and by operating solar systems can therefore save around 1,351 metric tons of $\mathrm{CO}_2\mathrm{e}$ a year across all sites. That is as much as would be emitted by driving 9.5 million kilometers in an average car or flying 6.4 million kilometers.





Alok Sharman is delighted. In June 2023, Brenntag's first green warehouse in India will be formally operational in Sonipat, north of Delhi. This is partly thanks to the dedicated Regional Director South Asia and Managing Director India, who has been working at Brenntag in India for just over three years. Good transport connections mean that the whole of northern India can be easily reached from Sonipat. Around 70 percent of Brenntag's customers in North India use the nearby motorway with important links in every direction. The new Brenntag site replaces three existing ones in India, and that too while being more economical overall.

"With the right strategies and ideas, every warehouse can reduce its environmental footprint," says Alok Sharman in firm belief. When the warehouse in Sonipat was being built, the planning phase gave consideration not only to the optimum location in terms of transport connections, but also to sustainability aspects. The walls are specially insulated and the use of natural lighting in the warehouse saves energy. A cleverly thought-out system with natural ventilation ensures that little air conditioning is needed, even in hot India. Using



I see the construction of the green warehouse in Sonipat as a pioneering project. That we urgently need environmentally aware companies is also made clear by the poor air quality in the metropolitan areas. Brenntag shows what is possible here. Others can take their cue from it."

Alok Sharman

solar panels, power is not only generated for Brenntag's own use, but can also be fed into the local electricity grid for offsetting purposes when the electricity generated exceeds the site's energy requirements. A rainwater harvesting system feeds the irrigation system on the site, where planted trees and green spaces will provide pleasant outdoor areas for employees and improve the micro-climate around the building. In every detail, thought was and continues to be given to resource conservation and materials that are environmentally friendly and recyclable.

Intelligent solutions wanted

So far, so exemplary. But can a warehouse that was built with the focus on sustainability aspects also meet high economic and safety requirements? That was one of the most important questions for Alok Sharman during the planning process. "Our new warehouse in Sonipat is only minimally more expensive than a conventional one. But, in turn, it meets all of Brenntag's high standards for safety, quality and, in particular, sustainability," says Alok Sharman, explaining his project's success. "Behind that, there are ideas, intelligent solutions and a lot of planning work." During this process, the Managing Director received support from corporate headquarters in Essen as well as the regional headquarters in Singapore. He discussed and further developed the plans together with Brenntag's in-house sustainability experts.

The hard work paid off. The building uses at minimum 30 percent less energy than a conventional warehouse and thus raises the bar. For this, it will be the first of the Brenntaa Group's warehouses to receive the independent EDGE green building certification (LEED Gold equivalent). What were the biggest obstacles during planning and implementation? Alok Sharman does not need long to think about it. "The construction time! During the building phase, we had five bans on construction activity imposed by the authorities as a result of the severe air pollution caused by industry, transport and power plants throughout the Delhi region." So, there is an urgent need for sustainable sites.



Think big: On a 90,000 m² site in Zárate, 100 kilometers north of the capital, Buenos Aires, Brenntag has consolidated four former Argentinian sites into one. The renovated offices extend over an area measuring 500 square meters and the storage facilities over an area measuring 2,000 square meters. The site is home to tanks with a capacity of around 1,250 cubic meters, three unloading spaces for tankers, two drumming stations, a mixing and blending (M&B) building and sustainable energy sources, which provide 50 percent of the total energy consumed on the site. The aim of this consolidation was initially to optimize operating processes. But the project management in Argentina went a step further and took the opportunity to turn the large site into a flagship sustainability project at the same time.

Rethinking and learning

Experience had already been gained on a small preliminary project in Añelo, Argentina. "In 2018, we had built a warehouse on a site without any power or water supply," recalls the Sustainability Manager for Latin America, Mercedes Quiroga, who reports on her experiences of the success story: "A situation like that requires a rethink: toward renewable



All waste produced during the construction phase was separated and, where possible, recycled. In all new processing areas, an underlay was installed to effectively prevent soil contamination. In the context of optimizing processes, consideration was given to minimizing forklift traffic when selecting the site layout. And an interesting incentive for imitators: In total, the investments required for sustainability amounted to just three percent of the overall amount invested.

gg

I'm very proud of the fact that we designed the site in Zárate with a view to sustainability as well. This is a pioneering model in Latin America. This experience should be an inspiration for the entire region."

Mercedes Quiroga

During the construction phase and subsequent commissioning in Zárate in 2022, we:



prevented **7,800** kg of CO₂ emissions





When it comes to sustainability, many people think of the big picture: forests, oceans, endangered species. But a more sustainable approach can also make a big difference in the case of what are sometimes the smallest building blocks of life, enzymes. Brenntag is working together with Swiss company INOFEA, which has developed a technology to protect enzymes during processing in chemical production. This means, for example, that in the best-case scenario, pharmaceuticals can be manufactured without any environmentally harmful substances and using less energy.



For this reason, chemical catalysis is often used to speed up chemical reactions. Traditionally, metal catalysts such as aluminum oxide, platinum or rhodium are frequently used. They can withstand high temperatures and pressure. However, this method has several disadvantages: The metal catalysts are toxic, can only be separated and recycled with difficulty, and must be used under extreme conditions in order to perform well. Metal catalysts are not specific for a particular type of reaction and therefore produce by-products that have to be removed.

"The collaboration with INOFEA is a unique one for Brenntaa: None of our other business partners offers such a specialized and customized service in the field of biocatalysis. Added to this is the innovative approach to handling enzymes, which allows us to offer a solution that can help pharmaceuticals manufacturers to achieve their sustainability targets. Enzymes are fundamental components of life which, thanks to this technology, can also be used in the harshest chemical reactions. With this service, we want to demonstrate that, by making small changes, we can improve reactions and turn them into more sustainable processes," says Catarina Gil Forte, Head of Industry Market Management, Synthesis and Biopharma, at Brenntag EMEA.

Biocatalysis

Biocatalysis is a process that uses enzymes to start, speed up or control chemical reactions. They are used to this end in manufacturing drugs such as insulin. But the production of beer, wine or cheese is also based on biocatalytic processes in bacteria, yeasts or fungi.



To move beyond metals as catalysts, Brenntag is working with INOFEA. The Swiss biotech company has developed a process to give immobilized enzymes a polymer protective shield. As a result, the enzymes can not only carry out the reaction in difficult conditions, as they are less sensitive to fluctuating pH values or temperatures. They can also be reused, as they are not inactivated during the reaction and can easily be recovered.

For use by pharmaceuticals companies, the enzymes and their protective shield need to be developed individually and according to the end application. Although this initially leads to higher costs, these can be offset by the gains in efficiency and reusability. In each application, reactivity remains high enough across several production cycles. At the same time, energy costs fall, as lower temperatures can be used, unlike in traditional catalysis. And in the best-case scenario, no harmful waste is produced because no metals are used.



PLANET

Bees are essential to an intact environment: They ensure biodiversity and are among the most industrious pollinators. The United Nations estimates that of the 100 most important crop species, 71 are pollinated by bees. Most of the crops grown in the EU depend on pollination by insects such as bees. By establishing several bee colonies at two sites in France, Brenntag is also giving the black-and-yellow workers a safe habitat.



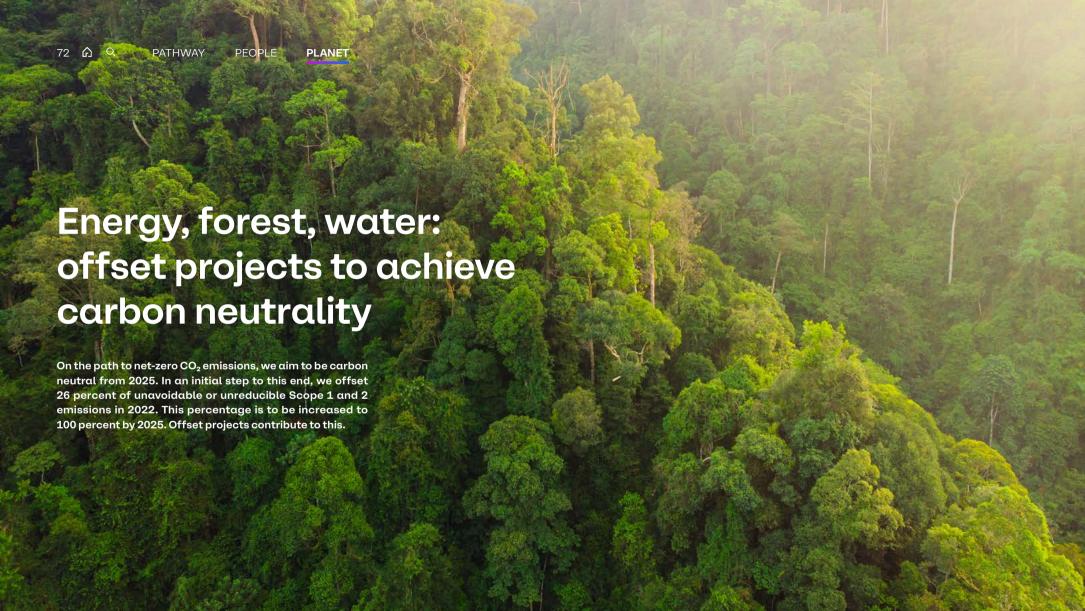
In recent years, beekeepers have seen an unusually sharp decline in bee numbers in countries such as Belgium, Switzerland, Germany, the Netherlands and France. Intensive agriculture, attacks by pests and climate change are placing an enormous strain on bee colonies in Europe. In France alone, roughly 30 percent of a colony's bees die every year, compared with roughly five percent a year in the past - a trend that is attributed primarily to climate change and the intensive use of agricultural land.

Our colleagues in France therefore wanted to do something and suggested installing beehives. "By installing beehives, we can make a small contribution to preserving bees, more and more of which are disappearing due to deforestation and insecticide use. However, bees play a significant role in plant pollination, agricultural production and thus ensure food security," concludes Pascal Defours, who is in charge of the Andance site. "Beekeeping and daily monitoring of the bees teach us patience."

The Brenntag sites in St. Herblain and Andance are now home to a total of five beehives. They were installed in March and June 2022 after Brenntag employees completed a workshop hosted by professional beekeepers. The insects are cared for both by the beekeepers and by Brenntag employees themselves. In Andance, where there are four beehives, the hard-working insects have produced around 35 kilograms of honey. Brenntag subsequently distributed the honey to the beekeepers who take care of them, colleagues at the site and customers.

"The beehives show that chemistry and nature can co-exist," says Anne-Marie François, who is responsible for Brenntag's sustainability projects in France. "The bees illustrate our two values safety and care. They also help us to achieve our sustainability goals."





In the province of Lampung at the southern tip of the Indonesian island of Sumatra, we are supporting the construction of a geothermal power plant on the Ulubelu project. The heat from the underground geothermal reservoir produces steam, which sets a turbine in motion and drives a generator that produces clean, renewable electricity for the country's Sumatra interconnected grid system. The project also contributes to Indonesia's sustainable development. By investing in the region, the project creates jobs and boosts the local economy. Energy security is also improved, as this is an inexhaustible source of energy.

In Brazil, we are supporting a project to protect forests in the state of Amazonas. These are of vital importance, as they are home to a large number of unusual species and absorb greenhouse gases. The municipality of Apuí is situated in a corridor of particular environmental value that is protected by the project. The aim is to curb illegal logging and unplanned deforestation, partly by training people in sustainable forest and land management. By maintaining the species-rich landscape, the project effectively reduces emissions, keeps the carbon stored in the trees and enables the forest to absorb more CO_2 from the atmosphere.

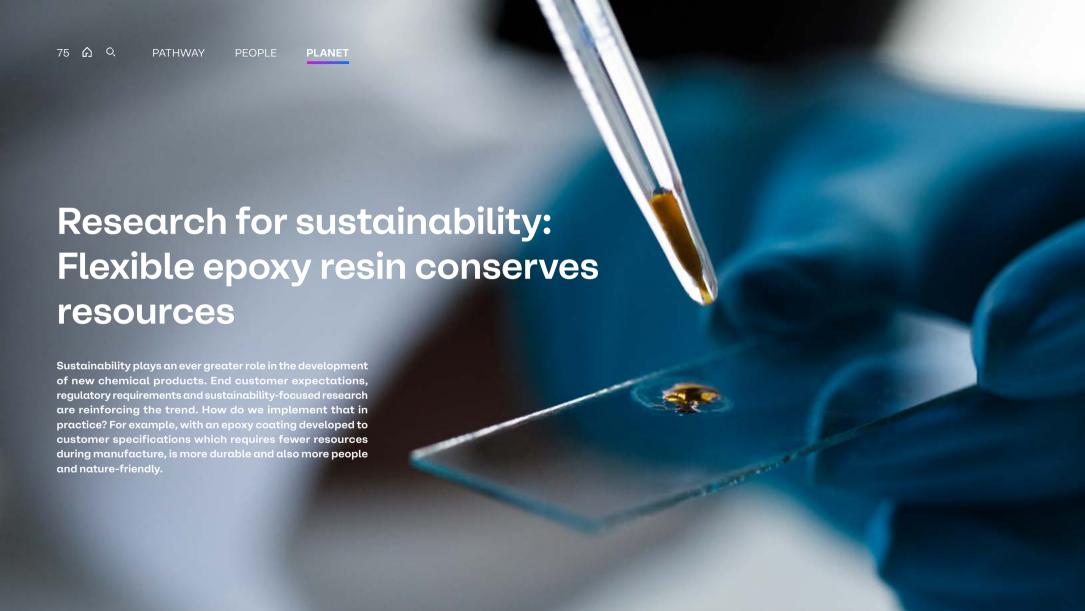
More than seven million people in the East African country of Uganda have no access to drinking water. Poor people have to spend a considerable portion of their income to buy clean water. As a result, water is boiled by burning biomass from native forests. The forests come under pressure, the emissions from the fires cause environmentally harmful greenhouse gas emissions and people's health is damaged as a result of inhaling the fumes and particulates.



Clean water for all

We are taking part in a project that distributes chlorine dispensers to communities throughout the country for the purpose of treating water. This chlorine-dosing system consists of a dosing device and a regularly topped-up supply of chlorine. To use it, the members of the community go to their normal water source, place their bucket or canister under the dispenser, turn the valve in order to add the appropriate amount of chlorine and then fill it up. This relieves the pressure on the surrounding forests and reduces water-related gastrointestinal illness in the communities.





Flexibility makes epoxy resins more durable

In collaboration with a customer company, Senior Chemist Jesse Walker at our lab in Allentown, Pennsylvania, identified a new, complementary technology that improves the flexibility of an epoxy coating. The benefits: It is more durable and therefore protects materials for longer. "With the higher quality, we reduce the resources we need to protect a machine from wear and tear throughout its lifecycle. That pays off in terms of sustainability, as our epoxy coating now means that we are conserving not just machinery, but resources as well," explains Walker, who directed the research into the new product.

To investigate the new approach, Jesse Walker worked closely together with customers and suppliers. His many years' experience as a chemist helped him in this. His approach was to demonstrate the original product's potential compatibility with a particular surfactant so as to improve flexibility and adhesion. After several research experiments in the lab, he made a breakthrough and achieved the desired properties. The product is 30 to 50 percent more flexible and has shown

Epoxy resins

Epoxy resins are synthetic resins that become thermosets after being mixed with a hardener. After curing, they have good mechanical properties and are very resistant to other chemicals and temperatures. They are used, among other things, as adhesives, casting resins, in the manufacture of rotor blades for wind turbines, as protection against corrosion or as circuit board materials.

Sustainability and an improvement in the product were just two factors in the development process. Jesse Walker also thought about user safety: "It was very important to me to integrate flexibility into a synthetic resin and at the same time make it safer to handle. In our research, the focus is not just on commercial success, but on user safety as well." The new product therefore also meets high requirements placed on chemicals: "Much of my work involves reducing VOCs. Regulations ensure that the market makes more conscious choices. Both end users and manufacturers expect chemical products with as few VOCs as possible. We also aspire to make continuous improvements in producing such materials," says Walker in summary.

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It was very important to me to integrate flexibility into a synthetic resin and at the same time make it safer to handle. In our research, the focus is not just on commercial success, but on user safety as well."

Jesse Walker



Where sustainability puts down roots

Forests perform a unique service for the global climate: They absorb carbon dioxide, emit valuable oxygen and are among the most diverse ecosystems on our planet. They provide food and shelter for animals, fungi and insects. However, this is only true of intact forests where trees and plants are able to grow without human intervention. But many former woodland areas have been destroyed by human use. Brenntag supports projects where these trends are being reversed and forests are being revitalized.



In several regions, we are actively engaged in ensuring that forests are protected and biodiversity is restored. For the need for action is considerable: Worldwide, only about one in five forests is in its original state. Large areas are being cleared for commercial use. Due to the pressures of housing development and climate change, the number of natural forests is declining with each passing year. Around 15 billion trees are felled or destroyed annually.

In order to make a contribution, since 2019 Brenntag in the Benelux region has worked together with the Dutch non-governmental organization (NGO) Trees for All, for example, which is active in several countries. In the space of 20 years, Trees for All has already implemented more than 100 projects in places such as Ghana, Vietnam, Costa Rica and Mexico. A project in Uganda involving the reforestation of rainforest was successfully completed with Brenntag's support in 2021. Brenntag supports the NGO by providing one tree for every five successfully completed customer surveys measuring satisfaction with our products and services.

The Trees for All projects are not just purely (re)forestation projects. People in the local area are involved in the projects.

Through training and work placements, they take on the long-term care of the new woodlands created in this way.

"One of the reasons why we decided to partner with Trees for All is because it's not just about trees, but about the local people as well. We are supporting a peat swamp forest project on the Southeast Asian island of Borneo, which brought on board local partner the Borneo Nature Foundation. The organization takes on the training of the volunteers, who themselves collect seeds in the forest, grow new seedlings in nurseries and then plant them in the forest," explains Irina Kochanowicz, Service Excellence Manager, Brenntag in the Benelux region. The forestation project on Borneo is also about taking care of orangutan habitats and plant species that are important to the ecosystem.

It is a long-term commitment: Brenntag has signed up to the tree-planting project for at least the next three years. Besides the renaturing on Borneo, a forest in the Netherlands is being restored to its natural state, again with Brenntag's support. To this end, local tree and plant species are being introduced. These then provide habitats for butterflies such as the white admiral, birds such as the yellowhammer, and

Brenntag forest in Spain and Portugal: Customers are part of the project

In cooperation with a different organization, Brenntag is also promoting sustainable reforestation on the Iberian Peninsula. Along the Asturian coastline in northern Spain and in the Portuguese municipality of Malveira near the capital, Lisbon, there are two woodland areas where local tree species grow. Chestnuts, ash trees, cork and Aleppo oak trees, privet and hawthorn are all native to this part of the world. The aim of the reforestation project is to help restore the ecosystems in the areas.

To achieve that aim, there is still a lot that has to happen. Planting native tree species is just the start, as Belén Iglesias Vidal, Service Excellence Representative in southern Europe, knows: "Increasingly, our customers want to work with suppliers that believe in sustainability and are as environmentally aware as Brenntag. The tree-planting on behalf of our customers was a success and we received a number of compliments because our customers realized how very committed we feel to sustainability. Planting a tree that gives the planet oxygen on our behalf is something that pleases all of us and therefore our customers, too."

Together, Brenntag teams in Spain and Portugal developed the model and took care of project financing. In doing so, they worked together with experts from Bosquia, a regional environmental organization that promotes reforestation. The environmental experts have been taking care of the regions in northern Spain and Portugal for many years. Each tree planted is visited repeatedly by Bosquia over a period of

four years so as to ensure that it is healthy and growing. The commitment is not limited to the Iberian Peninsula, Because the projects there have been so successful, Brenntag expands its reforestation initiative with a forest in Italy.

The trees planted on behalf of Brenntag customers have already put down roots and will now grow for many years to come, removing CO₂ from the atmosphere in the process.

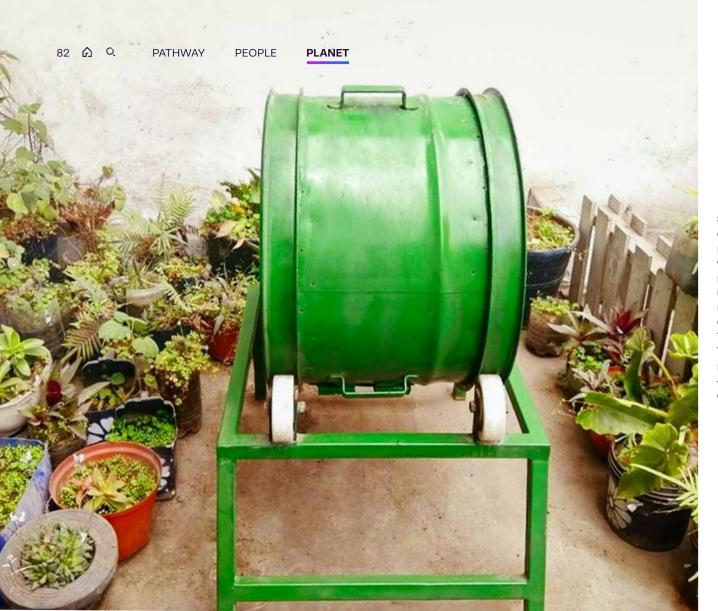
Increasingly, our customers want to work with suppliers that believe in sustainability and are as environmentally aware as Brenntag."

Belén Iglesias Vidal

The Brenntag team in Peru does the soil a good turn

Fertile soil is a scarce resource. So, the organic substances from which it is formed are valuable. For this reason, the Brenntag team at the site in the Peruvian capital of Lima launched a composting project.





Since 2021, all organic waste produced at the site has been collected and proficiently composted by the employees. The result: high-quality compost. The first year of composting was extremely successful: Through the measures, the employees reduced the amount of organic material that ends up in landfill. In its role as a soil improver, the compost also reduces the use of inorganic fertilizers. The employees are allowed to use the nutrient-rich soil for their private gardens. The site's customers also benefit directly from the new skills: The compost team pass on their knowledge in virtual composting seminars. A small project drawing huge interest: 46 companies from Argentina, Bolivia, Chile and Peru have already taken part in one of these seminars.

Issuer

Brenntag SE Sustainability Brenntag Group Phone: +49 201 6496 2117

E-mail: sustainability@brenntag.de

Contact

Brenntag SE Sustainability Brenntag Group Nadine Kolter

Phone: +49 201 6496 1569

E-mail: sustainability@brenntag.de

Design

MPM - Part of RYZE Digital Mombacher Strasse 4 55122 Mainz, Germany Phone: +49 61 31 95 69 0 E-mail: info@mpm.de Internet: www.mpm.de

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