ARKEMA INNOVATIVE MATERIALS FOR A SUSTAINABLE WORLD

INNOVATIVE

2023 Annual and Sustainable Performance Report

CONTENTS

In the sports supplement that accompanies this report, you'll learn about Arkema's involvement in the world of sport and why our Group is a key player in this sector.

GENERATIVE INNOVATION. Some visuals included in this annual report were generated using AI, exploiting advanced algorithms. This way of harnessing AI allows us to create images that would be virtually impossible to produce using traditional methods. As well as being more efficient, this approach brings significant innovation to the creative process, demonstrating AI's ability to revolutionise visual production rapidly and with sophisticated results.

EDITORIAL

"In business, as in team sports, we can only make a difference when we work together."

2023 was a challenging year: in a complex macroeconomic environment, Arkema managed to stay on track, adapting to lower demand, persistent inflation and geopolitical tension. Looking back, I can pinpoint several reasons for our success.

First, the relevance of our strategy to develop high-performance materials and contribute to solutions for a more sustainable world.

Then there are our technological, industrial and commercial strengths. These are underpinned by our innovation, our significant international industrial expansion, carefully selected acquisitions and the complementary nature of our three materials science businesses.

Above all, I believe that what drives us forward is the unwavering commitment of Arkema's employees and their determination to work together to achieve our goals. I am personally convinced that in business, as in team sports, we can only make a difference when we work together. We must work with businesses, governments, local authorities and wider society to make progress and take effective action in the current climate emergency.

When everyone uses their talents to contribute to the common good in a spirit of cooperation, we achieve great results. That's what we do at Arkema, both at an individual level, by giving everyone the autonomy they need to express themselves and act with confidence, and at the collective level, by uniting the teams of our various product lines around our One Arkema culture.

We also work collaboratively through our partnerships with public research institutes and startups, and through our corporate philanthropy initiatives that support a more inclusive society and shared values. I am very grateful to our people for cultivating this collective spirit on a daily basis. Let's protect it: it is our greatest strength.

THIERRY LE HÉNAFF,
Chairman and CEO of Arkema

IN THEIR OWN WORDS

Thierry le Hénaff answers questions from seven employees.
A selection of employees from different backgrounds—customer-facing, production or administration; senior or junior; from different continents—ask our Chairman and CEO about the issues underpinning the Group's sustainable growth.

“After an excellent 2022, our sales and EBITDA are down. However, you are aiming for EBITDA growth to between €1.5 billion and €1.7 billion in 2024. How do you intend to achieve this?”

› JOSÉ
Safety and Environmental Protection Manager, Mollet plant, **Spain**

THIERRY LE HÉNAFF —
Let's remember that in 2022 our results were exceptional in a favourable macroeconomic context. In 2023, the economic environment changed significantly, with weak demand in many markets and destocking by our customers. Despite the complex economy, I want to highlight how well we performed, thanks to our agility and the dedication of our people. Our EBITDA of €1.5 billion—with a 15.8% margin—is obviously lower than in 2022, but it stands out from the competition thanks in particular to the resilience of certain businesses such as adhesives and performance additives, and more generally to the increased demand for value-added solutions for the energy transition.

In 2024, our visibility of the external environment remains limited. We will continue to focus on factors we can control. A number of new projects will help improve our financial performance. Capacity expansions for Sartomer and Kynar® PVDF in China and for Pebax® elastomer in France are starting to bear fruit. We are in the process of commissioning the hydrofluoric acid plant at Nutrien in the United States, and our new polyamide 11 plant in Singapore is due to come on stream early in the second quarter. We will also benefit from the start-up of 1233zd, a new-generation fluorinated speciality used in building insulation foam and battery thermal management, in the US in the second half. In addition, the volatility of the macro-economy means that we must remain vigilant in managing our costs and cash flow.

>>

The aim of the new 2024-2028 strategic plan is to accelerate organic growth, driven by sustainable development. We are midway through 2024, can you give me some specific examples that will contribute to this growth yet?

› MOLLY
Procurement Director
South Asia, **Singapore**

THIERRY LE HÉNAFF —
You're right, opportunities linked to sustainable development have been at the heart of our growth for years. This is the very essence of the Group's strategy. Around the world, awareness is growing of the need to preserve natural resources, reduce CO_2 emissions and invest in low-carbon energy sources.
The companies that will succeed are those that have anticipated this, and that is exactly what we have done by profoundly transforming our technology portfolio over the last fifteen years through our acquisitions and our industrial and research investments. We have identified five target markets linked to these sustainable trends on which we are focusing all our efforts: green energy and electric mobility, advanced electronics, sports, energy-efficient buildings, and health (water filtration, medical devices and nutrition). These markets will drive most of our growth. We expect them to grow by around 12% per year between now and 2028, well above the 3% to 3.5% forecast for growth in world output. These markets, which account for 15% of our sales today, are expected to represent 25% by 2028. To move faster, we need to strengthen the synergies between our three segments focused on materials science. We are the only company that combines three areas of expertises: creating new materials or replacing traditional materials with more sustainable alternatives, bonding them, and protecting them. Our One Arkema approach allows us to boost development opportunities for these three competencies.

Arkema's innovation strategy requires a significant mobilisation of resources to create new sustainable solutions for our customers. What are the main applications you are focusing on in the coming years?

› MARYNA
Director of Sales Europe
for static molecular sieves, **Poland**

Following the SBTi's endorsement of our 2030 Climate Plan targets, which should help limit global warming to 1.5°C, Arkema announced at the end of 2024 that it is aiming for net zero by 2050 (90% reduction in scopes 1, 2 and 3 emissions). Can you tell us more about that?

› HUGO
R&D Water Treatment
Engineer, Genay plant, **France**

THIERRY LE HÉNAFF —
First of all, we should be proud of our 2030 Climate Plan, which is one of the most ambitious in the chemicals industry.
For now, we are focusing our decarbonisation efforts on the medium term, announcing a 48.5% reduction in greenhouse gas emissions from our operations (scopes 1 and 2) between 2019 and 2030. On paper, these numbers are a bit abstract, but believe me, for a manufacturer like us, they represent a lot of work!
This will involve major investments such as the €130 million recently announced for our Carling site in France. More widely, we will invest €400 million to decarbonise our sites by 2030. For our energy purchases, our strategy is to expand the supply of green electricity around the world, which today allows us to get 27% electricity from renewable sources. We will be signing a lot more of these contracts.

Lastly, in scope 3 (upstream and downstream of our own activities), we aim to significantly reduce our greenhouse gas emissions by 54% between 2019 and 2030. We are working closely with our suppliers to encourage them to reduce their emissions, and we are creating partnerships with our customers to offer them solutions that help reduce the carbon footprint of their products.

At our last Capital Markets Day in 2023, we announced our ambition to achieve net zero by 2050, which will require a 90% reduction in greenhouse gas emissions across our entire value chain, covering scopes 1, 2 and 3.Arkema's people are starting to think about how to achieve this very significant reduction and offset the remaining 10%, but it is too early to go into detail about what can be done.

THIERRY LE HÉNAFF —
The key to R&D is to focus on the evolving needs of our target markets. Our aim is to maintain a range of solutions and materials that offer our customers real differentiation in terms of performance and sustainability.
Take two examples from the green mobility sector. In the growing market for green hydrogen, new needs are emerging both for its production by electrolysis and for the manufacture of tanks for fast and safe loading and unloading. Our choice of technologies enables us to address these needs very precisely. Another example: our wide range of solutions and materials for the production of existing and future batteries gives us access to the entire value chain: upstream with the extraction and refining of metals, downstream for the development of batteries that require new materials, coatings and adhesives, right through to the recycling of the materials contained in the battery. The "One Arkema" approach is essential in order to make all our expertise available to the players in these markets.
Of course, we must also remain at the forefront of developments in other technologies driven by sustainable development: lighter materials—especially recyclable composites, bio-based materials, processes that use less energy and generate fewer emissions, and recycling. There is a figure that proves our R&D efforts are focused on the right issues: 90% of the patents we file each year have tangible benefits for sustainable development.

>>

Artificial intelligence is developing at a very fast pace and has the potential to reshape our world. What steps is Arkema taking to be at the forefront of this technology and keep abreast of potential developments?

› **EDUARDO**
Marketing Manager, Consumer & Construction Bostik, **Brazil**

THIERRY LE HÉNAFF —
You are right to ask this question because AI is a tidal wave that will have a profound impact on some, if not all, of our businesses! However, AI in the broadest sense is not new to Arkema. For example, statistical modelling has been used in industrial and R&D applications for decades, and predictive machine learning models are being developed in R&D to speed up researchers' work.

Since the end of 2023, generative AI—i.e. that generates content based on Large Language Models or LLMs, one of the best known of which is ChatGPT4—has started to spread the use of AI to all businesses. For us, this has accelerated the launch of new projects. For example, developing a search engine using generative AI to facilitate and accelerate patent monitoring for R&D. This means millions of patents can be evaluated at the click of a button, while keeping queries confidential. This project is an important milestone as it involves building a scalable platform that can work with all types of LLMs and be reused for other types of documents. We will be giving Microsoft 365 Copilot licences to a panel of users to test the potential of generative AI behind apps in the Office suite. For our websites, we will trial augmented chatbots with generative AI for our visitors to improve the customer experience and increase efficiency. There are so many other examples that I can't possibly list them all. All this may seem complex to you as employees, which is why we are launching a training programme to familiarise ourselves with AI and promote initiatives already underway in the company. One thing is certain: we won't miss out on these technologies that will revolutionise the way we work.

What are Arkema's targets in terms of employee retention? The latest Arkema Cares survey shows that we have an opportunity to improve our performance in terms of empowerment. Have we drawn up any plans for action in this area?

› **BRANDY**
Production Manager, Clear Lake plant, **US**

THIERRY LE HÉNAFF —
Your question gives me the opportunity to reiterate one of my strongest beliefs: it is the commitment and loyalty of our employees that makes Arkema special.
We clearly have a common mindset that is one of the cornerstones of our success. Our employee turnover rate, which is half the industry average, reflects our employees' strong attachment to the company.

Our most recent engagement survey in 2023 reconfirmed this. 77% of employees said they were fully committed and 79% would recommend the company to others. These results are higher than the benchmarks.
I can explain this with a number of factors. Firstly, in addition to high levels of remuneration, as a company we are recognised for promoting the values of support, inclusion and wellbeing in the workplace. This is a concrete reality at our different sites. French Capital Magazine's recent list of the 500 Best Employers of 2024, in which we placed third, confirms this. It is a French ranking, but there are other international lists like Forbes and the Financial Times which also rate us very highly. But even if our employees feel good at Arkema, we still need to make progress, and internal surveys give us useful pointers.

In particular, empowerment is the ability of all employees to have the right level of autonomy within the team, to feel they can help the Group achieve its strategic objectives at their level, through their actions and decisions, and to have the confidence to express themselves and make suggestions. Our internal engagement survey identified this as an area for improvement. Thierry Parmentier, Arkema's Senior Vice President Human Resources, has asked for a review of this issue, which should result in a number of proposals.

I am sure that we will be able to bring all the Group's talents together behind the areas that need work. There is a sincerity and a spirit of cooperation within the Group that gives me confidence that we are moving in the right direction.

Arkema encourages us to explore agile, cross-functional and cross-cultural careers. Could the uncertain global economic environment have an impact on career development? How can we better support talent in international and cross-functional mobility?

› **ECHO**
Head of Business Sport & Lifestyle Performance Polymers, **China**

THIERRY LE HÉNAFF —
Indeed, knowing how to retain and nurture talent today is critical to a company's future, all the more so in the current context of "near full employment".
At Arkema, our talent managers around the world work closely with the Group's senior management to support each employee in their growth, identify their aspirations and assist them at different stages of their career and when they transfer or change jobs. Don't be afraid to go to your career manager and tell them about your dream to develop or change your role. Be bold! We are a group with more than 200 businesses and a presence in over fifty countries. There are plenty of career opportunities!

The current economic climate doesn't change that—there is no right or wrong time when it comes to career development. A career is built over the long term, and we are keen to offer our talented people a wide range of prospects to help them progress and expose them to different challenges and experiences. I encourage both business and geographical mobility throughout a career.

When it comes to international experience, we develop talent through expatriation, which enriches employees' skills and experience to support their individual growth, but also through the global dimension of numerous projects that enable employees to travel and operate in a multicultural environment while remaining in their country of origin. ■

€9.5 billion
revenue

15.8%
EBITDA margin

Operations in
55 countries

Ranked
1st to 3rd
worldwide in our core businesses

151
production plants
worldwide

21,100
employees

Around
2,000
employees recruited
per year

A GLOBAL INDUSTRIAL GROUP WITH BALANCED REVENUE STREAMS

NORTH AMERICA
37%
of revenue
44 production sites

EUROPE
34%
of revenue
60 production sites

ASIA AND REST OF WORLD
29%
of revenue
47 production sites

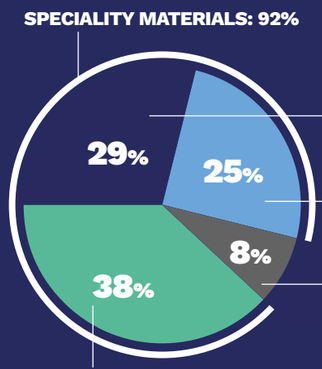
Arkema's objective is to achieve revenue of nearly

€12 Billion by 2028

with an ebitda margin of approximately

18%

ACTIVITIES IN 3 MAIN DIVISIONS AND 6 BUSINESS UNITS



Adhesives:
- Construction & Consumer
- Industrial adhesives

Coating Solutions:
- Coating resins
- Coating additives

Intermediates

Advanced Materials:
- High Performance Polymers
- Performance Additives

SPECIALITY MATERIALS ACCOUNT FOR 92% OF OUR REVENUE.

INNOVATION IS AT THE HEART OF OUR BUSINESS

2.9%
of revenue
is dedicated to R&D

1,800
Researchers

4 cross-disciplinary sustainable innovation themes

Lightweighting and materials design

Bio-based materials and materials obtained through biosynthesis

Circular economy

More efficient and sustainable processes

More than 200 new patents in 2023, over 90%
of which concern sustainable development

OUR

MATERIALS

AT THE HEART OF GROWTH MARKETS

1. CONSTRUCTION

OUR ADHESIVE AND COATING SOLUTIONS DRIVE ENERGY EFFICIENCY, SUSTAINABILITY AND QUALITY OF LIFE

Arkema expects construction revenues to grow by more than **10%** per year on average between 2024 and 2028

Adhesives, sealants, paints and varnishes, insulation, coatings and rheological additives… Arkema is developing a broad portfolio of solutions for the construction industry that respond to the main market needs: more sustainable materials for energy-efficient buildings with a low carbon footprint that are healthy and comfortable to live in.

The building sector accounts for over 30% of global greenhouse gas emissions and is a focal point for decarbonisation, sustainability and resource and energy optimisation. Today, it is a key contributor to solutions to environmental and climate challenges. Arkema has long been at the forefront of these challenges. It has made sustainable construction one of the cornerstones of its innovation strategy, through Bostik, a major player in adhesives, sealants and gaskets, and through Coating Solutions for paints and varnishes (see infographic pages 24-25). Construction is Arkema's largest market, accounting for 31% of its revenue.

Bostik solutions for waterproofing and insulating buildings

"Bonding and waterproofing solutions for trade and retail now account for almost half of Bostik's business, with revenue of around €1.25 billion," says Sophie Fouillat, Bostik's Strategy and M&A Director. "With our extensive portfolio of solutions, we are positioning ourselves as a global partner for construction and renovation in Europe and North America, as well as in Asia, one of our development priorities."

In this fast-growing sustainable construction market, in which each region has its own needs and specificities, Bostik's solutions help improve the watertightness, thermal insulation and energy efficiency of buildings and reduce their carbon footprint. "To meet the challenges of circularity and the increasing scarcity of resources, we are committed to offering solutions that incorporate a growing proportion of bio-based raw materials, such as our new superglue made from a castor oil derivative for the retail market (see page 37), and solutions that facilitate recycling, such as our brand new Rebond System for removing and recycling end-of-life resilient flooring," adds Sophie.

Coating resins and additives for decarbonisation

For Coating Solutions, a major player in paints, varnishes and coatings, the need for decarbonisation has a crucial quality of life factor. "These days, we can spend around 90% of our time inside buildings, at work or at home," says Julie Haevermans, Strategic Marketing Director at Coating Solutions. "In addition to the reduction of volatile organic compounds, a major trend driven by regulations, our offer is structured by the search for formulations that combine visual appeal, excellent durability, the use of raw materials from renewable or recycled sources, and the reduced consumption of resources and energy in production and application." This stance is reflected in one of the most comprehensive portfolios of solutions in the world: solvent-free for factory-applied powder and UV/LED technologies, waterborne resins for wall paints, protective coatings for wood or metal cladding, coatings for reflective roofs, etc. A wide range of functional additives completes the range. Incorporated into resin and paint formulations as well as Bostik's own adhesives, they optimise durability and application behaviour.

Lastly, in response to the need to reduce the carbon footprint of the construction industry, Coating Solutions has seen a significant acceleration in the range of products made from renewable materials, with mass balance certification (see box opposite) being widely adopted at its plants. This is a strong trend for a leading materials manufacturer working for a more sustainable construction industry!

>>

Mass balance products: ACCELERATION OF COATING SOLUTIONS

The mass balance approach, or the ISCC's "bio-attributed" label, makes it possible to attribute a percentage of bio-based or recycled raw materials or materials derived from waste recovery to a resin or additive through a certification process. This approach provides another route to decarbonisation that complements the traditional approach (whereby the bio-based content is fixed and separated in production). Arkema Coating Solutions has made this a key focus for the development of its sustainable offering. "In 2024, our mass balance offering will extend to UV resins for timber floor varnishes, powder resins for metal cladding coatings and some functional additives," explains Julie Haevermans, Strategic Marketing Director for Coating Solutions. "We are in the process of decarbonising all our technologies and aim to become the most comprehensive and global provider of this type of solution." The bio-attribution portion can be up to 100% and can be adjusted to suit each customer's needs. Mass balance certification, awarded by the independent body ISCC+, is obtained for an industrial site. The Group plans to extend it in the short term to all Coating Solutions technologies in Europe, the US and Asia.

SUSTAINABLE BUILDING SOLUTIONS FROM FLOOR TO CEILING

→ **A coat of white paint based on Encor® Flex acrylic resin** with a topcoat of Kynar Aquatec® PVDF is an ideal combination for cool roofing, a viable **eco-friendly alternative to air conditioning** (see below).

→ **Fibreglass insulation boards** incorporate a safer acrylic resin binder to replace current materials and will soon be available in a biomass balance version:a high-performance solution for **keeping heat** in.

→ **Bostik solutions for indoor applications** are **free from toxic materials** beyond regulatory requirements: water-based sealing foam (0% isocyanate, 0% polyurethane), tin-free silicone seals, adhesives for bio-based flooring free from solvents and volatile organic compounds.

→ **Bostik butyl sealants** provide **waterproofing for roofs and gutters** with exceptional durability and weatherability.

→ **Bostik's Climatherm® system** offers an integrated solution for **improving building insulation,** encompassing the insulation board, reinforcement mesh, underlay and finish coating. The technology has been approved for the highest insulation standards in the United States (ECO and Green Deal).

→ **Synaqua® decorative paint resins** contain **high levels of bio-based materials** ranging from 42% to 97%. Derived from plant biomass, these formulations also have very low emissions of volatile organic compounds while providing the best finish in terms of look and feel.

→ **The Reafree® range of powder resins, which are partly made from recycled (PET) and/or bio-attributed materials (mass balance),** are basic components of paints and varnishes and provide **long-lasting protection for surfaces** exposed to moisture.

→ **Bostik adhesives and mortars** meet the most stringent specifications for **floor preparation, tiling, laying a wood floor or fitting a carpet.**

→ **Sartomer photocrosslinkable resins provide long-lasting protection for wood floors against scratches and scuffs.** This highly energy-efficient industrial UV application process for a solvent-free solution is now carbon-free (mass balance).

→ **Ethacryl™ rheology additives,** which improve the dispersion of cement particles, reduce the amount of water needed to prepare one cubic metre of concrete **by 30% to 40%.** They are also used in the manufacture of plasterboard.

ARKEMA

>>

COOL ROOFS, AN UP-AND-COMING SOLUTION BRINGING TEMPERATURES DOWN

For the fast-growing cool roofing market (white roofs that reflect heat), Arkema combines several value-added layers. From the Encor® Flex acrylic primer to the Kynar Aquatec® topcoat, this is a high-performance solution that eliminates or reduces the need for air conditioning.

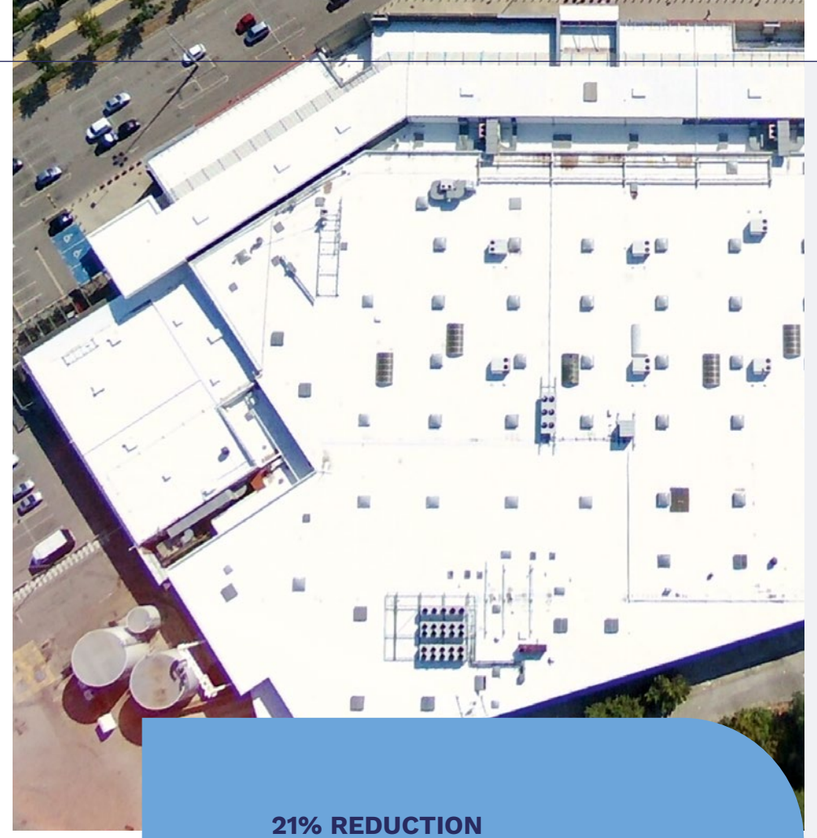
Cool roof applications are currently growing at 100% per year. These reflective white coatings that lower the temperature on the roofs of buildings—large commercial spaces, warehouses, homes, airport terminals—significantly reduce the need for air conditioning when the air heats up outside. Supported by public authorities in many countries, cool roofing is a simple and environmentally friendly response to an increasingly urgent need in these days of scorching summers around the world: to maintain a comfortable temperature inside buildings while reducing the need for air conditioning and its associated carbon footprint. It is commonly used on roofs and is now also being used on walls and even on some floors, where it helps to reduce albedo, i.e. the ability of the surface to reflect solar energy in relation to that received.

A high-performance multilayer coating

For several years, Arkema has been developing an "all-in-one" solution for this forward-looking market, combining the expertise of its various businesses to offer a combination that is unique on the market. The Group is the only player with both acrylic and PVDF technologies, meaning it can offer the best performance in terms of reflective and thermal properties, application and durability. It combines a layer of white paint made from Encor® Flex acrylic resin, some of which can be sourced from bio-attributed materials (mass balance), with a protective layer of Kynar Aquatec®, a UV-resistant PVDF emulsion that enhances light reflection and extends the whiteness of the roof for several years.

This transparent coating is anti-fungal and cleans itself in the rain (a bit like waxed canvas). It allows the cool roof to retain its reflective properties for more than twenty years with reduced maintenance. Encor® Flex acrylic primer and Kynar Aquatec® top coat both incorporate rheology additives from Arkema to improve their application behaviour and reduce drying time. An elastomeric membrane can also be applied between the surface to be coated and the paint layer to limit water ingress and improve adhesion.

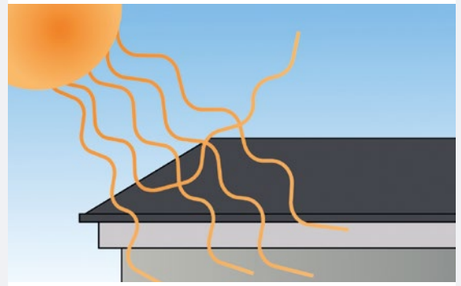
>>



21% REDUCTION IN AIR-CONDITIONING
at Paris-Orly airport

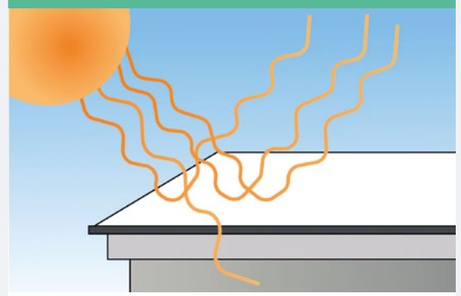
Thanks to this unique combination of value-added materials, Arkema's cool roof offering is now recognised as a benchmark by a growing number of installers. The Group has partnered with Cool Roof France, the French leader in this segment, with numerous products and tens of thousands of square metres of reflective surfaces in France, Europe and West Africa. Thanks to thermal measurements carried out on site on its projects, we can quantify the added value of white roofs. For example, at Terminal 2G of Roissy-Charles de Gaulle airport, the surface temperature of the west wing (with cool roof) was compared to that of the east wing (without cool roof) in July 2018 and 2019: the average difference was 14.8°C (and 24°C on the hottest days). This difference translates into a 21% reduction in the electricity required for air conditioning to achieve the same temperature inside the building. At the Brico Dépôt store in Brive in southwest France, this temperature was reduced by as much as 40% in summer 2021. By improving quality of life while reducing the carbon footprint and electricity consumption associated with air conditioning, there is no doubt that cool roofs have a sunny future ahead of them!

Roof without protective white paint



- Reflects **17%** of rays
- Absorbs **83%** of rays

Roof with protective white paint



- Reflects **88%** of rays
- Absorbs **12%** of rays

More than 30%
energy savings from the reduced use of air-conditioning

GROWTH THROUGH ACQUISITIONS: THE VISION OF A GLOBAL LEADER IN SPECIALITY MATERIALS FOR THE CONSTRUCTION INDUSTRY

Arkema is pursuing a policy of targeted acquisitions to support an ambitious goal: to become the world leader in speciality construction materials, offering a complete portfolio of bonding, sealing and coating solutions in all major regions of the world. Its transactions in recent years, including Bostik's recent acquisitions of Permoseal in South Africa and Arc Building Products in Ireland, and Coating Solutions' acquisition of Polimeros Especiales, have enabled the Group to strengthen its portfolio of solutions and technologies by integrating new expertise, and extend its geographical footprint by acquiring regional players, thereby rounding out its industrial and commercial capabilities in countries where it does not yet have a significant presence.
We review this series of acquisitions.

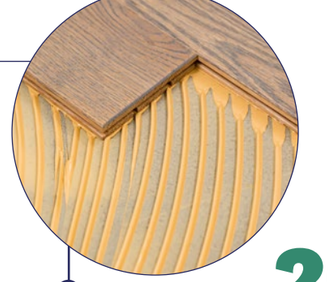
ARKEMA

2016

Bostik acquires **Den Braven (revenue of €350m, 1,000 employees),** the Dutch market leader in high-performance sealants for insulation and construction in Europe. This major deal, with its considerable geographical and technological synergies, marks the start of Bostik's growth-by-acquisition strategy.

2017

Bostik acquires **CMP Speciality Products, which specialises in floor preparation products in the United States (revenue of €15m in 2016).** This extends the Group's offering of complete flooring installation systems and strengthens its position in the US construction market.



2018

With the acquisition of US-based **XL Brands (revenue of $58m in 2017)** and its facility in Dalton, Georgia, Bostik further expands its range of flexible flooring adhesives in the US. These solutions closely complement the company's range of wood floor adhesives, floor coatings and sealants.

2020

Bostik strengthens its position in Northern Europe with the acquisition of **LIP (revenue of €30m in 2019),** the Danish market leader in tile adhesives, waterproofing and floor preparation, with a recognised brand in Denmark, high-quality products and an excellent production unit.

2020

With the acquisition of Italian company **Ideal Works (revenue of €10m in 2021),** Bostik acquires innovative micro-tapping technology for finishing decorative floors. Bostik will support the international development of this cutting-edge expertise.

2021

Bostik adds a new string to its bow in the United States with the acquisition of **Edge Adhesives (revenue of $12m in 2020).** The Texas-based company, which employs around fifty people at its Fort Worth site, specialises in customised industrial adhesives for doors, windows and roofing modules. This is a complementary technology for the Group, which will develop it in the North American market.

2022

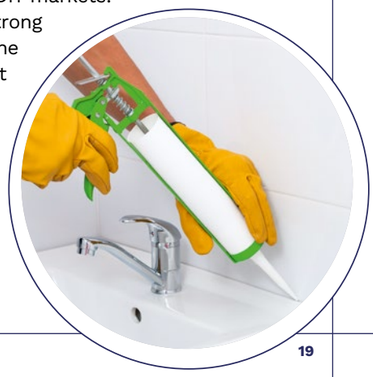
Bostik has set its sights on South Africa with the acquisition of **Permoseal (revenue of €44m in 2021),** a local leader in adhesive solutions forthe DIY and construction industries. This well-known brand has a comprehensive portfolio of sealants and adhesives, making it an ideal asset for Bostik's development in the strong South African market.

2022

Another geographic synergy, this time in Coating Solutions: the acquisition of **Polimeros Especiales (revenue of $40m in 2021, 230 employees),** the Mexican leader in waterborne resins, is part of the Group's drive to increase its production capacity for the North American coatings market.

2023

Bostik's latest acquisition is **Arc Building Products in Ireland (revenue of €15m in 2021),** a manufacturer specialising in waterproofing and bonding adhesives and solutions for the construction and DIY markets. As a player with strong local operations, the manufacturing unit will enable the Group to keep pace with solid growth in the Irish market. ■



2. ELECTRIC VEHICLE BATTERIES

A UNIQUE OFFERING OF MATERIALS, COATINGS AND ADHESIVES

As the electrification of global mobility continues, automakers and consumers are increasingly looking to batteries to make vehicles safer, more autonomous and more affordable. Working closely with major OEMs, Arkema has stepped up to become a supplier of speciality materials that improve the performance of current technologies and pave the way for the next generation of batteries.

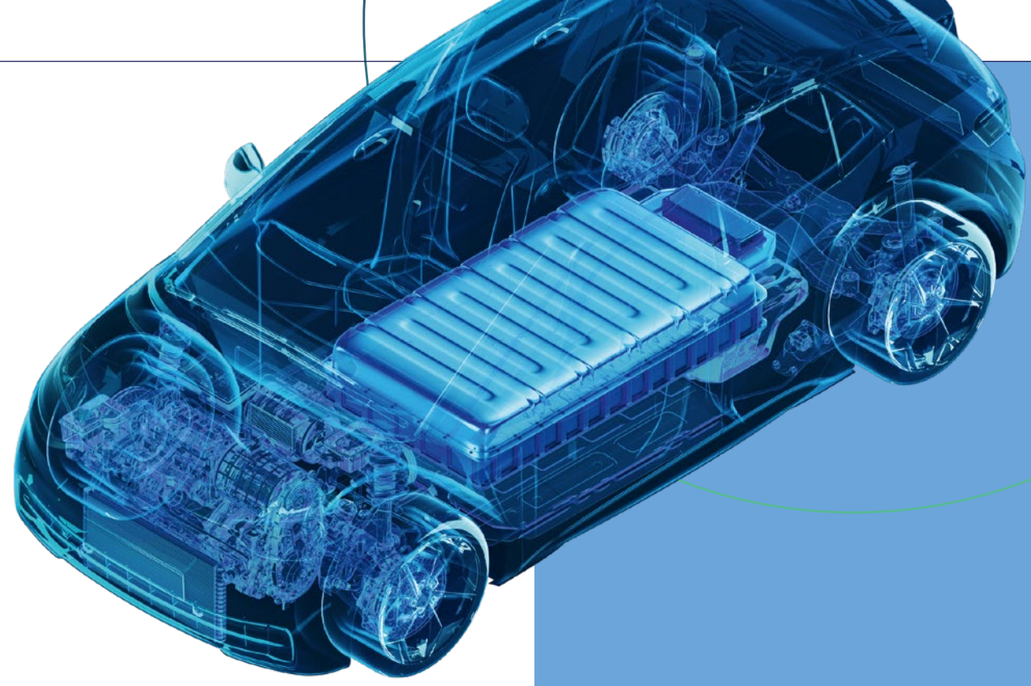
Between 2024 and 2028, Arkema forecasts average annual sales growth of

15%

in the electric battery market.

Between 2024 and 2030, global demand for battery cells could grow by 20% per year, driven by government policies to promote green transport in Europe, Asia and North America. Gigafactories—new-generation battery manufacturing plants—are springing up on all three continents. But the mass adoption of electric vehicles, especially by consumers, remains dependent on price and performance. The global R&D race is on to improve battery cell energy density to reduce charging times and make them smaller and lighter. The key to overcoming these technological challenges lies primarily in advanced materials. Arkema, a leader in this field, identified batteries as one of the key areas of its innovation and investment strategy more than fifteen years ago.

"The Group now has a broad portfolio of solutions covering the entire value chain for lithium-ion batteries, which will remain the dominant technology in the short and medium term," notes Armand Ajdari, Arkema's Vice President Research & Development. In addition to PVDF, a key material for lithium-ion batteries, in which Arkema is the world leader, the Group is developing a wide range of dedicated solutions based on the expertise of its three businesses: high-performance polymers, speciality adhesives and sealants, and coatings and additives (see double pages 22-23).



Solvent-free processes, sodium-ion technology and recycling: one step ahead

This portfolio of solutions is constantly evolving, driven by an R&D strategy and investments (see p. 24) designed to anticipate future needs. "For example, we are developing specific fluorinated and non-fluorinated polymer grades for new solvent-free electrode manufacturing processes, or dry processes, which could be used in the next generation of gigafactories," explains Armand Ajdari.

The Group has long been interested in alternative technologies to the lithium-ion battery. Sodium-ion batteries, for example, could account for around 10% of the world market by 2030, particularly in electricity storage and low-speed vehicles. Arkema recently invested in the start-up Tiamat, a pioneer in this technology, and is bringing its materials expertise to the new ecosystem. Similarly, the Group is working to develop materials (PVDF, acrylics and electrolyte salts) suitable for the "semi-solid" and "all-solid" battery sectors, which could play a role in the future market thanks to their high energy density.

The Group has fully embraced the challenges of battery recycling, which is already of vital importance for the entire industry. "The idea is to recycle materials from the first batteries when they reach end of life, but above all production losses in gigafactories, which can represent up to 10% of the input of certain metals (cobalt, copper, nickel, aluminium, etc.)," explains Armand Ajdari. The Group produces specific grades of hydrogen peroxide, formulated to increase yields in the hydrometallurgical battery recycling process. Last, adhesive solutions developed by Bostik also take account of the need to disassemble battery cells and parts for recycling.

>>

European regulatory framework

SUPPORTING LOW-CARBON ELECTRIC MOBILITY

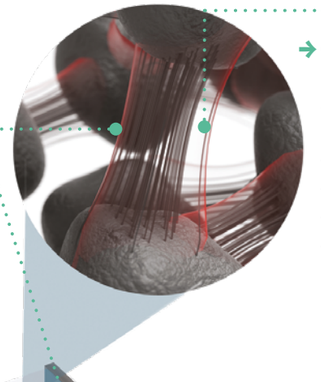
The European regulation on batteries and battery waste came into force in August 2023. It aims to develop a value chain for batteries in Europe, including those used in electric vehicles, and promote a sustainable circular economy. It introduces mandatory sustainability, safety and labelling requirements for the marketing and sale of batteries, as well as end-of-life management and raw material supply obligations. The regulation has a target of 70% of electric vehicle batteries to be recycled by 2030 plus a high metal recycling rate.

VALUE ADDED FROM CELL TO ASSEMBLY

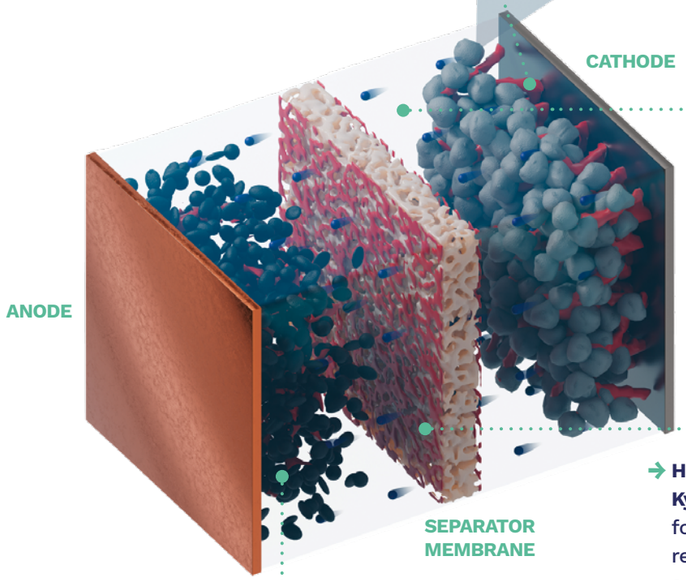
Arkema has a portfolio of leading battery technologies that operates at several levels. In the cells and modules (the “cases” that hold several cell packs) and in the casing (the battery “box” that holds several modules), these technologies help to improve battery reliability and performance and optimise charging time and longevity.

1. WITHIN EACH CELL: IN THE CATHODE, ANODE AND MEMBRANE

→ **Kynar® PVDF,** used in small quantities in the cathode formulation, plays a crucial role as a binder. With high electrochemical stability, it helps active particles adhere to the metal collector during battery charging and discharging. This material is essential in battery performance, where Arkema is a world leader.



→ **Graphistrength® carbon nanotubes,** added in small quantities to the cathode, make it easier for electrons to pass through the cathode to anode, reducing the time required to recharge the battery.



→ **The Foranext® LiFSI electrolyte salt** has the highest ionic conductivity among all lithium salts. Its remarkable electrochemical (>5V) and thermal stability make it an ideal choice to be used as a main salt or additive in batteries.

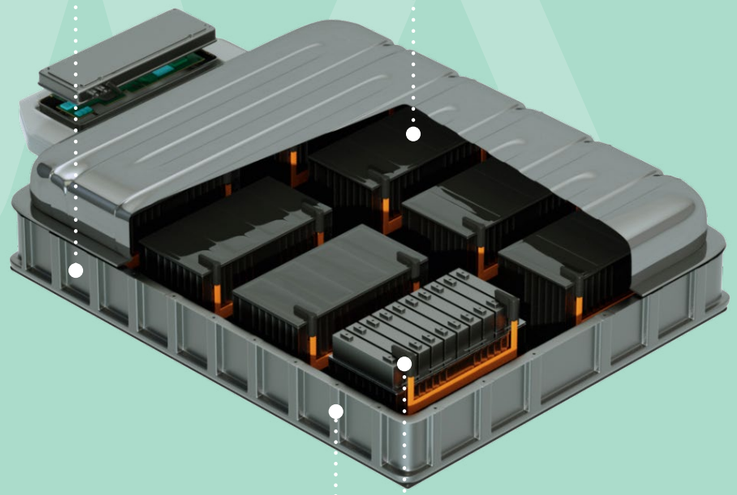
→ **Highly resistant to high voltages, Kynar® PVDF** is a leading solution for increasing the thermal resistance of separators, their adhesion to electrodes and their affinity with electrolytes. Its use significantly extends battery life.

→ **The Incellion™ El range of acrylic binders,** launched by the Group in 2023, allows new-generation anodes (silicon-graphite) to contain more silicon than current styrene-butadiene binders: a future solution to increase battery life (see p.24).

2. WITHIN EACH MODULE PACK... THROUGH TO THE ASSEMBLY OF THE “BATTERY CASE” AND ITS THERMAL MANAGEMENT

→ **Rilsan® polyamide 11 is used by a growing number of manufacturers** to coat the copper connectors that connect the cells, due to its temperature resistance, fire resistance and electrical insulation properties. **Kepstan® PEKK,** which can withstand 500°C for more than five minutes, is a promising alternative for the most extreme applications. And PIAM’s **polyimide films** (see double page below), with their unrivalled electrical insulation properties, will be the solution of choice to reduce the thickness of the insulation for the upcoming increase in battery voltage.

→ **UV-curable resins** from the **Sartomer** range are an emerging solution for the external coating of cells. Their properties of chemical resistance, impact resistance and electrical insulation are combined with a very short drying time, making them highly efficient.



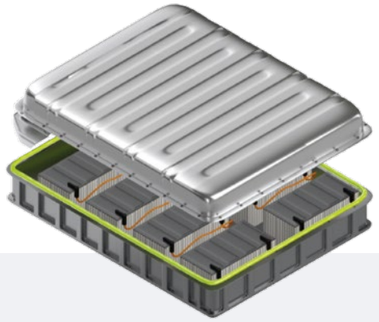
→ **Bostik** develops a wide range of adhesive and insulation solutions for numerous applications in the battery ecosystem: encapsulating electronic components, filling thermal bridges, and assembling and sealing modules and batteries. The thermally conductive adhesives acquired from Polytech PT (see pages below) can dissipate heat while performing the assembly function, making them an ideal solution for battery thermal management.

→ **PIAM polyimide films and varnishes,** with their exceptional electrical insulation, temperature resistance and flexibility, are used in a wide range of value-added applications including battery insulation and assembly, and as insulating varnishes on certain parts of electric motors.

ARKEMA

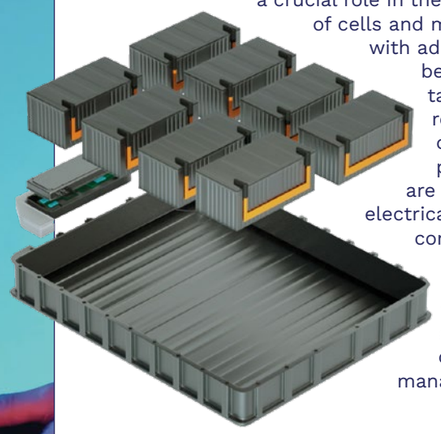
>>

ARKEMA EXTENDS ITS PORTFOLIO THROUGH ACQUISITIONS AND INNOVATION



ACQUISITION OF PI ADVANCED MATERIALS: POLYIMIDE WITH EXCEPTIONAL PROPERTIES

Among the many polymers, polyimide (PI) offers multiple benefits: its extreme heat resistance (up to 500°C), excellent electrical insulation properties, great flexibility and (almost) total dimensional stability. As a specialist in high-performance materials, Arkema has made PI one of its key assets by acquiring Korean company PI Advanced Materials (PIAM), the world's leading producer of PI and the undisputed market heavyweight. This strategic investment will broaden the Group's portfolio of solutions in two of its key markets: advanced electronics (see page 28) and electric mobility. PI is mainly produced in the form of extremely uniform films of different thicknesses. In new-generation lithium-ion batteries, these films play a crucial role in the electrical insulation of cells and modules. When coated with adhesive, they can also be used as an insulation tape for certain assembly requirements. PIAM also offers solvent-based polyimide coatings that are used to protect and electrically insulate various components of electric vehicles such as sensors and cameras, the rotor and stator, and the flexible printed circuits of the battery management system.

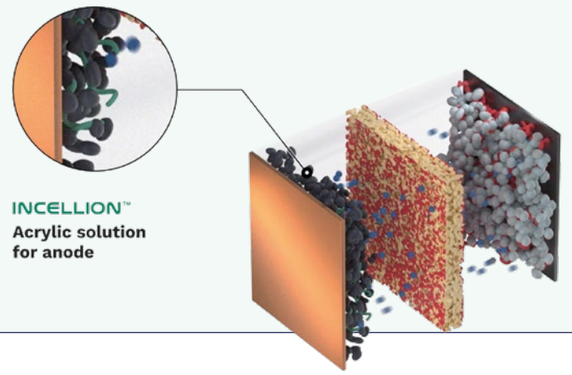


ACQUISITION OF POLYTEC PT, A KEY ASSET FOR HEAT DISSIPATION

The optimisation of battery charging times, a major market trend, is leading to new thermal management requirements: rapid charging causes the battery pack to heat; this heat must be dissipated to ensure that the system functions properly. With the acquisition of Polytec PT in 2023, Arkema acquired a key technology to meet this need. Based at its industrial site in Karlsbad, Germany, the company is a recognised specialist in high-capacity thermally conductive pastes (or gap fillers) used in battery packs. These pastes, which can be easily removed, also make it easier to repair or replace faulty components in batteries, thereby extending the life of the entire battery pack. The integration of Polytec PT into Bostik will accelerate R&D and commercial development in this fast-growing market and should allow Bostik to achieve revenue of around €50 million within five years, mainly in the battery ecosystem but also in value-added applications in advanced electronics (see p. 28).

NEW INCELLION™ ACRYLIC BINDERS: THE NEXT GENERATION OF ANODES

The new Incellion™ El range of acrylic-based binders developed by Arkema Coating Solutions' R&D department meets an emerging need in the lithium-ion battery ecosystem. In cells, anodes are increasingly made of a graphite-silicon alloy. However, the binder currently used for anodes, styrene butadyene rubber (SBR), limits the proportion of silicon in this alloy, which reduces battery range. Incellion™ El binders, launched on the market in 2023, are intended to gradually replace SBR. Produced in Europe, Asia and North America, they could represent a market of several hundred thousand tonnes by 2030. This future solution means Arkema is uniquely placed to become the only global player to offer both PVDF grades, fulfilling the function of binder at the cathode, and acrylic-based solutions to fulfil the same role at the anode. ■



INCELLION™
Acrylic solution for anode

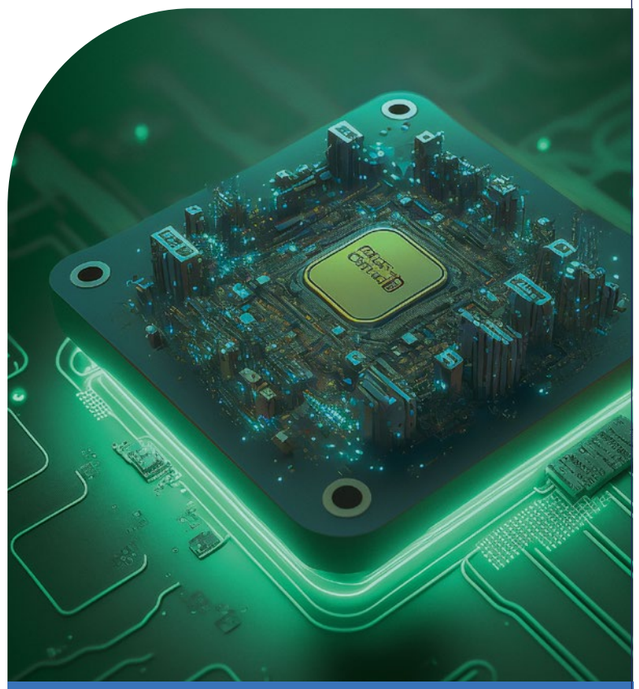
3. ADVANCED ELECTRONICS

ARKEMA MATERIALS ARE DRIVING THE DIGITAL REVOLUTION

Driven by the rise of AI and the rollout of 5G, the electronics industry has a growing need for high-performance materials. A recognised partner of the major digital players, Arkema is developing an unrivalled portfolio of advanced materials to support the most demanding markets.

By 2030, the global market for advanced electronics—infrastructure and devices—will be growing at around 5% per year. At the same time, global chip production could grow by 7% per year. The virtualisation of society and the explosion of digital applications, accelerated by the Covid-19 pandemic, are accompanied by unprecedented technological challenges. These include reducing the energy requirement of a growing number of data centres, improving the performance of smart devices without sacrificing compactness, further miniaturising electronic components, and creating breakthrough innovations. Many of the answers to these challenges lie in the field of high-performance materials, in which Arkema is now a global specialist. As a longstanding partner of the electronics industry, Arkema brings its materials expertise to the entire value chain, from the manufacture of chips and printed circuits to the final assembly of devices (see p.27). It now offers a broad portfolio of specialised solutions based on the complementary strengths of its three divisions: Bostik's technical adhesives, Coating Solutions' UV-curable (or photocurable) resins and Advanced Materials' high-performance polymers and additives. This offering is further enhanced by a number of recent acquisitions: Polytech PT and PMP in adhesives and, most importantly, PIAM, the world leader in polyimide films, which sits at the top of the polymer pyramid in terms of performance (see p. 28 and 29).

>>



Between 2024 and 2028, Arkema forecasts average annual sales growth of

10%

in the electronics market.

A STRATEGY FOCUSED ON THE MOST DYNAMIC MARKETS

The Group is constantly improving its solutions and technologies to prioritise emerging applications that combine high growth potential with the need for new-generation materials.

1 ▲ The accelerated deployment of **5G technology,** which is now used in all new smartphone models and is essential for the growth of the Internet of things, makes it possible to process huge volumes of data with greater reliability and speed. Arkema is supporting the growth of this sector, estimated at 15% per year until 2027, with two cutting-edge solutions: special UV-curable resins to protect high-definition printed circuits, and polyimide films to insulate 5G antennas.

3 ▼ The market for **flexible or bendable screens**, a predicted revolution in the world of consumer electronics, could grow by 30% per year by 2027. This development poses new challenges for materials. Arkema is working with major global manufacturers to develop specific grades of its bio-based Pebax® elastomer to contribute to the strength of screens, as well as clear UV resins and polyimide films to protect them from scratches.

2 ▲ With the digitalisation of our societies and the development of AI, **cooling increasingly powerful data centres** is now a critical issue. Immersion cooling technologies are a fast-growing solution. In this fast-growing market (25% per year until 2027), Arkema offers a range of 100% bio-based dielectric coolants and high-performance polymers for cooling systems.

4 ▼ **Virtual and augmented reality** devices are becoming increasingly popular with the general public, with an estimated annual growth of 14% between now and 2027. Arkema is contributing to this trend with its range of Piezotech® electroactive polymers for touch control. Its adhesive solutions are used to assemble components and headsets, while its high-performance polyamides provide the required lightness and durability.

FUTURE SOLUTIONS FROM ONE END OF THE VALUE CHAIN TO THE OTHER

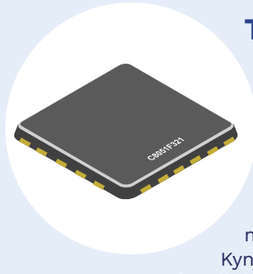
From the manufacture of chips to the assembly of devices, Arkema is developing a particularly wide range of products to serve leading electronics companies, drawing on the expertise of its three main businesses: Advanced Materials, Adhesives and Coatings.

Inside the screen

➔ Bio-based elastomers from the Pebax® range improve the flexibility and impact resistance of flexible screens.

➔ Clear UV- or light-curable resin grades are used to protect screens from scratches and impact.

➔ Several types of polyimide film are used in high-definition OLED displays.



To manufacture chips and printed circuits

➔ PVDF, of which the Group is one of the world's leading manufacturers with the Kynar® brand, is essential for all the ultra-pure water pipes used in microchip factories.

➔ Special grades of hydrogen peroxide are used for the chemical etching of semiconductors.

➔ E-Pure MSA methanesulphonic acid is used as an electrolyte in electroplating, the finishing process used to coat micro-components on printed circuit boards with a thin layer of protective metal.

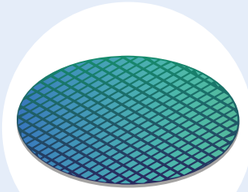
In-device components

➔ PVDF performs essential functions to improve battery performance, energy density and charging speed.

➔ Polyamide 11 is 100% bio-based and is the material of choice for the production of housings where lightness and durability are essential: headsets, AR glasses, smart watches, etc.

➔ Clear UV- or light-curable resin grades are used to encapsulate optical sensors.

➔ Piezotech® brand electroactive polymers are world-leading in the manufacture of haptic (touch) sensors, touchpads and fingerprint identification.



To protect and package finished components

➔ Permanent antistatic additives are used in the packaging of semiconductors to protect them from electrical discharges.

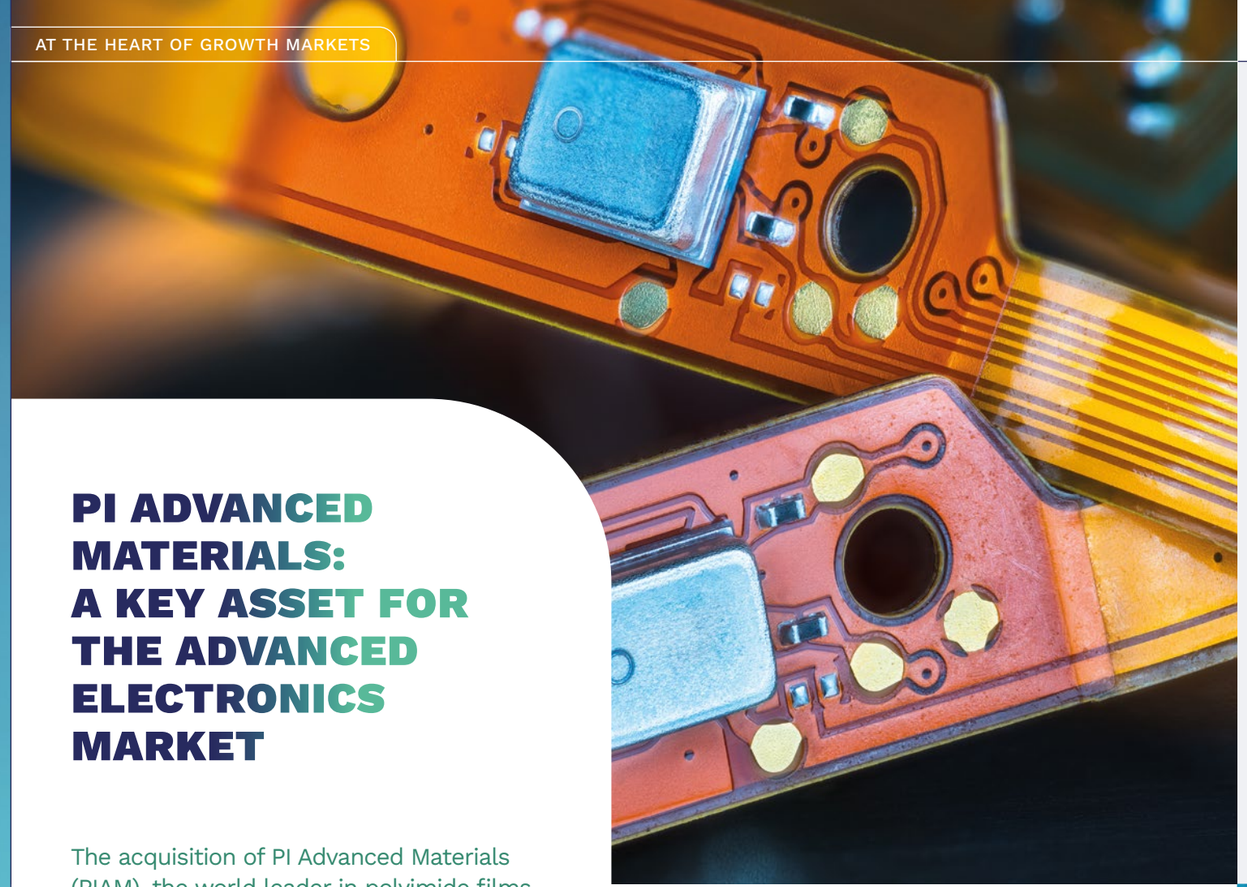
➔ Biobased speciality hot melts and photocurable resins are used to encapsulate chips and protect printed circuits.

For device assembly

➔ A wide range of Bostik-branded solutions provide critical functions for electronics manufacturers: fast-setting bonding and sealing for waterproofing, high-strength structural bonding, anaerobic adhesives for sealing screw holes, etc.

➔ UV-curable adhesives are also used for certain high-precision assembly or bonding applications.

>>



PI ADVANCED MATERIALS: A KEY ASSET FOR THE ADVANCED ELECTRONICS MARKET

The acquisition of PI Advanced Materials (PIAM), the world leader in polyimide films, gives Arkema a key technology for a wide range of value-added applications.

The deal was completed at the end of 2023: with the acquisition of 54% of the Korean company PI Advanced Materials (PIAM), the world leader in polyimides, Arkema has added a strong asset to its portfolio of materials for high-tech markets. Polyimide (PI) is special among high-performance polymers: it is the most powerful, combining the best electrical insulation on the market, temperature resistance up to 400°C, and exceptional flexibility and dimensional stability. These outstanding properties make it indispensable for many cutting-edge applications including the manufacture of semiconductors and the electronic components of the latest generation of smartphones and tablets (as well as electric mobility, see p. 24).

For example, it is used as a substrate for flexible printed circuits, to make graphite sheets (carbonised polyimide) for the thermal protection of internal components, and as a protective layer for new flexible screens. In addition to these existing applications, there are emerging applications with high growth potential, such as 5G antennas and new-generation electric car motors.

Strong commercial synergies

With 320 employees, two R&D centres and two industrial sites in Korea, PIAM has the world's largest polyimide capacity (6,000 tonnes per year by the end of 2024). Polyimide is produced in the form of high-purity films of various thicknesses, as well as varnishes used in thin layers for the electrical insulation of transistors and semiconductors. At a time when global demand for PI is growing rapidly (estimated at 9% per year between 2022 and 2027), the integration of PIAM into Arkema promises to generate strong commercial momentum. Arkema will leverage its presence in Europe and North America to develop PIAM's revenue there (it is currently concentrated in Asia) while exploiting the synergies between PI and other Group solutions, in particular Bostik and Sartomer, to accelerate the development of innovative solutions in advanced electronics. The acquisition of PIAM is therefore a perfect fit in terms of product offering and geographic footprint.

TWO ACQUISITIONS TO STRENGTHEN BOSTIK'S EXPERTISE IN HIGH-PRECISION ADHESIVES

▶ PMP in China

Reactive polyurethane hot melt adhesives (HMPUR) are used in the assembly of consumer electronic devices (smart phones, tablets, smart devices) in many applications that require fast and highly accurate bonding. Bostik has secured a solid position in this field with the 2022 acquisition of the Chinese company Shanghai Zhiguan Polymer Materials (PMP), recognised in Asia for its industrial know-how and expertise in formulating innovative solutions.

This has boosted the Group's high-precision adhesives technology portfolio, which already includes recognised solutions in cyanoacrylate, MAM and UV adhesives, developed through the acquisitions of Afinitica, Nitta and AEC Polymers.

▶ Polytec PT in Germany

In addition to its recognised expertise in battery interface materials (see p. 24), Polytec PT, acquired by Arkema in 2023, has strengthened the Group's offering in technical adhesives for advanced electronics markets. Based in Karlsbad, Germany, the company develops high-performance UV-curable adhesive technology. These solutions enable high-precision application with minimal material usage for a variety of structural assembly functions, particularly in smart phones and devices.

The adhesives have the ability to conduct electricity and/or dissipate heat. This is a valuable addition to the Bostik range, which is already well positioned in the UV adhesives segment.

TAKING ACTION

ON CLIMATE

THE ENVIRONMENT AND SUSTAINABLE INNOVATION

EMMANUELLE BROMET, VICE PRESIDENT, SUSTAINABLE DEVELOPMENT

“ONE OF THE MOST AMBITIOUS CLIMATE PLANS IN THE CHEMICALS INDUSTRY”

With a commitment to reduce its absolute greenhouse gas emissions in scopes 1 and 2 by 48.5% and its scope 3 emissions by 54% by 2030, the Group is pursuing a decarbonisation policy across all three emissions scopes. It is also looking further ahead with the announcement of its net zero ambition for 2050. Emmanuelle Bromet, Vice President of Sustainable Development, explains.

In 2023, Arkema adopted an ambitious climate plan with one main objective: to reduce its scope 1 and 2 greenhouse gas emissions by 48.5% and its scope 3 emissions by 54% by 2030 from the 2019 baseline. Could you tell us where these figures come from and what they mean for the Group?

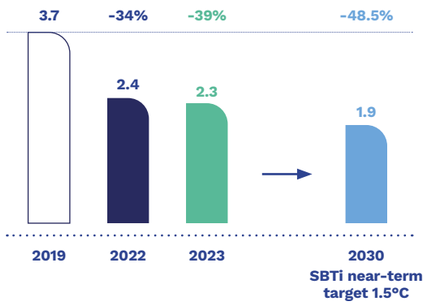
Emmanuelle Bromet: The trajectory we have committed to is to limit global warming to 1.5°C above pre-industrial levels by the end of the century. Our targets for reducing our greenhouse gas emissions by 2030 have been calculated using the SBTi (Science Based Targets Initiative, see box on page 33), which has become the global benchmark for climate commitments. In practice, this is based on voluntary, ongoing action in each of our three emission scopes: direct emissions at our sites (scope 1), indirect emissions linked to the energy we purchase (scope 2), and indirect emissions upstream and downstream of our activities (scope 3).

How did the Group perform last year in these scopes?

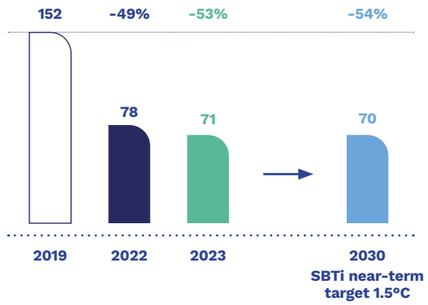
EB: In 2023, we were fully in line with our targets and even ahead of schedule. For scopes 1 and 2, we reduced our total emissions by 7% in 2023 compared to 2022. This year, we have implemented several major improvements in our processes, such as the new pipeline that recovers surplus steam at our Carling site and the signing of major contracts for the supply of renewable electricity, notably in the United States and China, where we signed our first PPA (power purchase agreement).

Today, 27% of our global electricity comes from renewable sources (solar or wind), compared to 24% in 2022. At the same time, we have reduced our scope 3 emissions by 9% compared to 2022, thanks to our policy of continuously adapting our portfolio of solutions and reducing the most emissive activities.

SCOPE 1+2 GHG EMISSIONS (Mt CO_2e)



SCOPE 3 GHG EMISSIONS (Mt CO_2e)



“27% of our electricity will come from renewable sources in 2023, up from 24% in 2022.”

At our Capital Market Days in December 2023, we announced our net zero ambition for 2050. Can an industrial group like Arkema really achieve carbon neutrality?

EB: It is the logical extension of our target of 1.5°C by 2030, as approved by the SBTi. In this case, the net zero ambition calls for a 90% reduction in our total emissions by 2050 across all scopes, with the remaining 10% covered by carbon offsets.

Of course, this is a very challenging projection in uncertain times, but we know that there are still areas where we can make progress to get as close to net zero as possible. We must leave no stone unturned. We will pursue our efforts through our Arkema Energy programme to improve our sites’ energy efficiency, reduce and green our energy purchases, and implement our policy of investing in and continuously improving our industrial processes. In scope 3, we will continue our efforts to develop our portfolio of solutions through the Archimedes approach, which leads us to prioritise activities that contribute most to the UN Sustainable Development Goals, including our investment strategy. We are also increasingly working with our suppliers to reduce the carbon footprint of our raw materials: reducing their scope 1 and 2 emissions is one way of reducing our scope 3 emissions!

In addition to these quantitative approaches, this climate plan is ultimately driving real cultural change within the company...

EB: Absolutely! Addressing environmental challenges is the responsibility of everyone in the Group, and achieving our carbon reduction targets is inextricably linked to creating a genuine “climate culture” among our employees, in the same way as we created our safety culture. This is what our Go for the Planet programme is all about (editor’s note: see below), using all available means to raise awareness: climate workshops, training modules, World Climate Day, funding for beneficial projects, etc. These activities have been very well received at our sites: our employees are serious about this issue and have become agents of change. Change is not just about our carbon footprint: we are including more biodiversity in our CSR policy, through our international commitment to Act4nature (see page 38), for example, but also all the efforts we have been making for years to reduce our waste and water use.

SBTI: A GLOBAL BENCHMARK
to steer climate action

Launched at COP21 in 2015, the SBTi (Science Based Targets initiative) is the result of a partnership between the United Nations Global Compact, WWF, the World Resources Institute (WRI) and the Carbon Disclosure Project (CDP). It provides a methodological framework for large companies to manage their climate action and set their emissions reduction trajectories by business sector, with the aim of limiting global warming to 1.5°C by the end of this century. It is now a truly global benchmark, subscribed to by more than 85% of CAC 40 companies, and an important criterion for recognising the CSR policies of major business players.

GO FOR THE PLANET:
"SPREADING A GENUINE CLIMATE AND SUSTAINABILITY CULTURE THROUGHOUT THE COMPANY"

Climate fresk, training, world day, newsletter... With Go for the Planet, an ambitious culture change programme launched in 2023, Arkema is doing all it can to make all its employees aware of climate issues and a force for change.

By the end of 2023, more than 2,800 Arkema employees had taken part in a "Climate Fresk", an interactive three-hour workshop in which participants work together in small groups to hone their understanding of climate issues and propose solutions for adapting practices and reducing greenhouse gas emissions. Sessions have been organised in fourteen countries, led by the Group's 120 or so volunteer "freskers". This awareness-raising work will continue over the coming years with the aim of reaching most of the Group's teams across all functions by 2028. "But this campaign is only the starting point for Go for the Planet, which the Group launched in 2023 to foster a genuine culture of climate and environmental sustainability in every employee at every site," explains Hortense Blazsin, who is in charge of the programme.
To help people explore the subject further, Arkema's Climate School offers themed e-learning modules, now available in eight languages. These provide additional knowledge on climate and environmental issues, including biodiversity, and practical tools for dealing with them, such as life cycle analysis and calculating the carbon footprint of our products.

The Group is also working on skills development programmes for specific roles such as sales, purchasing and human resources.

Empowering everyone to take action

"We want to give everyone an understanding of the issues, but also the means to take concrete action at every level of the business and make a significant contribution to reducing the impact of climate change," says Hortense Blazsin. As part of this process of empowerment, the Group will be testing a system for supporting grassroots projects selected from proposals submitted by employees every year. These include installing a closed water circuit to cool an extruder and buying a 3D printer to produce spare parts for an industrial machine on site. Hortense continues: "These grassroots initiatives are a valuable addition to the investments we are making as part of our Climate Plan" (see above).

CLIMATE FRESK
All the cards are in your hands!

"As for 30 November 2023, it was marked by the first global Go for the Planet Day, a milestone in the dissemination of best practice and collective action. But the process of creating our climate culture happens all year round."

Hortense Blazsin, Head of the Go for the Planet Programme

The best initiatives are recognised in the annual Go for the Planet Awards in four categories: Energy and Climate, Circular Economy and Resources, Biodiversity, and Culture and Commitment. As for 30 November 2023, it was marked by the first global Go for the Planet Day, a milestone in the dissemination of best practice and collective action (see box). But the process of creating our climate culture happens all year round. There is now a bimonthly newsletter with external news, education and inspiration to make people think and take a step back.

Go for the Planet
ARKEMA

ARKEMA

GO FOR THE PLANET DAY
ON NOVEMBER 30, 2023

Together for climate and the environment

Go for the Planet ARKEMA

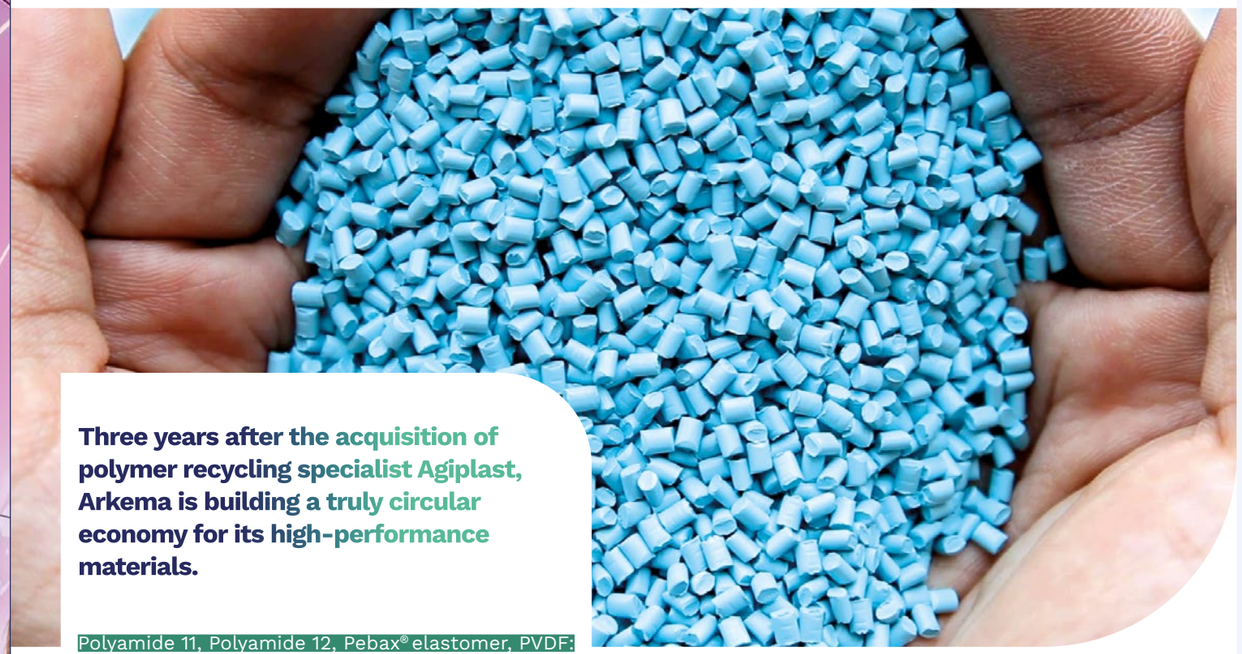
arkema.com

Go for the Planet Day: EMPOWERING COLLECTIVE ENERGY

On 30 November 2023, the first day of COP28, Arkema organised its first ever global Go for the Planet Day featuring a wide range of actions and initiatives at our sites around the world. These included climate "Maxi-Fresks" such as the one attended by seventy people in Colombes, as well as low-carbon-footprint meals, bicycle repair workshops and symbolic greening actions.
The day also saw the broadcast of three webinars showcasing the Go for the Planet approach and a number of achievements, as well as live discussions with sites around the world, virtually attended by 1,500 employees.
The day was enthusiastically received by participants.
Following this successful launch, Go for the Planet Day will be held every year in September!

Virtucycle®
ARKEMA

VIRTUCYCLE® PROGRAM, A UNIQUE RANGE OF RECYCLED POLYMERS



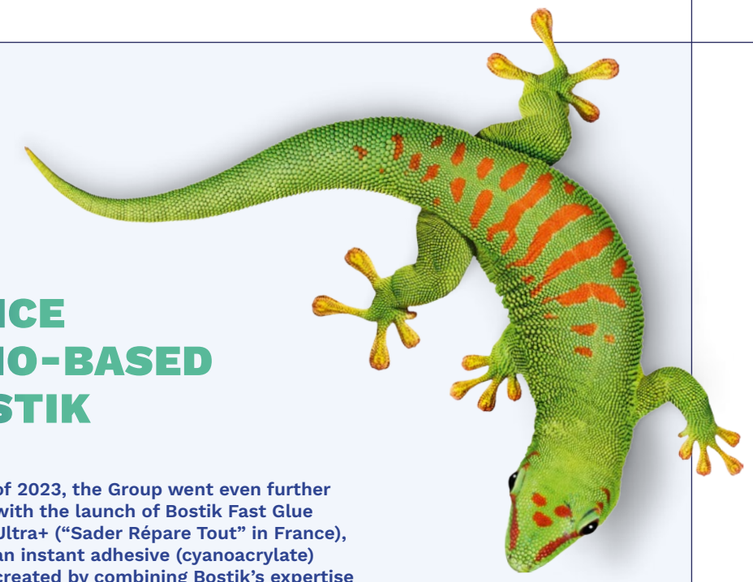
Three years after the acquisition of polymer recycling specialist Agiplast, Arkema is building a truly circular economy for its high-performance materials.

Polyamide 11, Polyamide 12, Pebax® elastomer, PVDF: these high-performance polymers in Arkema's portfolio are now available on the market in partially recycled grades, produced at Agiplast's site near Cremona (Italy). "Produced and marketed as part of the Virtucycle® program contain 30% to 50% recycled content with the same technical performance as virgin products," explains François Tanguy, Business Manager Polymers Recycling. Launched in 2023, the range is already proving a great success, with significant sales volumes. "From cars to sports equipment, our customers are increasingly concerned about the carbon footprint of their raw materials. The use of partially recycled materials, which also helps to combat the depletion of natural resources, is meeting strong demand in these markets," continues François Tanguy.

Process with a low carbon footprint

The mechanical recycling process, the result of Agiplast's know-how developed over thirty years, is based on a large number of analyses that identify the component materials received and guarantee the final properties of the regenerated materials. Furthermore, the process is powered entirely by renewable energy. The materials to be recycled are collected by Arkema all over the world: they come from production waste at its own sites and, for the most part, its customers' plants. The Group is also working to develop collection channels for end-of-life products. The range now comprises fifteen grades whose recycled content has been certified by the SCS Global Services accreditation programme. It is set to expand rapidly with the development of grades containing 70% or even 100% recycled content. "The acquisition of Agiplast in 2021 has been a tremendous boost for Arkema's commitment to the circular economy," says François Tanguy. "We are now a world leader in this fast-growing field." At the same time, the Group is working with its customers to promote the eco-design of their products and looking to improve opportunities for recovering materials at end-of-life.

HIGH-PERFORMANCE ADHESIVES AND BIO-BASED ADHESIVES AT BOSTIK



When it comes to adhesives, who says you have to choose between high performance and low carbon footprint? The latest products to come out of Bostik's R&D department for mass retail brilliantly combine these two major expectations. "Since 2023, we have offered several products with a high content of bio-based materials that offer fixing properties equivalent to those of conventional solutions," explains Alexandra Delatte, Consumer Marketing Manager at Bostik. The "Sader Fixer Sans Percer" range, marketed in France, includes a water-based acrylic adhesive for indoor use that is 18% bio-based, as well as an all-purpose hybrid adhesive that reacts to humidity and is 50% bio-based from rapeseed oil polymers. At the end of 2023, the Group went even further with the launch of Bostik Fast Glue Ultra+ ("Sader Répare Tout" in France), an instant adhesive (cyanoacrylate) created by combining Bostik's expertise in adhesives and Arkema's expertise in castor oil chemistry. Made from 60% bio-based castor oil, it gives its fossil counterparts a run for their money. "It sets a little slower but is much more water resistant than a conventional repair adhesive, has excellent temperature resistance and unparalleled flexibility," explains Alexandra. Sold in blister-free all-cardboard packaging, it will soon come in a recycled aluminium tube. This breakthrough innovation has all the ingredients for lasting success!

ACT4NATURE INTERNATIONAL:

OUR ACTION FOR BIODIVERSITY

Arkema has been a member of Act4nature International for three years and maintained its biodiversity commitments in 2023. Significant progress has been made in each of these areas and Arkema has now set new targets.

These include “reducing our emissions of volatile organic compounds (VOCs) into the air by 65% in 2030 compared to 2012”, increasing “the number of trained and certified farmers practising responsible castor bean cultivation in India from 4,600 to 7,000, with sustainable use of fertilisers and irrigation water”, and “encouraging our industrial sites to intensify their action to support biodiversity with neighbouring communities”. These are just some of the commitments signed by Thierry Le Hénaff in 2021, confirming Arkema’s membership of the international Act4nature programme (see box page 39). Emmanuelle Bromet, Vice President Sustainable Development, explains: “This voluntary initiative aims to promote and structure the Group’s efforts to protect flora and fauna by reducing emissions at our sites and taking biodiversity issues into account in all our industrial investments, as well as sourcing, solutions and dialogue with our stakeholders.” These commitments, which are supported by the programmes that underpin the Group’s CSR approach such as the Climate Plan, the Common Ground® initiative and the Pragati programme for castor oil farmers in India, are all backed by quantified, measurable targets.

Further commitments in 2024

A progress report published on the Act4nature international website confirms that the Group is complying with its roadmap, with “notable partial results” in all criteria (including a 47% reduction in VOCs by 2022). On this solid basis, and thanks to the materiality assessment carried out with BL Évolution, which enabled Arkema to better define its impact on and dependence on the living world, the Group has renewed and strengthened its commitment to the programme. “The new commitments set out in 2023 are currently being reviewed by the Act4nature expert panel (Muséum national d’Histoire naturelle, IDDRI, AFEP, Entreprises pour l’Environnement) for publication in May 2024,” explains Emmanuelle. Under those additional commitments, the Group will work to develop methods to measure its “biodiversity footprint”, both for individual products and for entire industrial sites, and to define a detailed map of the impact of its sourcing on biodiversity. The aim of this approach is to systematise the analysis of biodiversity in the vicinity of its sites (key areas or endangered species, beyond the mere presence of a protected area).

Employees’ awareness of biodiversity is being raised through the inclusion of specific biodiversity training in the Go for the Planet programme (see previous pages). At the same time, a wide range of actions are being taken at industrial sites (see following pages), from large-scale projects such as the reuse of industrial water at Changshu and Hengshui (China) to more modest measures such as the installation of beehives (Genay in France), nesting boxes and bird feeders (Cerdato in France).

ACT4NATURE INTERNATIONAL, official recognition

Launched in 2018 by the French organisation Entreprises pour l’Environnement (EpE), Act4nature International is a voluntary commitment scheme that allows economic actors to formalise and raise the profile of their biodiversity efforts by adopting precise, measurable—and regularly measured—objectives. Its steering committee includes business networks, environmental NGOs (IUCN, Noé), scientific bodies (MNHN, IDDRI, Fondation pour la recherche sur la biodiversité) and the French Biodiversity Agency. More than seventy major companies have already signed up to Act4nature, including Arkema in 2021.

▶ www.act4nature.com

act4nature international

Wastewater treatment plant, Changshu site

330,000 M³ OF WATER SAVED EACH YEAR IN CHANGSHU, CHINA

As part of the Optim'O programme, Arkema is working on all fronts to reuse the water used in its processes. It is a long-term effort that is saving hundreds of thousands of cubic metres, as demonstrated by the Changshu and Hengshui platforms in China.

Located 100km west of Shanghai, the Changshu industrial platform is Arkema's largest site in the world, producing PVDF, fluorinated gases, polyamides, organic peroxides and coating resins. "On this 43 hectare site, where dozens of chemical processes are carried out, basic demand for water is very high," explains Jean-Yves Robin, Director of the Optim'O programme. "In total, our processes use 1,040,000m³ of water a year for cooling, production of purified water and gas scrubbing. The net abstraction of water from the Yangtze River was reduced to 710,000m³ in 2023, however, representing an annual saving of 330,000m³. This is a significant difference, which can be explained by the systematic identification and implementation of reuse opportunities, which has been carried out since 2019 as part of the Optim'O programme. Fifteen reuse scenarios have been implemented on the site, with some water being reused up to seven times before being discharged into the industrial park's wastewater treatment plant. It should be noted that the site also recovers around 10% of its own treated water from its own treatment plant for reuse in its processes.

60% of wastewater reused in processes at Hengshui

At Arkema's Hengshui site, located to the south of Beijing in a highly water-stressed area, the percentage of effluent reused from the site's treatment plant is even higher, at over 60%! And more than 50% of the water supplied to the plant is recycled! "This almost 'closed-loop' operation is made possible by the nature of the production processes used on the site and the high degree of integration at this chemical platform, where the operator of the treatment plant in the industrial zone treats and recycles the effluents of several manufacturers, including Arkema," says Jean-Yves Robin.

ON THE CHANGSHU SITE

The reuse of certain water flows has enabled annual savings of

1/3

or 330,000 m³ of water 1,040,000 m³ since 2019.

AT THE HENGSHUI SITE

Over

60%

of effluent leaving the site's treatment plant is reused.

Wastewater treatment plant, Hengshui site

BIODIVERSITY AND ENVIRONMENT, OUR EMPLOYEES GET INVOLVED

Here are two examples of sites in France that have gone beyond their Act4nature pledge to implement biodiversity initiatives in the vicinity of their facilities. These are opportunities to encourage employees to change their lifestyle and reduce their environmental footprint.

At Cerdato, the high-performance polymers research centre located in the green Normandy countryside (the Eure department in France) next to the Serquigny polyamide production site, a group of volunteer employees set up in 2018 have taken up the cause of sustainability. Their initiatives are tangible and visible, and raise employees' awareness of environmental issues. This includes buying direct from local producers (organic produce from a market gardener), waste and recycling awareness sessions (recycling days, litter picks around the site) and biodiversity initiatives (highlighting the wild orchids and birds present on the site). "Our employees are very sensitive to this issue," explains Catherine Savary, the site's Documentation and Communications Manager. "When the representative from the regulatory authority comes to check the water quality in the Risle the river that runs alongside the site upstream and downstream of our facilities, we invite our employees to take part in the sampling to learn about the wildlife that is particularly sensitive to pollution. They are able to see the quality of the water for themselves, and we are proud of the 20/20 score we get every time." Another initiative that combines biodiversity and education is a partnership with the nature club at a nearby school. "They have installed nesting boxes for us and a bird feeder made from waste from processing trials of our Rilsan® material. The feeder is attracting more and more birds, including goldfinches and titmice, and maintenance of the nesting boxes in the autumn reveals that chicks have hatched in them. The pupils inspect and clean the boxes and we replace them at the end of the winter. In return, their teacher, an amateur ornithologist, gives a talk on the birds at the Cerdato site. It is both practical and educational. These sustainability initiatives are helping to make our employees aware that they can do something simple and good for the environment in their own way. The momentum is there," says a delighted Catherine.

At Coatex, an industrial site specialising in acrylic additives in Genay, north of Lyon, biodiversity is visible through the proliferation of bees. "Five years ago, employees took the initiative to install beehives. Today, there are four and they produce 500 pots of flower honey a year, which is distributed to all the employees. The honey is analysed by a laboratory that certifies its purity," explains Sandrine Giron, the site's Communications Manager.

The next step was to set up the Employee Environmental Footprint Committee. It has ten members from different departments, all volunteers. They draw up actions to be implemented all year round to raise employees' environmental awareness and protect the site's biodiversity. The committee has suggested a number of environmentally friendly ideas to the site's management, most of which have now been implemented. They include installing light sensors in the corridors and electric charging points for cycles and cars, the introduction of a car sharing scheme for the whole industrial estate using the Karos platform, replanting hedges around the beehives and, soon, planting trees on the site. The approach is motivated by common sense environmental goals that are easy to implement. "For example, we have stopped using plastic bottles in meeting rooms and replaced them with water jugs, and we have started composting the organic waste from the company canteen in partnership with the Lyon-based association Les Alchimistes. They collect around 100kg every month, producing 30kg of compost," explains Sandrine. "Living in a healthy environment and reducing waste and consumption are becoming part of our employees' daily routines," she concludes.

COMBINING WORK AND

WELLBEING

NEW EMPLOYER BRAND:

A CAMPAIGN THAT SETS US APART!

Gilles Galinier,
Vice President, Corporate Communications, explains how the campaign came about.

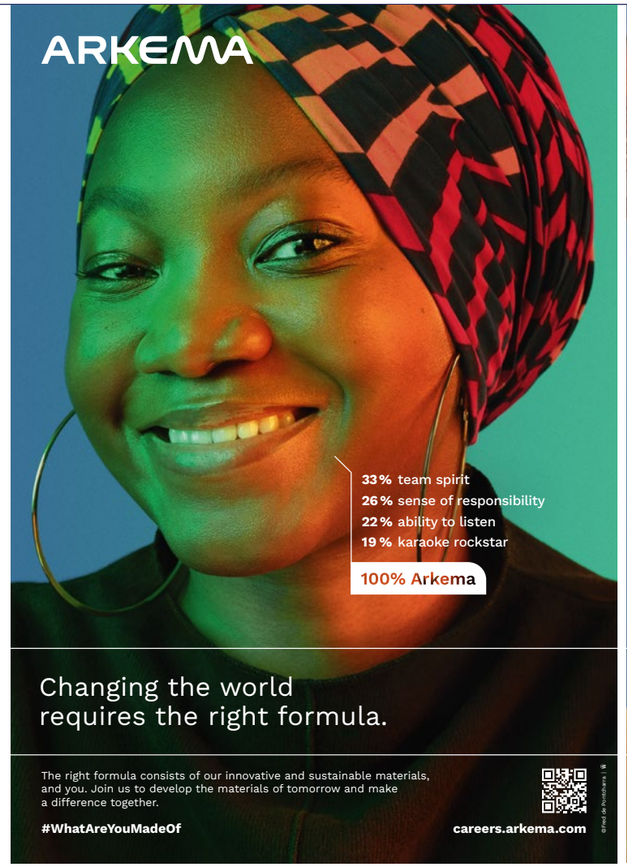
In spring 2024, the Group launched its innovative new employer brand recruitment campaign. It highlights applicants' soft skills as key strengths in the selection and recruitment process.

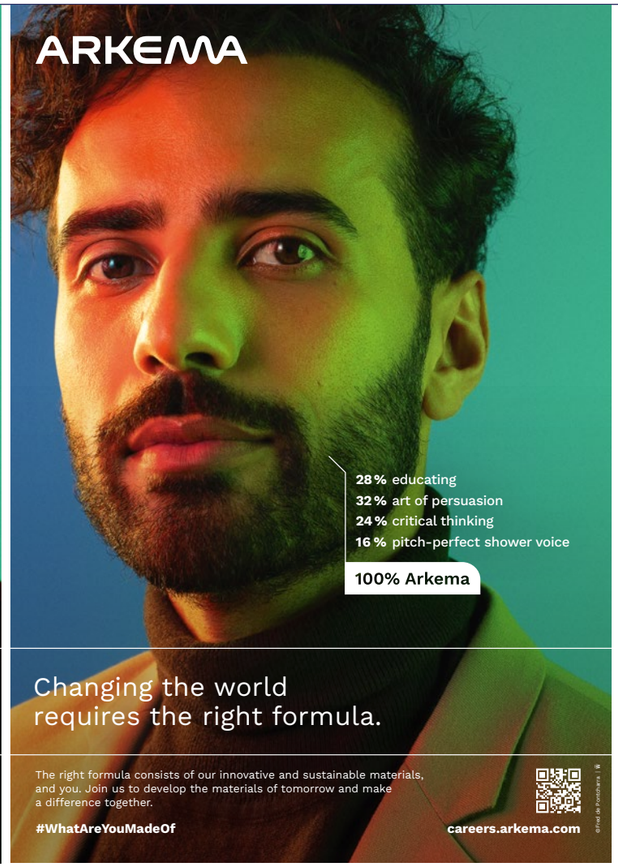
It's a bold move. For its new recruitment campaign, Arkema has chosen to highlight in its visuals a combination of soft skills as the main asset it seeks in applicants.

"What are you made of?". It is a call to action that encourages candidates to be proud of the differences that help them stand out from the crowd and "click" with the company.

Under the slogan "To change the world, you need the right formula", Arkema's sends the following message: in addition to career paths and qualifications, Arkema also looks at the human qualities and "soft skills" that lie behind the CV. The aim of the campaign is to position Arkema as a future employer of choice for candidates with unique personalities, and to make its employees proud to contribute to the Group's success.

> The Human Resources and Corporate Communications teams worked closely together to create a new kind of campaign. To invent solutions that make a difference, you need people that embody that difference: people from different backgrounds with diverse personalities. It was important for us to emphasise soft skills and for this campaign to be both external, to attract the best talent, and internal, to unite and mobilise the Group around a shared ambition and values. The right 'formula', one that works and drives us forward, is to combine our talents and our innovative materials to support a more sustainable world. To stand out from the crowd and do something a bit different, it was also important to represent our approach with real Group employees, with a touch of fun!





Posters featuring five Arkema employees

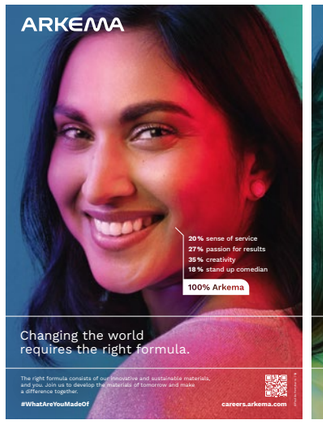
The campaign was launched in April in the press and online with a series of posters featuring real Arkema employees, who reveal their unique mix of soft skills and passions (for example: 37% courageous, 32% persuasive and 15% superhero fan).

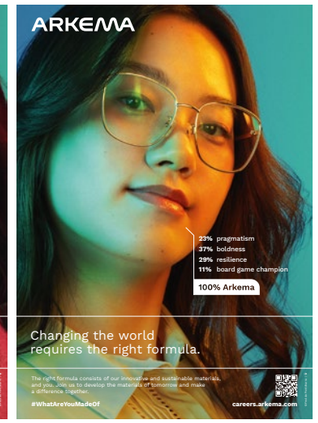
Each poster references the different components of Arkema's innovative materials, and likewise, those of the people who invent, produce and sell them.

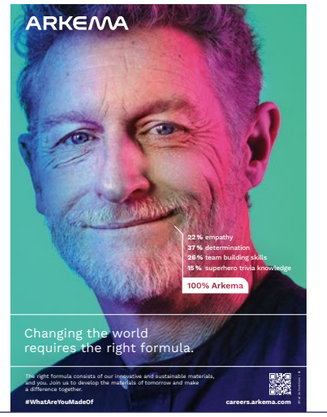
Using a dual lighting photographic technique, each poster references both the composition of Arkema's innovative materials and, above all, the soft skills of the people who design them.

Reminiscent of Arkema's "Wave of Change" campaign, the new employer brand film highlights the principle of the right formula that makes up our innovative products, as well as the talents that make these materials possible. Shared as social media reels, the film echoes the poster campaign in the use of percentages of employees' characteristics and the dual lighting effect.

>>



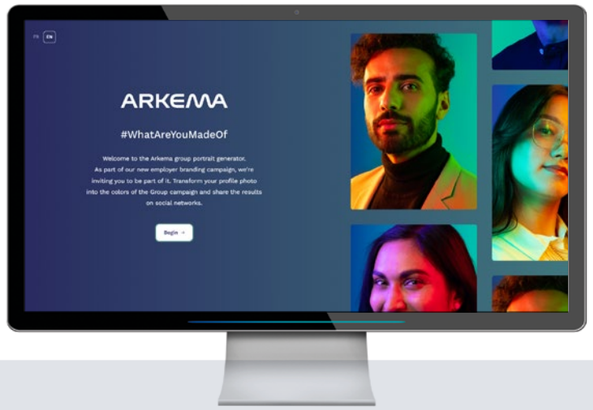




Click here for the 'employer brand' film

Our employees are our ambassadors!

Another interesting feature of the campaign was its dedicated mini-site, shared internally, which gave each employee the opportunity to create their own profile based on the same principle as the official posters, choosing their soft skills and passions from a list of suggestions. AI was used to create a unique portrait for employees, with a dual-lighting effect to reflect the makeup of their personality. Employees were invited to share their portrait on social media to promote the campaign and its message.



ARKEMA RECRUITS EVERY YEAR

Around **2,000** employees

in **200** occupations in industry, R&D, business and support roles

More than **500** trainees and work-study students

A 360° print and digital campaign

The 360° “What are you made of?” campaign was widely shared on social media and networks (LinkedIn, Meta, YouTube, etc.), French sepcialist websites (L'Étudiant, Job Boards, Science & Vie, etc.) and French web and print media (20 minutes, Le Monde, Le Point, Les Echos, Le Figaro, Le Parisien, L'Opinion, L'Équipe, etc.). This is the first step towards a roll-out in the Group's other host countries.

ARKEMA
PERFORMS WELL IN HR RANKINGS

These international and French rankings recognise Arkema as one of the most attractive companies to work for. They take into account how employees perceive the values of inclusivity and equal opportunities, wellbeing at work, career management and their own engagement.
We bring you a round-up of our latest rankings, revealing a company that's “great to work for”!

For the fourth consecutive year, Arkema was listed in the Forbes World's Best Employers international ranking, demonstrating our ability to foster a work culture that is motivating and attractive to candidates, as well as a climate of employee engagement and well-being. Our efforts over time have been recognised: we were ranked 94th out of 700 in 2023, compared with 113th in 2022 and 259th in 2020.

Arkema was included in Time Magazine's 2023 list of the world's best companies. Based on three main criteria (employee satisfaction; revenue growth; and environment, social and governance or ESG), this ranking (226th out of 750) reflects our excellent financial performance over nearly two decades, our ambitious CSR strategy and our human resources policy focused on employee engagement and wellbeing.

Based on a survey of 20,000 French employees, French Capital magazine ranked Arkema third in its list of the 500 best employers in France and first in its sector (Oil and Chemicals). This result reflects the visible efforts made by the Group, as we have moved up two places in one year.

Also in France, Arkema was included in the Capital Diversity Champions ranking with an overall score of 7.72/10. Twenty-five thousand French employees assessed the reputation and policies of their companies and competitors in terms of diversity, equality and respect for employees regardless of age, origin, sexual orientation or disability, if relevant.

At a European level, the Group's commitment to diversity has been rewarded with our inclusion in the Financial Times European Diversity Leaders ranking. Again, current and former employees rated their companies on all aspects of diversity.

When it comes to young talent, Arkema is not to be outdone! We have been awarded the Universum label as one of the Top 100 Most Attractive Employers – World, based on a panel of young professionals and 172,000 students from business, engineering and IT schools.

For the fifth consecutive year, Arkema was awarded the HappyIndex® Trainees France label, placing 12th out of 42 companies surveyed that host between 200 and 499 interns and work-study students. We are proud of our 92% recommendation rate!

Last but not least, Arkema is officially a Top Employer! This is not a ranking but a certificate obtained after a lengthy audit process that attests to good recruitment and human resources management practices, as well as the positive social climate that prevails in the company! In 2024, Arkema was certified in ten countries. Brazil, China, the United States and France have been certified since 2022, and this year the Philippines and five European countries (Germany, Spain, Italy, the Netherlands and the United Kingdom) were added, giving Arkema the Top Employer Europe label at the same time. These ten countries represent 80% of our employees and new recruits. ■

ARKEMA
ON THE MOVE!

New worldwide Arkema's headquarters in France, new headquarters in the United States and in India... In 2024 and 2025 these three head offices will take up residence in new, state-of-the-art premises that will foster social interaction, teamwork and quality of life at work.

1,200 Arkema and Bostik employees will move into premises across

25,000m²

A transformation in working habits

The rise in remote working is changing the way we work and the new headquarters will reflect this. The design was based on five themes to encourage social interaction and team performance: collaborative working, open team spaces, modular layouts, a sense of flow and an attractive experience for visitors. These are embodied in the open-plan workspaces, which are designed to promote wellbeing. Features include workbenches for two to four people, partitions for privacy, carefully considered acoustics, optimised lighting systems and plenty of natural light. The cosy atmosphere is a far cry from the grey cliché of the soulless open-plan office. There are a variety of spaces to meet the evolving needs of the working day, with meeting rooms, individual pods, spaces for private conversations, video conferencing areas and phone booths. The move is a chance for the headquarters to switch to a flexible office mode. No more pre-assigned desks! Every morning, employees will choose their workspace to suit their needs for the day, whether that means being with their team to work on a project or tucking themselves away in a quiet space in order to concentrate. With a desk-sharing ratio of 0.8 (or eight workstations per ten employees), Arkema is by far one of the most welcoming and comfortable companies to work for.

Common areas to promote wellbeing

Complementing the bright, generously proportioned workspaces, the most striking architectural feature of the new headquarters is a vast atrium that will house the main staircase, allowing natural light to flood into the building. This will be a space designed for people to come together. There will be a café area overlooking the atrium on alternating floors, and many meeting rooms opening off it. A spacious, multi-purpose campus area covering almost 1,500m² will offer various areas to meet different needs throughout the day: a training room, games room, relaxation area, conference room, space for the company associations to use, seminar room and co-working area, plus access to the building's 370m² roof terrace. They will also be able to use the indoor/outdoor gym. And to encourage more employees to cycle to work, there will be more spaces for them to lock up their bikes.

Flavoursome food and refreshments will be provided by a high-quality catering company that sources fresh, local ingredients. The staff restaurant will offer a wide choice of dishes to eat in or take out, and even a brunch on Fridays. There will be a further cafe-style space with a terrace, open from 8am to 5pm, serving breakfast, lunch and snacks throughout the day. Employees will also be able to buy fresh fruit and vegetables here. Lastly, there will be a kitchen space with tables where employees can prep and heat up meals brought from home. In 2025, Arkema will elevate quality of life at work to a whole new level.

>>

NEW WORLDWIDE HEADQUARTERS IN FRANCE PRIORITISE WELLBEING

At the beginning of 2025, Arkema will move from its headquarters in Colombes to a completely renovated building in the La Défense business district of Paris. The move is a perfect opportunity to start from scratch and create a new working environment designed by and for our employees.

In the heart of La Défense, Europe's foremost business district and an academic, cultural and commercial hub, Arkema's future headquarters marks a new stage in the Group's development. Here's what employees can expect in the coming months.

Environmentally friendly renovation

To limit our environmental impact, we chose to move to an existing building rather than build a new one. The interior has been completely redesigned while retaining two-thirds of the existing structure. Energy efficiency was considered from the outset: 100% of the electricity supply will be green, with a 50% reduction in primary energy consumption compared to before the renovation works. The building has been awarded Haute Qualité Environnementale (HQE) certification and the BREEAM Excellent rating, both attesting to the quality of life for its future occupants and its respect for the environment.

NEW ARKEMA INC HEADQUARTERS IN IDEAL LOCATION

In November 2024, 500 employees from Arkema's King of Prussia and Exton sites will move to brand new facilities in Radnor, just a short drive from the current headquarters in King of Prussia, Pennsylvania.

Location and commute times were key factors in choosing the new site. It is ideally situated in an area with many restaurants, shops and hotels, and is close to two major highways and a number of public transport facilities. "We have involved our employees in many aspects of this project, and the new building takes account of their clearly expressed needs and improvements to the working environment such as soundproofed open spaces, plenty of natural light and a variety of collaborative spaces," says Tony O'Donovan, President and CEO of Arkema Inc.

The result is a spacious office building covering some 13,000m² over four floors with a welcoming, modern, open plan design in a neutral colour palette. Special attention has been paid to sound insulation. The building will encourage collaboration, with its many conference rooms and small meeting areas as well as open plan workspaces and comfy nooks for a coffee or chat. "We are currently testing the open plan workstations and small collaborative spaces that will feature in the new building. We want to use more digital tools and less paper. Feedback is helping us optimise our future office environment," says Marie Juliana, who is leading the project.

The building is expected to achieve Fitwel certification, which rates a range of criteria including facilities that promote wellbeing and quality of life at work, common relaxation areas, water supply, eco-design, access to green outdoor spaces and provision of healthy food. "The new headquarters will help us attract and retain the best talent. It will reflect our brand identity through signage and interiors that highlight our values and why we exist," says Tony.

The King of Prussia site will continue to be used as an R&D Innovation Centre, and will be expanded and refurbished to accommodate Arkema Exton's R&D team.

INAUGURATION OF NEW HEADQUARTERS IN INDIA

The new offices were officially inaugurated in November 2023 by Arkema's senior management along with employees and their families during a traditional Indian ceremony in April 2024.

In April 2024, the Group's new head office in India was inaugurated, in the heart of the Mumbaï business district. It brings together Arkema and Bostik teams on the same site, marking an important milestone in the Group's development in India.

The modern, welcoming offices are designed to promote teamwork and will initially house around 45 people, rising to 55 in the coming years to accommodate Arkema's growth in India.

Strategically located in the heart of Mumbai in an attractive setting, the ultra-modern Godrej complex boasts generous green spaces, a beautiful food court, several restaurants, a crèche for children and a Taj Group hotel for business clients. This new working environment symbolises the Group's commitment to expansion in India.

CARING BY ARKEMA, A GLOBAL MENTAL HEALTH SUPPORT SYSTEM

As part of its Wellbeing at Work programme launched in 2019, Arkema is pursuing its initiative to improve quality of life at work and launched its first global mental health support and anti-bullying system in November 2023, available to all Group employees.

Ensuring a good working climate and a high level of employee engagement also means recognising that employees sometimes need support in a difficult professional or personal situation. With the new Caring by Arkema programme, the Group offers all employees and their families easy access to a therapist in their own language.

Developed in partnership with Eutelmed, the scheme operates via an online platform that allows all Group employees to contact a therapist via the chat function or by phone, 24 hours a day, 7 days a week, in 60 languages, to discuss their situation and receive personalised support safely, confidentially and anonymously.

The platform offers a wide range of information modules, articles and videos on various topics related to wellbeing and stress, as well as free and unlimited self-assessments.

Nathalie Muracciole,
Social Development and Wellbeing at Work Programme Manager, explains how the programme originated.

Why was this programme put in place?

NM: We believe that wellbeing at work and a good work/life balance are factors that help our employees feel more committed. As in any company, our employees may find themselves in an uncomfortable situation, and we need to take this seriously. With that in mind, we wanted to put in place a support system developed in conjunction with mental health professionals. The system is based on a user-friendly platform that provides access to phone consultations with therapists in sixty languages, in every country where Arkema operates. The therapists can provide immediate and long-term psychological support when needed with up to three appointments. The consultations are completely confidential with respect to Arkema. Employees' family members can also access the service. The platform also deals with all types of bullying or harassment. Its therapists are trained to handle these situations, which require special attention and follow-up, and may also lead to intervention by the Group's Compliance and HR teams.

Why wasn't this kind of system already in place in the Group?

NM: Mental health support systems were already in place in China, the United States and France, run by local service providers. We wanted to rebalance and harmonise these benefits by offering a single support and anti-bullying programme in all countries where we operate, regardless of the number of employees. This commitment to providing the same service worldwide is part of our Wellbeing at Work programme. The Arkema Cares Internal Engagement Survey, which measures internal opinion each year, found that people very much wanted a worldwide system. ■

SHAREHOLDER INFORMATION

2023 HIGHLIGHTS

These highlights reflect our commitment to an ambitious Climate Action Plan, sustained corporate philanthropy and sports sponsorship, dynamic innovation and confidence in the future through targeted investments and acquisitions in buoyant markets.

CLIMATE AND DECARBONISATION AMBITIONS

JANUARY

Arkema signs one of the largest **BIOMETHANE CONTRACTS** in Europe with ENGIE

ENGIE will supply 300 GWh per year of biomethane from agricultural residues to our high-performance bio-based polymer plants in France. This contract will enable Arkema to significantly reduce the carbon footprint of its polyamides.

APRIL

CLIMATE FRESK for all Arkema employees

To mark Earth Day on 22 April, Arkema announces that it will gradually roll out the Climate Fresk to all its employees worldwide to raise awareness of climate issues.

MAY

New **DECARBONISATION AND SBTI APPROVAL TARGETS** for our Climate Plan

Arkema, which had already strengthened its Climate Plan in July 2022, sets new, even more ambitious targets for 2030, approved by the Science Based Targets initiative (SBTi). The Group now aims to reduce its greenhouse gas emissions by 48.5% for scopes 1 and 2 and by 54% for scope 3 by 2030 compared to 2019.

SEPTEMBER

The Carling site reduces **CO_2 EMISSIONS BY 20%**

Thanks to a €130 million investment, Arkema will implement a new patented purification technology at its acrylics production site in Carling, France, by 2026 to improve the site's operational efficiency and reduce its CO_2 emissions by 20%.

NOVEMBER

A tool to **CALCULATE THE CARBON FOOTPRINT** of our entire product portfolio

Arkema launches CACTUS, a digital tool designed to automatically calculate the Product Carbon Footprint (PCF) of the Group's entire portfolio of solutions. This will help us achieve our new goal of having 90% of our sales covered by a Life Cycle Assessment (LCA) by 2030.

DECEMBER

Bostik sites in France switch to **GREEN ELECTRICITY**

Arkema signs a twenty-year contract with EDF Renouvelables for the supply of 20 GWh per year of renewable electricity. The partnership will start in 2026 and will cover 70% of Bostik's electricity in France.

PATRONAGE AND SPONSORSHIP

MAINTAINING OUR STRONG COMMITMENT

FEBRUARY

Sport in the City: **ARKEMA IS A KEY PARTNER**

Arkema continues its commitment to the association Sport dans la Ville by becoming a key partner, giving priority support to the Job dans la Ville programme which was set up to tackle the problem of school dropout and provide access to training and employment for young people from deprived neighbourhoods.

FEBRUARY

Arkema takes **THOUSANDS OF CHILDREN** to the opera

Arkema, a member of the Théâtre des Champs-Élysées Patron Circle, has supported the Young Audience programme for the past five years. Every year, this gives more than 12,000 schoolchildren from disadvantaged neighbourhoods the opportunity to experience classical music in an engaging way. This year, the children were among the audience of La Cenerentola, Rossini's version of the Cinderella story.

MAY

In the United States, Arkema supports **HABITAT FOR HUMANITY** in Philadelphia

As part of this three-year sponsorship, Arkema Inc. will provide a total of $330,000 in financial support, donate building products and contribute employee volunteers to help build and renovate homes for people from disadvantaged backgrounds.

JULY

Arkema partners with the **FRANCE WOMEN'S FOOTBALL TEAM**

Arkema, the D1 sponsor since 2019, partners the France women's football team for the next two seasons until 2025.

SEPTEMBER

Arkema is an active member of the **CGENIAL FOUNDATION**

As partner of this French Foundation since 2016, Arkema steps up its commitment to developing the interest of middle and high school students in science and technology by introducing them industrial and R&D careers. Arkema also takes a seat on the Foundation's Board of Directors.

INNOVATION

MODE: OPEN

FEBRUARY

From sailing sponsorship to **TECHNICAL PARTNERSHIP**

Arkema and the Nouvelle Aquitaine-based company Lalou Multi have been ocean racing partners for ten years, with two competing Arkema boats. Now, Arkema and Lalou Multi have signed a technical cooperation agreement to explore the potential of Elium® resins and Bostik adhesives in the construction of high-performance, innovative and recyclable boats for ocean racing.

MARCH

In the **TOP 100** European innovators

The European Patent Office has published a list of the 100 companies that filed or extended most patents in Europe in 2022: Arkema is among the top ten French companies.

JULY

Drinking water comes to **REMOTE AREAS**

Arkema, Polymem and Tergys join forces to manufacture autonomous filtration systems for supplying drinking water in remote areas. Arkema and Polymem have a longstanding and successful partnership for the production of water ultrafiltration systems using Neophyl® membranes made of Kynar®PVDF. Tergys develops solar-powered containerised systems for these water treatment solutions.

INVESTMENTS AND ACQUISITIONS

IN THE MARKETS OF THE FUTURE

OCTOBER

Arkema wins the 2023 ICIS Innovation Award for **BEST PRODUCT INNOVATION FROM A LARGE COMPANY**

This recognises Arkema and its partner On for their initiative to develop Cloudneo high-performance running shoes made entirely from bio-based polyamides that are fully recyclable.

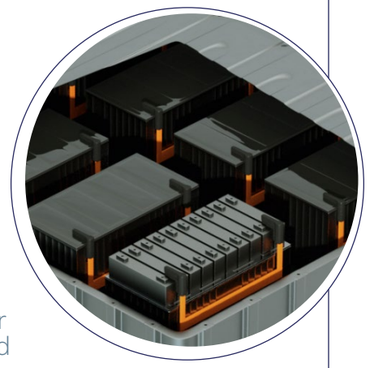
Second **ARKEMA – ACADÉMIE DES SCIENCES AWARD**

This funded prize rewards research that contributes to innovative and responsible chemistry, and is awarded to Julien Bras, Professor at Grenoble INP-UGA, internationally recognised for his work on renewable materials, particularly cellulose as a substitute for fossil-based polymers in applications ranging from packaging to composites.

DECEMBER

A new **100% RECYCLABLE** wind turbine blade

Two years ago, the ZEBRA (Zero wastE Blade ReseArch) consortium, of which Arkema is an active member, produced the first 66-metre blade using our recyclable Elium® liquid thermoplastic resin. A second blade, this time 77 metres long, has now been manufactured using Elium®, demonstrating the strength of our resin for very large blades, which, unlike current blades, can be recycled.



MAY

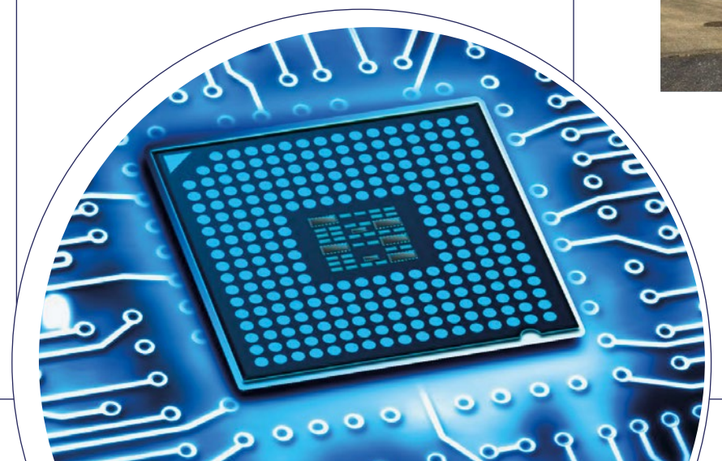
Acquisition of **POLYTEC PT,** manufacturer of adhesives for **BATTERIES** and **ELECTRONICS**

Polytec PT, based in Germany, develops thermal interface materials for batteries and engineering adhesives for the electronics market. It generates revenue of approximately €15 million with one main production site in Karlsbad, Germany.

JUNE

Arkema acquires a stake in **PIAM,** a manufacturer of **ULTRA-HIGH-PERFORMANCE MATERIALS**

Arkema acquires a majority stake in PI Advanced Materials in Korea for an enterprise value of €728 million. PIAM is the global leader in polyimide films, high-temperature materials for flexible printed circuits, and graphite sheets used in the fast-growing mobile device and electric vehicle markets.



Investment in Beaumont to develop **BIOFUELS**

Arkema invests €130 million at its Beaumont site in the United States to increase its global production capacity for DMDS (dimethyl disulfide), an essential additive for the production of aviation biofuels.

DECEMBER

Acquisition of **ARC BUILDING PRODUCTS** in Ireland

With annual revenue of around €15 million, ARC Building Products specialises in construction adhesives and sealants, floor preparation systems, and sealing and bonding solutions.

SEPTEMBER

Investment in China to develop **PHOTOVOLTAIC PANELS**

Arkema announces the 2.5-fold expansion of its organic peroxides plant in Changshu, China. This investment of around €50 million will enable the Group to support its Asian customers in fast-growing markets such as photovoltaic panels.

EXECUTIVE COMMITTEE

The Executive Committee, chaired by Thierry Le Hénaff, consists of a Chief Operating Officer, five operational and functional Executive Vice Presidents, and three operational Senior Vice Presidents.

It is responsible for the operational management, coordination and implementation of the strategy within the Group. This decision-making body defines strategy, monitors performance, reviews key organisational issues and major projects, and oversees the implementation of internal control. It meets twice a month.

1. Laurent Tellier,
Executive Vice President, Performance Additives

2. Vincent Legros,
Executive Vice President, Adhesives (Bostik)

3. Marc Schuller,
Chief Operating Officer, Advanced Materials, Coating Solutions and Intermediates

4. Thierry Parmentier,
Executive Vice President, Human Resources & Communications

5. Thierry Le Hénaff,
Chairman and Chief Executive Officer of Arkema

6. Richard Jenkins,
Executive Vice President, Coating Solutions

7. Marie-José Donsion,
Chief Financial Officer

8. Luc Benoit-Cattin,
Executive Vice President, Industry and CSR

9. Erwoan Pezron,
Executive Vice President, High-Performance Polymers

10. Bernard Boyer,
Executive Vice President, Strategy

BOARD OF DIRECTORS

Chaired by Thierry Le Hénaff, the Board of Directors is composed of fourteen members, with balanced representation between women and men. It is made up of seven independent directors, two directors representing employees and one director representing employee shareholders. The Board of Directors defines Arkema's strategy and oversees its implementation. It is supported by three specialised committees.

In 2023:

93%
meeting
attendance rate

7
Meetings including one day dedicated to the Group's strategy

▼ **Thierry Le Hénaff,**
Chairman and Chief Executive Officer

▼ **Isabelle Boccon-Gibod,**
Director representing the Fonds Stratégique de Participations (FSP)

▼ **Séverin Cabannes,**
Independent Director

▼ **Marie-Ange Debon,**
Independent Director and Chairwoman of the Audit Committee

▲ **Ilse Henne,**
Independent Director

▲ **Ian Hudson,**
Independent Director and Chairman of the Innovation and Sustainable Growth Committee

▲ **Florence Lambert,**
Independent Director

▲ **Hélène Moreau-Leroy,**
Independent Director and lead Director

▼ **Sébastien Moynot,**
Director representing BPifrance

▼ **Nathalie Muracciole,**
Director representing employees

▼ **Nicolas Patalano,**
Director representing employee shareholders

▲ **Thierry Pilenko,**
Independent Director and Chairman of the Nomination, Compensation and Corporate Governance Committee

▲ **Susan Rimmer,**
Director representing employees

▲ **Philippe Sauquet,**
Independent Director

To strengthen its expertise, the Board of Directors has three specialised committees.

The Audit and Accounts Committee, composed of **Marie-Ange Debon** (Chairwoman), **Isabelle Boccon-Gibod, Séverin Cabannes, Ilse Henne** and **Ian Hudson.** This committee ensures the quality of internal control and the reliability of information provided to shareholders and financial markets.

The Nominations, Compensation and Corporate Governance Committee, composed of **Thierry Pilenko** (Chairman), **Hélène Moreau-Leroy, Nathalie Muracciole** and **Philippe Sauquet**. This committee makes recommendations concerning membership of the Board of Directors, compensation policy for the Directors (including the Chairman and CEO) and corporate governance best practices.

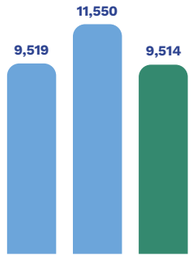
The Innovation and Sustainable Growth Committee, composed of **Ian Hudson** (Chairman), **Isabelle Boccon-Gibod, Florence Lambert, Sébastien Moynot** and **Susan Rimmer.** This committee is responsible for assessing how well Arkema's innovation and strategy help overcome environmental challenges and support sustainable growth. Like the other two committees, it contributes to the comprehensive review of all the Group's environmental, social and governance (ESG) and non-financial issues.

FINANCIAL AND NON-FINANCIAL PERFORMANCE

FINANCIAL PERFORMANCE

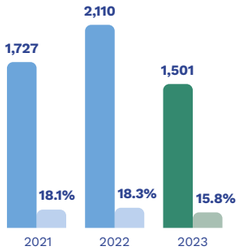
The Group delivered a solid financial performance in 2023 in a more challenging macroeconomic environment than in 2022, with EBITDA of €1.5 billion, in line with annual guidance, and excellent cash generation.

REVENUE
(in € millions)



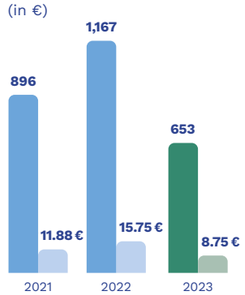
Group revenue totalled €9.5 billion, down 16.1% like-for-like and at constant exchange rates compared to 2022.

EBITDA
(in € million)
AND EBITDA MARGIN
(in %)



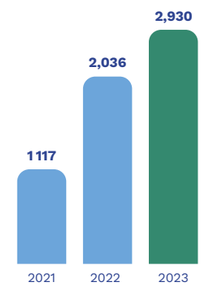
EBITDA, at €1,501 million, is down on last year's very high basis of comparison. The EBITDA margin remains solid in this context of weak demand at 15.8% (18.3% in 2022).

NET INCOME
(in € million)
AND NET EARNINGS PER SHARE
(in €)



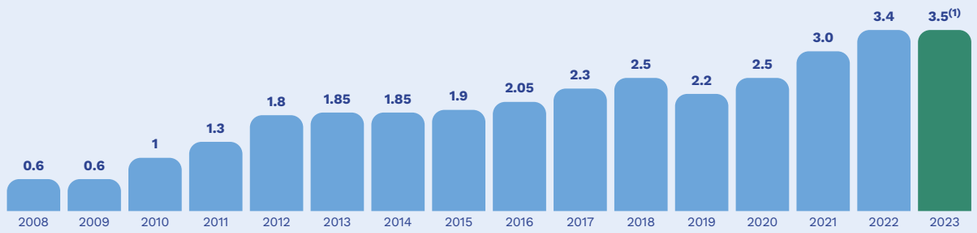
Adjusted net income totalled €653 million or €8.75 per share (€15.75 in 2022).

NET DEBT INCLUDING HYBRID BONDS
(in € million)



Net debt including hybrid bonds amounted to €2,930 million at end 2023, including payment of a dividend of €3.40 per share for financial year 2022 totalling €253 million, the cost of the Group's share buy-backs of €32 million and the payment of interest on hybrid bonds of €16 million. It represents 1.95 times EBITDA for the past twelve months.

RISING DIVIDENDS SINCE 2008
(€ per share)



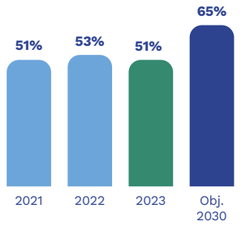
(1) Dividend recommended at the Shareholders' Annual General Meeting on 15 May 2024.
The dividend is a key component of the Group's shareholder return policy.
The payout ratio is 40%, in line with the Group's long-term objective.

MONITORING CSR OBJECTIVES AND RESULTS

Arkema strives for continuous progress in its CSR activities based on specific indicators and targets, through three commitments:
- Delivering sustainable solutions driven by innovation
- Being a responsible manufacturer
- Strengthening its position as a major employer and maintaining open dialogue with internal and external stakeholders.

1. SUSTAINABLE PRODUCTS

PROPORTION OF IMPACT+ SALES(1)

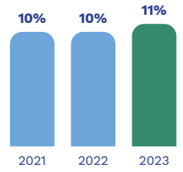


To strengthen its commitment to sustainable products, the Group has been evaluating its portfolio of solutions against sustainability criteria for several years through its Archimedes programme. The proportion of sales making a significant contribution to the UN SDGs is known as ImpACT+.

In 2023, the percentage of sales corresponding to ImpACT+ solutions was 51%. Despite ongoing efforts by the business lines to improve their solution portfolios, the share of ImpACT+ sales fell in 2023 due to the combined effect of significant variations in selling prices and volumes in the solution mix.

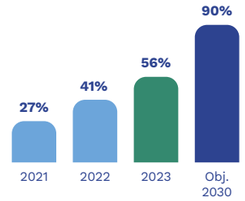
(1) The proportion of sales making a significant contribution to the SDGs (ImpACT+) is based on an assessment of 84% of the Group's sales to third parties in 2023.

PROPORTION OF SALES FROM RENEWABLE OR RECYCLED RAW MATERIALS



The proportion of sales from renewable or recycled raw materials includes sales based on a content of at least 25% renewable or recycled raw materials. Renewable raw materials include bio-based materials (derived from plant or animal biomass) and those certified as renewable using a mass balance approach.

PORTION OF SALES COVERED BY A LIFE CYCLE ASSESSMENT



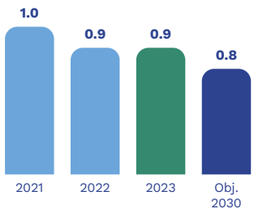
In 2023, 56% of sales were subject to a Life Cycle Assessment (LCA). This figure, which is higher than in 2022, is explained by the optimisation of processes and tools put in place to meet the growing demand from customers for LCA data, especially the carbon footprint.

In view of the positive progress made, the Group has revised its 2030 target from 50% to 90% of sales covered by a full LCA.

2. RESPONSIBLE MANUFACTURING

Safety: two indicators with targets for 2030

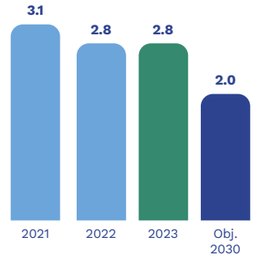
TRIR
(Total Recordable Injury Rate per million hours worked)



The TRIR for 2023, which includes accidents among Group personnel and contractors, was 0.9, stable compared to 2022. This good result is the result of measures taken in recent years to raise awareness of Arkema's safety requirements among our employees and contractors.

Arkema's TRIR performance is among the best in the chemical industry.

PSER
(Number of process safety events per million hours worked)

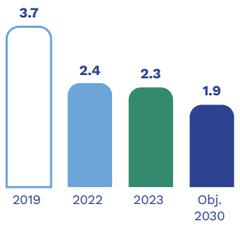


The Process Safety Event Rate (PSER) was 2.8 in 2023, unchanged from 2022. This consolidation of the Group's performance is underpinned by initiatives such as the reinforcement of the Process Safety culture through the 10 Process Safety Must Haves, the strengthening of the mechanical integrity inspection programme for equipment and circuits, and the monthly monitoring of events by the Executive Committee.

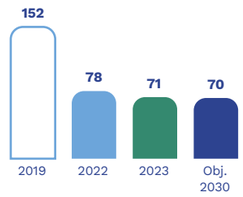
Climate and environment: five targets for 2030

The two climate indicators relate to Kyoto Protocol scopes 1 and 2 on the one hand and scope 3 (all categories) on the other. The value of absolute GHG emissions is compared to 2019.

CLIMATE SCOPES 1+2
(scope 1+2 greenhouse gas emissions in Mt CO_2e)



CLIMATE SCOPE 3
(scope 3 greenhouse gas emissions in Mt CO_2e)



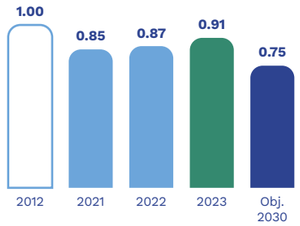
In 2023, the Group strengthened the ambition of its Climate Plan with new targets for 2030, aligned with a 1.5°C warming trajectory by 2100 compared to pre-industrial levels. These targets have been endorsed by the independent global Science Based Targets Initiative (SBTi).

2030 TARGETS:
- **48.5% reduction in Kyoto Protocol scope 1 and 2 greenhouse gas emissions compared to 2019.**
- **54% reduction in Kyoto Protocol scope 3 greenhouse gas emissions compared to 2019.**

These new targets pave the way for Net Zero by 2050.

The energy, water and air targets are based on Environmental Footprint Performance Indicators (EFPIs), which reflect changes in the Group's scope of activity and plant production. They are reported in absolute terms with reference to 2012.

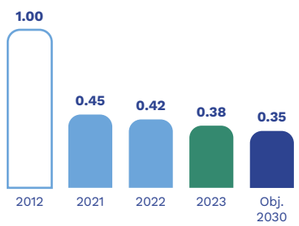
ENERGY
(net energy purchases EFPI)



In 2023, energy performance deteriorated by 4% owing to the decrease in overall production volumes, which affected the steam balance of the acrylic monomer sites.

2030 TARGET:
25% reduction in net energy purchases in terms of EFPI compared to 2012.

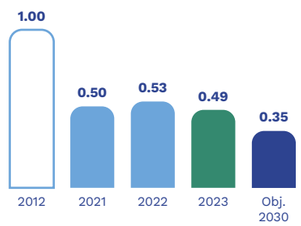
EMISSIONS INTO WATER
(Chemical Oxygen Demand [COD] EFPI)



In 2023, the COD EFPI was 0.38, continuing its decline towards the target of 0.35 by 2030 thanks to the Group's ongoing actions.

2030 TARGET:
65% reduction in COD EFPI compared to 2012.

EMISSIONS INTO AIR
(Volatile Organic Compounds [VOC] EFPI)



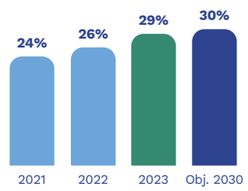
In 2023, the VOC EFPI was 0.49, down from 2022, putting it back on track to meet the 2030 target thanks to continued action on treatment performance and process efficiency.

2030 TARGET:
65% reduction in VOC emissions in terms of EFPI compared to 2012.

3. EMPLOYER OF CHOICE AND OPEN DIALOGUE

Employee development and diversity

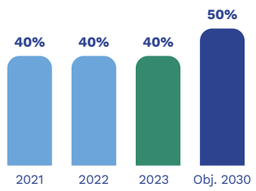
PROPORTION OF WOMEN AMONG SENIOR MANAGEMENT AND EXECUTIVES



In 2023, the proportion of women in senior management and executive positions reached 29%, three points higher than in 2022 (26%). This increase is largely the result of the programme implemented since 2016 to promote equal opportunities and gender diversity.

2030 TARGET:
Proportion of women among senior management and executives: 30%.

PERCENTAGE OF NON-FRENCH EMPLOYEES AMONG SENIOR MANAGEMENT AND EXECUTIVES

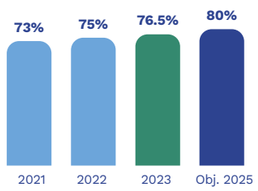


In all countries where Arkema operates, we prioritise local skills and expertise at all levels including senior management and executives.

2030 TARGET:
50% non-French nationals among senior management and executives.

Responsible Purchasing

PROPORTION OF PURCHASES FROM RELEVANT SUPPLIERS COVERED BY A TFS ASSESSMENT



In 2014, Arkema joined the Together for Sustainability (TfS) initiative created by six European chemists. By the end of 2023, more than 2,000 of the Group's suppliers had been assessed against CSR criteria over the previous three years. The proportion of purchases from relevant suppliers covered by a TfS assessment was 77%.

2025 TARGET:
80% of purchases from relevant suppliers to be covered by a TfS assessment.

As part of its commitment to sustainability, Arkema had this document printed on FSC-certified paper from well-managed forests by printers with imprim'vert® certification.

Corporate headquarters: Arkema France
420 rue d'Estienne d'Orves
92705 Colombes Cedex
France
Telephone: +33 (0)1 49 00 80 80

Dircom: 4874E/05.2024/32. Published by Arkema's Corporate Communication Division. Consulting, design, editorial support and production: TERRE DE SIENNE
Photo credits: Getty Images, Adobe, Bruno Mazodier, Arkema, Bostik. ISections opening illustrations created by AI

Communication Department

A *French société anonyme* registered in the Nanterre Business Register under number 319 632 790

arkema.com