



Innovative glass  
for a better world



2020/2021

*Sustainable Development Report*

# Dear partners



I am delighted to present the Arc group's 2020-2021 Sustainable Development report.

This report highlights all the actions we have taken to strengthen our environmental, social and governance commitments.

As the world leader in tableware and a signatory of the Global Compact since 2003, the Arc group participates and contributes to the ten principles defined by the United Nations. So far, we have made

significant progress on our commitments, while the pressing issue of climate change is forcing us to stretch ourselves

We have therefore reviewed our business model, which must now focus on responsible manufacturing while also catering to consumer trends and expectations.

The goals we have set ourselves are both ambitious and challenging, thanks to careful management of our action plans by our teams around the world, so that we can fulfil our ambitions.

As an industrial glass group, the design of our products and services must be influenced by environmental performance.

We therefore want the new standard for Arc designs to integrate eco-design principles, from the choice of raw materials to packaging, through all stages of production and supplier selection, by 2025.

At our historic Arc France site in the Hauts-de-France region, we plan to reduce carbon emissions by 37% by 2030. This is a very ambitious target and one that we can achieve by working together with all our stakeholders. We have a common goal: to preserve our planet and build a better world for our children.

In 2020 and 2021, we saw how external events could suddenly turn everything upside down and jeopardize our plans, no matter how large or pressing they were. The Arc Group coped with this unheard of situation thanks to the great efforts of its teams, to whom I would like to express my sincere thanks.

This report presents our achievements and the Group's sustainability ambitions for the coming years to provide our customers and end-users with innovative glass for a better world.

**Nicholas Hodler**  
Chairman & CEO



Group



Strategy



Circular  
Economy



Teams





# Group Company context

## HISTORY

The Arc Group is the world leader in tableware, designing innovative and sustainable glass solutions for everyday use, devoted to the pleasure of drinking, eating and adorning our homes.

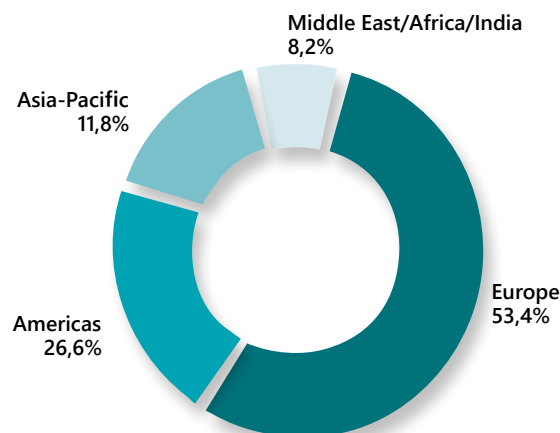
The company was founded in 1825 in the North of France, in Arques, where the Group still has its headquarters and its Research and Development division. The Arques site is the largest glass tableware production site in the world and the eighth largest industrial site in France.

With production units in France, the US, China and the United Arab Emirates, the Group produces **over 4 million items each day**. Arc employs **7,500 permanent staff worldwide, including 4,400 in France**, and generated sales of €740 million in 2021.

Across the brands Luminarc®, Arcoroc®, Arcopal™, Cristal d'Arques® Paris et Chef&Sommelier®, Arc caters to both the public and trade.

The Group operates in many markets, including supermarkets, hotels, restaurants, bars and cafés, wine merchants and local authorities (schools, hospitals, retirement homes and company canteens). It also offers customised solutions for industry such as candle jars, washing machine glass and promotional products.

## SALES BY REGION



## 3 DISTRIBUTION CIRCUITS

to cover all sectors

Designing, manufacturing and distributing tableware and trade glassware.

### Consumer Goods - 44% of total sales

Tableware for the general public.

Main brands Luminarc®, Arcoroc®, Arcopal®, Cristal d'Arques® Paris, private label.

### Food Service - 17% of total sales

Tableware for hotel, restaurant and local authority professionals.

Main brands Arcoroc®, Chef&Sommelier®.

### B2B - 39% OF TOTAL SALES

Customised solutions for professionals: industry, advertising, premium and loyalty.





## KEY FIGURES



**7 500**

PERMANENT  
STAFF



**4,1 M**

ARTICLES  
MADE EACH DAY

**4**

PRODUCTION  
SITES



**160+**

ESTABLISHED IN  
OVER 160 COUNTRIES



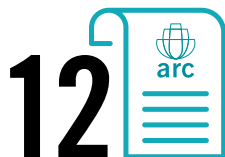
**5**

BRANDS



**3**

3 DISTRIBUTION CIRCUITS  
Consumer Goods  
Food Service, B2B



**12**

PATENTS FILED  
EACH YEAR



**740 M**

EURO SALES  
IN 2021



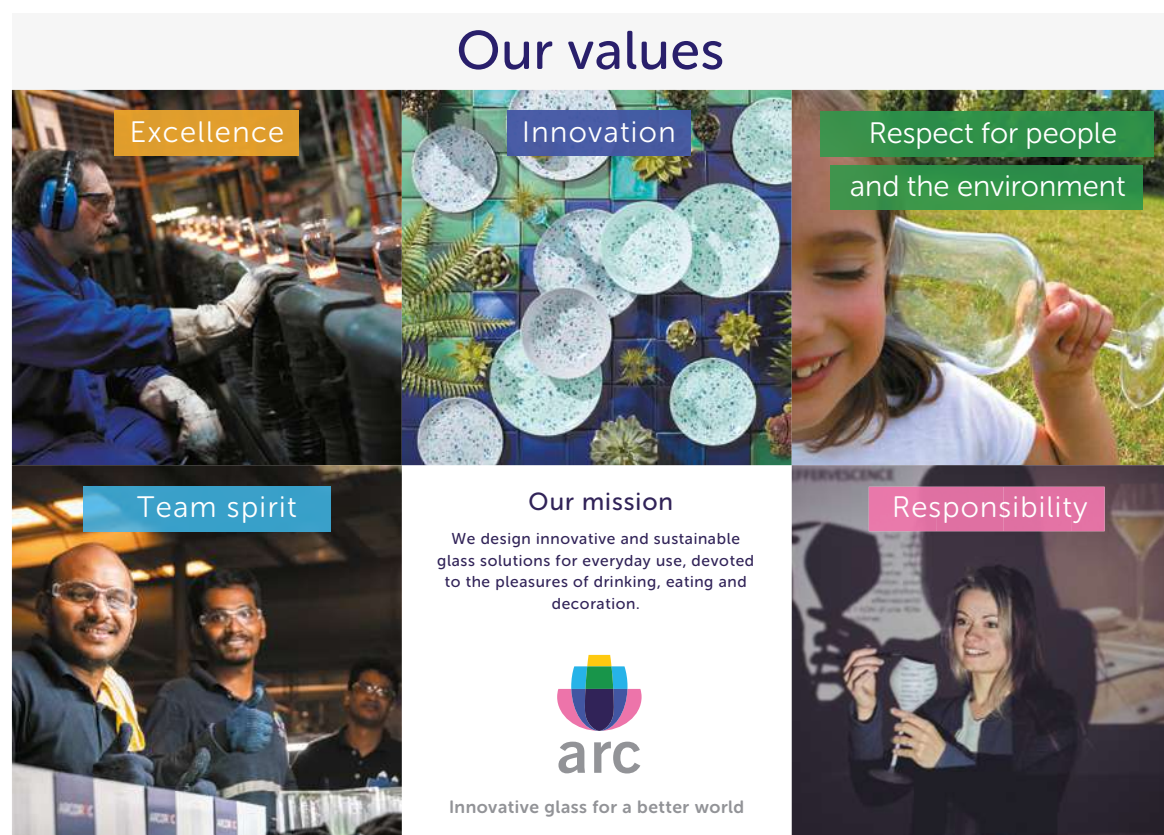
**74 M**

EUROS  
INVESTED



In 2021, we presented the Group's new vision for the future: "Innovative glass for a better world". This slogan, which now accompanies our official logo, gives meaning to the daily commitment of Arc's 7,500 employees whatever their position in the company. We also share values: Excellence, Innovation, Respect for people and the environment, Team spirit and Responsibility.

Values that unite and guide each of us in our work with a shared mindset.



In an economy weakened by two years of health crisis and faced with stiff competition, we have an ambitious investment plan to guarantee Arc's growth and thereby secure the Group's long-term future.

This plan is based on 4 strategic priorities shared throughout the Group:



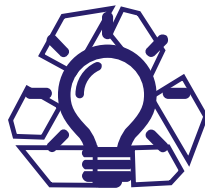
**Be Safe**



**Deliver operational  
performance and  
profit**



**Empower  
our people**



**Innovate  
sustainably**

These 4 strategic priorities underpin our daily actions. They guide us and give meaning to our daily tasks. In this way, everyone contributes to the company's success. Sustainability is increasingly becoming a guiding principle for our customers and partners.

As a global industrial group, we strongly believe that Arc's business must be managed with the best possible balance between social, environmental and profitability aspects. This is now the core of our strategic objectives. Consequently, we integrate the 3 social, economic and environmental pillars of sustainable development into our operations.

For example, in 2021 we invested €7.4m to reduce our environmental impact. We also develop solutions that actively support the transition to a new circular economy model. Our innovative and sustainable glass containers, which are an excellent alternative to single-use plastic, show our commitment to helping build a more sustainable world.





The vision, the mission, the values and strategic priorities that form the governance of our arcWAY management system.

This system has been developed with staff able to contribute to the recent shift in our values and management model by taking part in working groups.



ArcWAY defines and implements shared practices and standards across the Group to improve our overall performance while satisfying our employees, customers and partners. It is a management system based on guidelines defined at Group level covering each of the key processes; each line can be enhanced with standards or practices meeting local requirements or characteristics.

Among other aspects, we define our standards and practices in the areas of safety, quality, environment and corporate social responsibility.

The management of our operations, procedures and other standards associated with these activities are based on ISO standards or globally recognized benchmarks and integrate the needs and expectations of our stakeholders.

We also want to continue and intensify each person's involvement, by introducing a genuine culture of continuous improvement in our operations and encouraging the transfer of knowledge between employees.

ArcWAY is also implemented through Group programs such as safety training and raising awareness for managers, the Responsible program for sustainability, the development of our management model and various initiatives detailed hereafter.



## ETHICS

Integrity, reliability and responsibility are core to the actions and values of the Arc Group.

This commitment is reflected in a growing culture of ethics, compliance, responsible purchasing and related initiatives.

As part of our management system, we pledge to regularly review our policies to adapt them to regulatory and/or social developments and to continue fostering an ethical culture within the Arc Group.

The Code of Ethics is key to the management of Arc's business, both internally and in commercial relationships, throughout the Arc value chain.

It is the centerpiece of our compliance and ethics policy framework and a key component of the arcWAY Management System. The Code of Ethics applies to all Group subsidiaries worldwide. It describes how all Arc staff should behave internally and externally to our stakeholders, to comply with legal obligations and to prevent any non-compliant practices that could negatively impact Arc's business, results and reputation.

The Code of Ethics covers the following aspects:



Respect for people:  
in terms of health, safety at work,  
preventing harassment



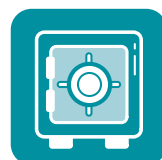
Equal opportunities  
in employment and  
non-discrimination



Respect  
for the law



Respecting  
the environment



Protecting  
our company  
and our assets



Respect for confidentiality  
of information and  
intellectual property



Anti corruption  
and respect for  
anti-trust laws


































Updated, disseminated and easily accessible procedures detail the Code of Ethics components.

The ethics whistleblowing procedure specifies, for example, how it is dealt with, from examining its relevance to the investigation leading to corrective action or potential disciplinary actions. A specific e-mail address has been set up for reporting breaches of the Code of Ethics ([ethics@arc-intl.com](mailto:ethics@arc-intl.com)). Both the identity of the whistleblower and the identity of those involved are kept strictly confidential.

Communication campaigns are regularly conducted to publicize the Code of Ethics and related procedures. A Code of Ethics training program has been in place since 2018 for all Group employees with access to the internal digital training platform, Arc University.

All new employees who join the company are informed of this Code and sign a document certifying that they have read it. The Code is available on the Group's intranet at all times.

	Arc France	Arc Middle East	Arc Glass China	Arc North America
				
				
				
				
				
				
	Silver 55/100			
				
				
				

 Certified  Member  Pending



### Global Compact

The Global Compact, launched in July 2000, is the starting point for all organizations to support and contribute to the attainment of the 17 United Nations Sustainable Development Goals.

Arc has been a signatory since 2003, thereby providing a universally recognized framework for its sustainable development efforts.

### Ellen MacArthur Foundation

Founded in 2010, the Ellen MacArthur Foundation is dedicated to accelerating the transition to the circular economy.

The Arc Group signed a global membership with the Foundation at the end of 2021, for a minimum of 3 years. This membership will enable the Group to accelerate its transition, develop a collaborative network with other Foundation partners, and to participate in new circular economy projects.

### SMETA-4P

The SEDEX network to which Arc belongs is recognized worldwide. It hosts the world's largest collaborative platform to promote and strengthen responsible supply chains.

It is used by more than 50,000 members in over 150 countries to manage their performance on labor rights, health and safety, environmental protection and business ethics.

The subsidiaries of the Arc Group carry out a SMETA-4P (Sedex Members Ethical Trade Audit) every two years on social, safety, ethical and environmental criteria. An update of this audit is planned for 2022 on the Arc France site.

### Ecovadis Medal 2021

Ecovadis is a collaborative platform that has developed a world-renowned CSR certification used in 160 countries by 65,000 companies. This certification is central to Arc France's CSR commitment.

Following its bronze medal in May 2020, Arc France was awarded the silver medal by Ecovadis in June 2021 for its Corporate Social Responsibility (CSR) actions in the following areas: Environment, Human Resources, Ethics and Sustainable Procurement.







MEKKANO  
Arcoroc



VILLENEUVE  
Chef & Sommelier



WAVY  
SMART CUISINE  
Luminarc



ELECTRIC GOLD  
Luminarc



SEQUENCE  
Chef & Sommelier



PURE BOX ACTIVE  
Luminarc



RENDEZ-VOUS  
MACASSAR  
Cristal d'Arques



BERTILLE  
Arcopal



CONTEMPARY  
Cristal d'Arques



# Strategy Sustainable Development

Arc is committed to sustainable transformation on a daily basis. Our sustainable development strategy is based on four pillars, integrated into the Group's arcWAY management system and based on compliance with applicable regulations, integrity and responsibility in all our operations.

We aim to involve our stakeholders in our sustainable development roadmap. There are many challenges; prioritizing and communicating them are key to success.

We take a pragmatic and structured approach to understanding the interests of all our stakeholders by conducting a materiality analysis with each subsidiary to prioritize issues. A consolidated materiality matrix will be published in the future.

The teams are working to define multi-year targets to make progress on the most important sustainability issues. All subsidiaries will be aligned with a shared vision.

This vision is part of a system with tools for continuous improvement. Spearheaded by the Group Executive Committee, it is deployed in each entity, according to their specific needs, and is supported by all the Group's teams, who enhance it.

Significant progress was made in the deployment of this vision in 2020 and 2021:

- evaluating and adjusting the Group's strategy, by introducing ambitious programs,
- developing the skills of local CSR teams,
- involving our stakeholders in future challenges.

Because we only work successfully on things we understand and can measure, we raise awareness of environmental issues among Arc Group employees by using a network of experts and contacts within the company's management.



**Initiate a circular economy model by promoting the reuse of products and materials and recycling** throughout the company's value chain.

Producing the Arc collections as close as possible to our markets means we can minimize logistical movements, particularly by sea. This is what we do with our 4 production sites around the world.

Thanks to its natural benefits, glass is a perfect alternative to plastic when it comes to environmental issues. We support and assist projects that encourage reuse. We are also committed to working with local political, economic and academic players to invent sustainable responses to societal and environmental challenges.

We help set up collection circuits for glassware and tableware from the food service industry and are industrializing the use of recovered glass in our French plant's production.



**Reduce our environmental footprint by lowering our energy and water consumption and decarbonizing our manufacturing processes.**

Each day, our Research and Development division focuses on developing new technologies to preserve water and air and reduce our direct impact on climate change. These include developing new melting technologies, setting up closed and controlled water networks, modernizing heat exchange installations with improved energy performance and treating the flue gases leaving the installations.

By 2030, we will reduce our CO<sub>2</sub> emissions at the Arc France site by more than a third, our fossil fuel consumption by nearly 40% and our water withdrawals by 80%. In a process of continuous improvement and long-term sustainability of our practices, at the end of 2021, Arc France committed itself to certification of its energy management system according to the ISO 50001 standard by incorporating its requirements into its integrated management system.





### Build a safe and inclusive work environment on every level

As an industrial group, the health and safety of our employees are priorities for us. Multi-year plans are being implemented in each subsidiary to make work and facilities safer and to develop a safety culture consistent with our ambitions. These plans are based on risk prevention and teamwork by encouraging everyone to take responsibility for their own safety and that of their colleagues.

We believe that diversity is a source of value for all, and we encourage all employees to participate and contribute, knowing that they will be respected, heard and acknowledged.

Drawing on the talent of its teams, the Arc Group invests in training its employees throughout their careers while passing on its know-how through work-study programs.

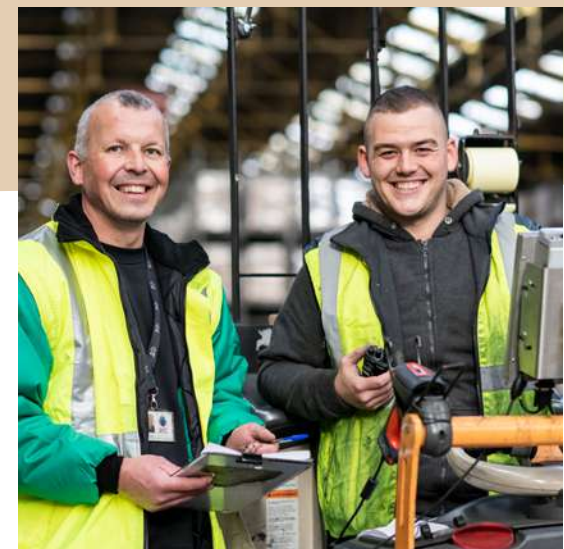


### Participate in ecosystems development

The company's history of almost 200 years reflects its strong regional roots. Thanks to our significant role as an employer and the extent of our facilities, we contribute to the vitality of the areas in which we operate.

We are also committed to working with local subcontractors to preserve the economic fabric of the regions and to favor local purchasing.

We invest in local communities by developing partnerships wherever we operate and by engaging in constructive dialogue with our local stakeholders.





## Our contribution to SDGs

The 17 Sustainable Development Goals (SDGs or Agenda 2030) endorsed in September 2015 by 193 countries at the United Nations, following the Millennium Development Goals (MDGs), are an action plan for peace, humanity, the planet and prosperity, requiring multi-stakeholder partnerships to be formed.

With the global health environment uncertain and only eight years left to achieve the SDGs, we need to clarify our impacts and ambitions to get back to the heart of the sustainability endeavor, while stepping up and improving progress toward the global goals.



## Sustainable Development Goals Cross Reference Table

	We make more efficient use of resources in terms of consumption and production.	20, 23, 25, 27-28
	We are modernizing our infrastructure and adapting our industry to make it sustainable.	24-28
	We are improving our energy efficiency.	24-25
	We are striving to introduce sustainable management of our consumption and production, focusing on the operation of our supply chain, involving our suppliers, customers and employees.	20-23, 28, 30-33
	We are careful to preserve water resources, minimize the use of chemicals, recovery, and invest in the treatment and reuse of wastewater.	27
	We train our employees and pass on our knowledge.	35-36, 40,41
	We promote partnerships.	33, 43, 44



# Circular Economy

## Our roadmap

**7.** Introduce a new glass material made from post-consumer waste glass.

### 7. RECYCLING

**6.** Access existing used glass collection systems, or develop partnerships with other stakeholders to launch a new system.

### 6. RECOVER

**5.** Develop circular economy solutions with our customers and end users.

### 5. CLIENT SOLUTIONS

### 1. DESIGN & INNOVATION

**1.** Introduce eco-design into our approach and ensure that 100% of new products are eco-designed by 2025.

### 2. SOURCING

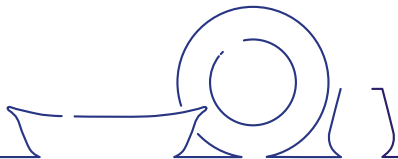
**2.** Be a global leader that sources locally, ethically and with respect for the environment.

### 3. PRODUCTION

**3.** Set and achieve targets in terms of CO2 emissions, energy and water consumption, waste reduction, etc.

### 4. PACKAGING & LOGISTICS

**4.** Develop more responsible packaging and reduce the impact of our supply chain



Since 2020, Arc France has taken a 360-degree approach and brought together experts from all stages of the product's life, from design to end-of-life, to collectively define the Responsible program. The program was conceived out of this cross-disciplinary approach and now includes nearly 50 projects. Each aims to minimize negative impacts on the Earth and its limited resources, and maximize the positive impacts of our products and services.

This program supports the Group's transition by integrating environmental aspects at every stage (product design, raw material supply, manufacturing, logistics, use and end-of-life) and by innovating to design future solutions. Each project is led by a dedicated team with set targets and resources. The overall program is regularly reviewed by the Arc France Management Committee.

The Group aims to build on the French experience to extend the Responsible program to the entire Group from 2022, depending on the specific context of each entity.

The ambition of the approach was rewarded by the company's membership to the Ellen MacArthur Foundation at the end of 2021. We are hopeful that even more innovative ideas and partnerships will emerge over the next 3 years.

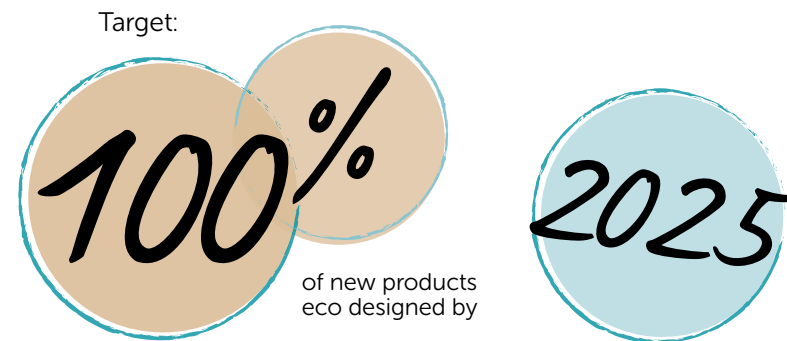


## Making eco-design our development norm

After mobility and housing, the consumption of private goods and services represents about 19.4% of the average French person's carbon footprint (source: Carbone 4 - 2019). Every product has an impact. More than 80% of the environmental impacts of a product are established during the design phase. Eco-design is a preventive approach that aims to integrate the environment into the design and development of products (goods and services). This approach is governed by ISO standards. Eco-design takes into account the entire value chain, the lifecycle of the products and all their required components.

Two factors enable product eco-design: reduction of environmental impacts for equivalent functions and increase in services rendered for the same environmental impact.

In 2021, we launched a test project with the aim of developing the culture of eco-design in all new developments. This ongoing project has brought together the design, marketing, sales, industrial operations and CSR teams. The first eco-designed products will be released by late 2023. New products developed for the Group's brands will follow the eco-design principles resulting from this first project from 2025.



This approach is based on a multi-criteria evaluation of the environmental impacts from the Life Cycle Assessment. This scientifically recognized method, governed by ISO standards, was first conducted in 2020. This one concerns 9 undecorated products. The study was reviewed and commented on by a panel of experts to substantiate the hypotheses.

We are now internalizing LCA expertise at Group level to identify and quantify areas for improvement throughout the value chain.





## Reducing the environmental impact of our supply chain

The supply of raw materials and accessories required to manufacture our products, as well as the logistical flows generated by our business, have environmental impacts, both on the climate and on biodiversity. For Arc France, all the upstream and downstream logistic flows represent about 43,000T of CO<sub>2</sub> per year. We strive to reduce them by opting for sustainable sources, shorter distances traveled by these materials and the use of non-road transportation.

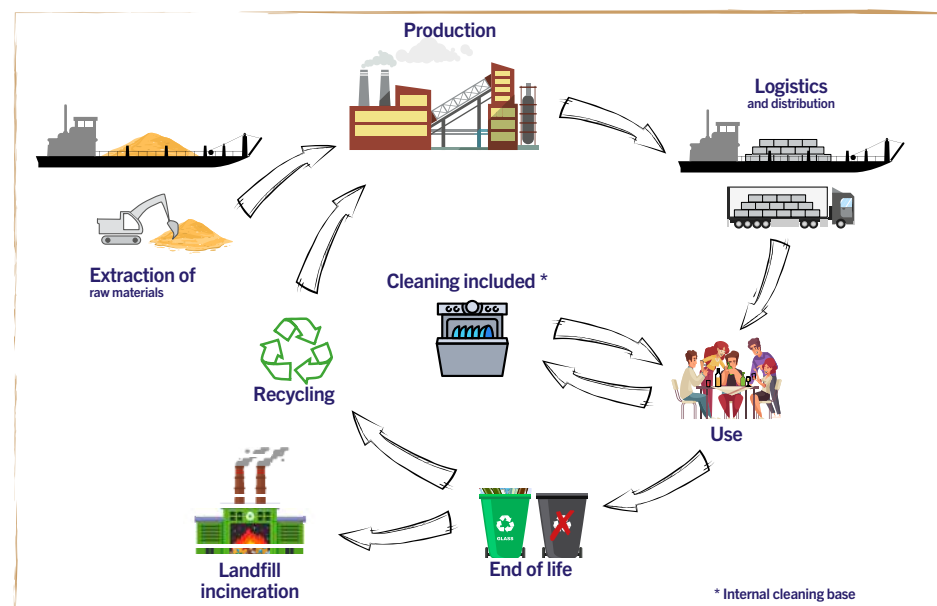
Moreover, all our suppliers have signed our "sustainable development" charter, which includes environmental, ethical and social commitments.

Our main suppliers are assessed each year.

Our Life Cycle Analyses identify priority areas for improvement based on the impact of the various raw materials used in glass making. Substitute materials are identified and approved by the R&D and Purchasing teams. We choose sand from quarries to produce high quality transparent glass. Unlike construction sand, it is not sourced from river or beach dredging and has not been under environmental scrutiny since the 2018 OECD report.

Our lids and accessories come from suppliers chosen by the Arc purchasing and sourcing teams in compliance with European standards. As part of our purchasing policy, in France, we approve suppliers as close as possible to our production site. Many of our plastic lids are made in France, while our wooden and cork closures come from Spain and Portugal.

Arc France's Purchasing teams work closely with French suppliers to make our supplies even more local, thereby encouraging trade and reducing the carbon impact of transporting accessories.





98%

of Arc France  
raw materials  
suppliers are  
European



Similarly, to limit the impact of the supply of raw materials to our production sites, we are careful to prioritize local sources.

For example, in France, 98% of our raw material suppliers are European and more than 70% travel less than 500 kilometers to be delivered to us.

Our decision to prioritize local sourcing has resulted in the Group's brands being awarded the Origine France Garantie certification for products made in France. This certification reassures consumers as to the origins of a product by providing a clear, objective indication of where it was made. To be certified, at least half of the value of the product must come from work done in France (design, source of raw materials and production). The process is transparent and assessed by a certification body.

As well as this local approach, we favor non-road means of transport. More than 70% of our raw material volumes are transported by waterway in France. In partnership with the Voies Navigables de France (VNF), some of our raw materials are

transported by barge. Bear in mind that one barge load is equivalent to 200 trucks. These efforts have reduced the CO<sub>2</sub> emissions linked to our raw materials transport by more than 37% compared to road transport.



In France, most of the carbon impact of our logistics is related to shipping to our customers, mostly by road. For many years, the transport teams have been using rail transport solutions on existing lines. In this way, over 15% of greenhouse gas emissions related to transporting goods to customers have been reduced thanks to this modal shift, and certain destinations such as Italy are mainly delivered by rail.

Similarly, more than 85% of the raw materials used in our US facility are transported by rail. This modal shift significantly reduces greenhouse gas emissions related to material transport.

A substantial share of our CO<sub>2</sub> emissions derives from the use of carbonated raw materials. The R&D department has been searching for alternatives to these raw materials for many years and assessing their impact on glass making. These alternatives also boost productivity.



One of the main alternatives considered is the replacement of carbonated material by decarbonated material. This option can save an average of 12% of CO<sub>2</sub> emissions per ton of glass produced. This figure is estimated to be around 3% when taking into account the external impact upstream of the site for quicklime production. This technology requires minor adaptations to the site's logistics and furnaces. It is currently being industrialized.

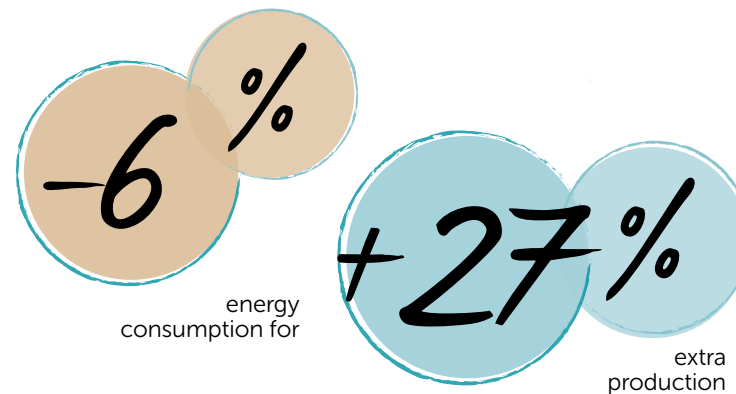




## Innovating in our production processes for the climate and the environment

Glass production is an energy-intensive industry. Improving the company's energy efficiency has always been an opportunity for Arc. This approach has the dual advantage of limiting the impact on the climate and improving the Group's profitability, as energy accounts for around 30% of a product's price.

Our Chinese entity has started using solar panels to generate 8% of its electricity needs, with the aim of reaching 20% by the end of 2022. This plant is also ISO 50001 certified for its energy management system.

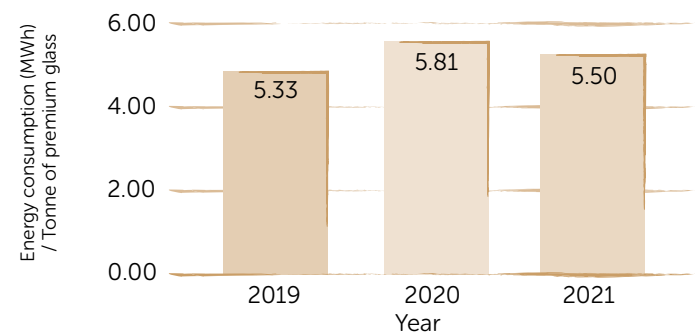


Since 2016, the Arc France site has had a team devoted to improving energy and environmental performance. One of the first steps was the introduction of an Energy Management System (2016).

In an effort to continuously improve and make our practices more enduring, in late 2021 we embarked on an ISO 50001 certification project in France by incorporating these requirements into our integrated management system.

These efforts have resulted in a 6% reduction in energy consumption in the Group since 2010, while production has increased by 27% over the same period.

Energy consumption (MWh) / Tonne of premium glass per year





The fusing of fluorosilicate glass requires electrical energy. That of soda-lime glass uses a fossil fuel, gas. Efforts to reduce energy consumption therefore have a direct impact on CO<sub>2</sub>. The Arc France site is subject to carbon quotas on emissions linked to natural gas consumption.

Each metric ton of premium-quality glass produced by Arc currently emits on average the equivalent of 0.96 metric tons of CO<sub>2</sub> versus 1.27 metric tons in 2010, i.e. 135,000 metric tons of CO<sub>2</sub> avoided every year. Emissions per ton of glass produced fell by 24.4% between 2010 and 2021.

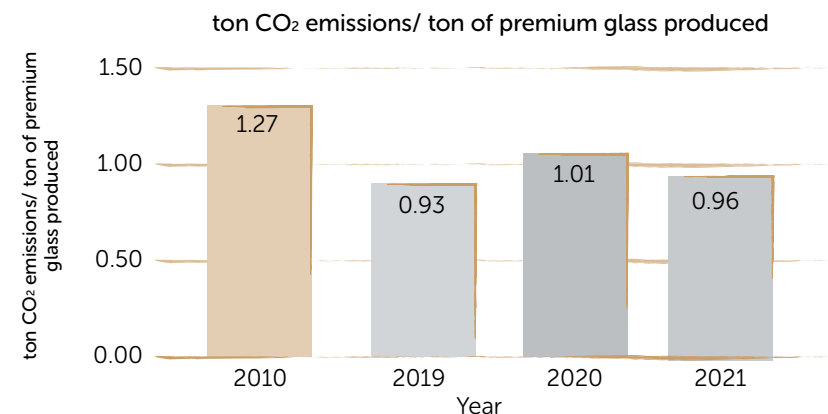
Our climate change target for the Group is to reduce our direct CO<sub>2</sub> emissions by 20% by 2030. This ambitious goal is becoming achievable thanks to the work of the Group's researchers and scientists.

-20%  
of CO<sub>2</sub> for 2030

We are currently developing a cutting-edge technological innovation that will enable us to gradually convert our soda-lime furnaces from natural gas to electricity in France over the next 8 years. Full-scale tests conducted in 2020 demonstrated the feasibility of the project.

Further testing is planned before rollout. The expected impact is a 40-60% reduction in total emissions from glass production.

Similar technology could be applied in other regions, with less impact on climate change, due to a more carbon-intensive energy mix.



## Innovating in our production processes for the climate and the environment

One of the glass industry's major impacts on the environment is its emissions of carbon dioxide (CO<sub>2</sub>), dust, nitrogen oxides (NO<sub>x</sub>) and sulphur oxides (SO<sub>x</sub>). In 2019, €1.6m was invested to reduce these emissions in our Chinese entity: a nitrogen oxide particle filter was installed on one of our furnaces. Thanks to this installation, emissions have been reduced to less than 400 mg/m<sup>3</sup> of smoke and dust to less than 15 mg/m<sup>3</sup>.

Our French site also installed this type of system several years ago, costing €3.7m. Stack emissions are monitored in compliance with local legal standards and methods.

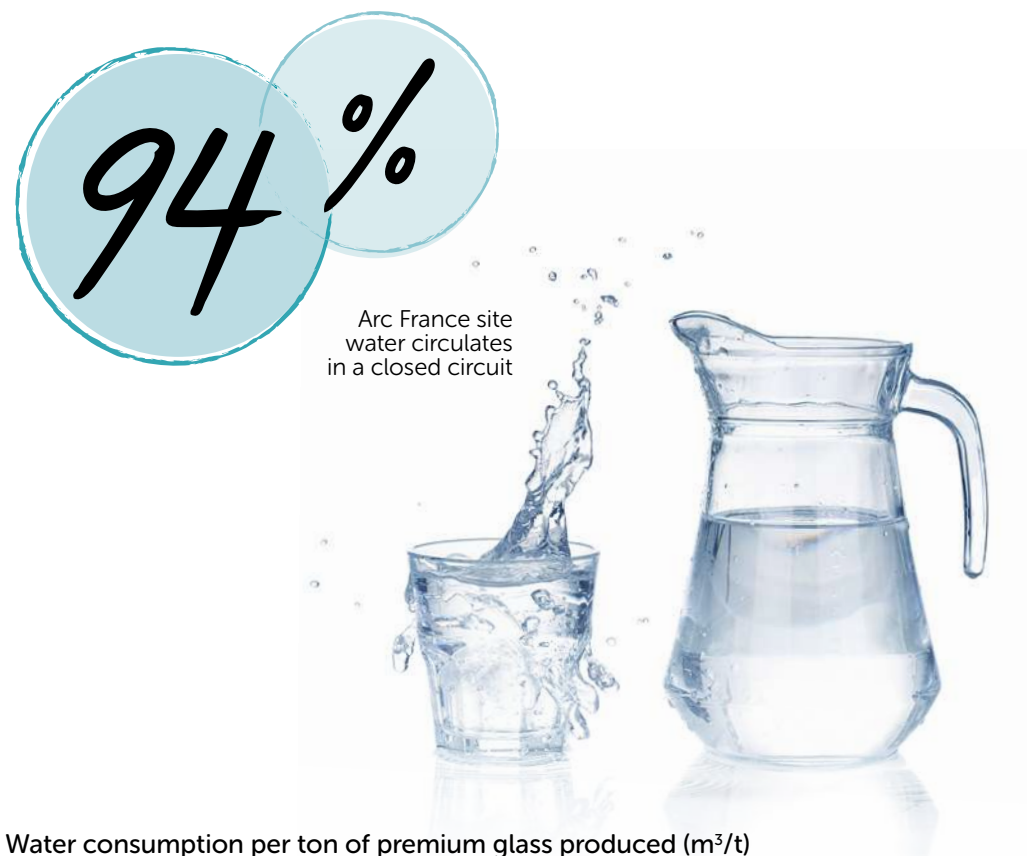
Entities in the United Arab Emirates, the US and China have also installed a permanent emissions monitoring system to provide early warning of any irregularities. Our French plant is finalizing the deployment of these technologies on all its soda-lime furnaces.



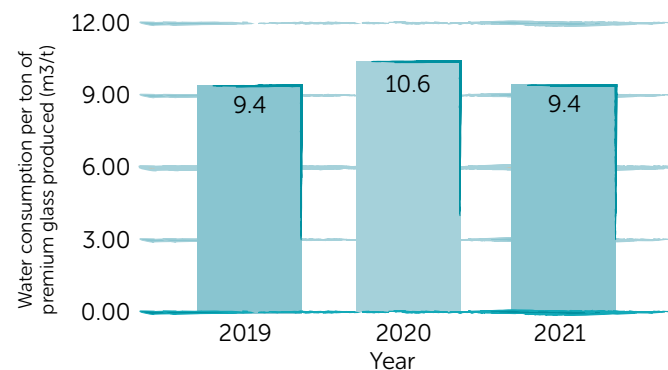
Water is essential to our processes, as well as to other local users where we operate. Our approach to water resource management is specific to each site and its local context. Glass manufacturing processes involve the melting of raw materials at temperatures above 1,000°C. Water is essential for cooling.

For many years, the Group has had a set of closed-circuit water networks in place, helping to ensure that no water is taken from the natural environment. On the Arc France site, for example, more than 90% of the water flows in a closed circuit. The goal is to further increase the proportion of water in closed or semi-closed systems. Equipment on the production sites (decanters, physico-chemical station, evaporator) ensures that the quality of water discharged complies with local regulations.

Our United Arab Emirates (UAE) production site is a benchmark site in terms of water management. It has two water treatment plants, which means that it does not discharge any wastewater. The first is a reprocessing plant for the site's domestic water, which ensures the quality of the irrigation water. The second is an industrial wastewater treatment plant. These two facilities recover, treat and reuse wastewater in a variety of ways, from manufacturing processes to watering the site's vegetable garden!



Water consumption per ton of premium glass produced (m<sup>3</sup>/t)





Glass is one of the only materials that can be recycled almost without loss. It can therefore be recast many times without impairing its qualities. Recycling our waste is a real concern for the Group and the internal reuse of our glass is already a well-established practice within our entities.

At present, 92% of the cullet produced in-house is remelted in the company's furnaces, which means that each item manufactured contains an average of 34% recycled glass.

Recycling cullet internally also enables the reduction of CO<sub>2</sub> emissions by lowering energy consumption.

Over 30 years ago, the excess cullet from our operations was dumped. Now, the internal cullet unfit for the production of clear glass is reused in a special type of glass, namely black glass. It is produced only in France and contains up to 75% of internally recycled cullet, 25% of which comes from the production of black glass and 75% of colored or decorated cullet from other operations.

Cullet that is not used internally is recovered. At Arc France, for example, it enters the fiberglass, abrasives, and packaging industries.

Almost 100% of the total cullet from the site is recovered. In 2021, our French site recovered nearly 123,000 tonnes of cullet produced internally, of which 13,100 tonnes were reused to make black glass.

We now wish to go further by integrating external cullet into our production. In 2020, our R&D team successfully completed a six-week industrial production test to determine our ability to include a significant share of cullet from household collections in the composition of our soda-lime glass without altering the quality of the resulting products.

To achieve the target of integrating 20% external cullet by 2025, an investment of over €3m will be made over the next few years to adapt the raw material intake and storage area, and to strengthen quality controls on the production lines.



### Using more responsible packaging

At our Arques site, we manufacture glassware but also a large proportion of the cardboard packaging used to pack our glass and tableware products.

Most of this packaging is produced from corrugated cardboard, a material that can be recycled up to seven times, to produce new paper, packaging or even insulation products for buildings. In this way, carbon emission cycles as well as water, energy and raw material consumption can be eliminated.

All Arc France's packaging production is FSC® certified. This environmental label certifies that the raw material for our packaging comes from responsibly and sustainably managed forests. In addition, we only work with packaging suppliers who also have the FSC® label. In this way, we guarantee our customers that our packaging is produced sustainably, responsibly and ethically.

As far as the printing on our packaging is concerned, we prioritize technologies that use fewer resources (ink, paper).

Apart from the cardboard, less than 5% of consumer packaging contains plastic. Most of this is polyethylene, an industrially recyclable and reusable plastic. The pallets are protected by a plastic film also made of polyethylene.





## Promoting reuse

According to the French environmental code, reuse refers to "any operation by which substances, materials or products that are not waste are used again for the same purpose for which they were designed". As part of the essential reduction of waste, particularly that related to single-use containers, reuse is a virtuous solution that is making headway.

The take-out market, which operates in tandem with home delivery, is growing rapidly. Lifestyle changes, such as the rise of working from home, are fueling this increase. Given that there are three to four disposable packages for each meal delivered, there is a lot of waste generated.

The French law of February 10, 2020, on the prevention of waste and the circular economy (AGEC law) has set a goal of reducing this waste in France. Since 2019, the European legislative framework, with the Single Use Plastic (SUP) Directive, has promoted a circular approach and eliminated many single-use plastic objects from our daily lives.

As a packaging supplier and alongside many other players in the food service industry, Arc signed a charter to reduce the environmental impact of packaging and develop reuse in the food service industry.

**The pledge was launched in February 2021 under the auspices of the French Ministry of Ecological Transition.** This charter aims to step up the fight against single use by getting ahead of the legislation and making ambitious commitments (find out more about the charter [here](#)).



To optimize the economic and environmental impact of reused containers, whether in the restaurant or retail sectors, standardization of packaging makes it possible to combine several stages, to facilitate regional coverage and to simplify the collection process for the consumer. On the initiative of CITEO, the French company in charge of organizing, guiding and developing packaging recycling, with more than 100 stakeholders, marketers, trade associations, packaging suppliers or reuse operators, Arc has been involved in defining new standards for reuse since 2021.



The promotion of reuse is therefore a key part of our Responsible program. It is consistent with the Arc Group's undertakings in relation to the UN 2030 Agenda. Glass containers, a historical packaging material, offer a sustainable and trusted solution.

These systems are still in the experimental stage. However, the number of these new models and their appeal to retailers is undeniable.

The first partnership projects have been developed. We highlight two initiatives, among many others, in which we are involved.



The *Centre National des Oeuvres Universitaires et Scolaires* (CNOUS) is a body that provides university scholarships, accommodation, hosting of foreign students, cultural activities, catering, and assistance with administrative formalities.

Food services are provided morning, noon and evening. With 450 cafeterias, 250 restaurants, and some 700 sites in France, the CNOUS provides around 69 million meals per year.

The CNOUS has decided to experiment with sustainable containers to replace its single-use packaging.

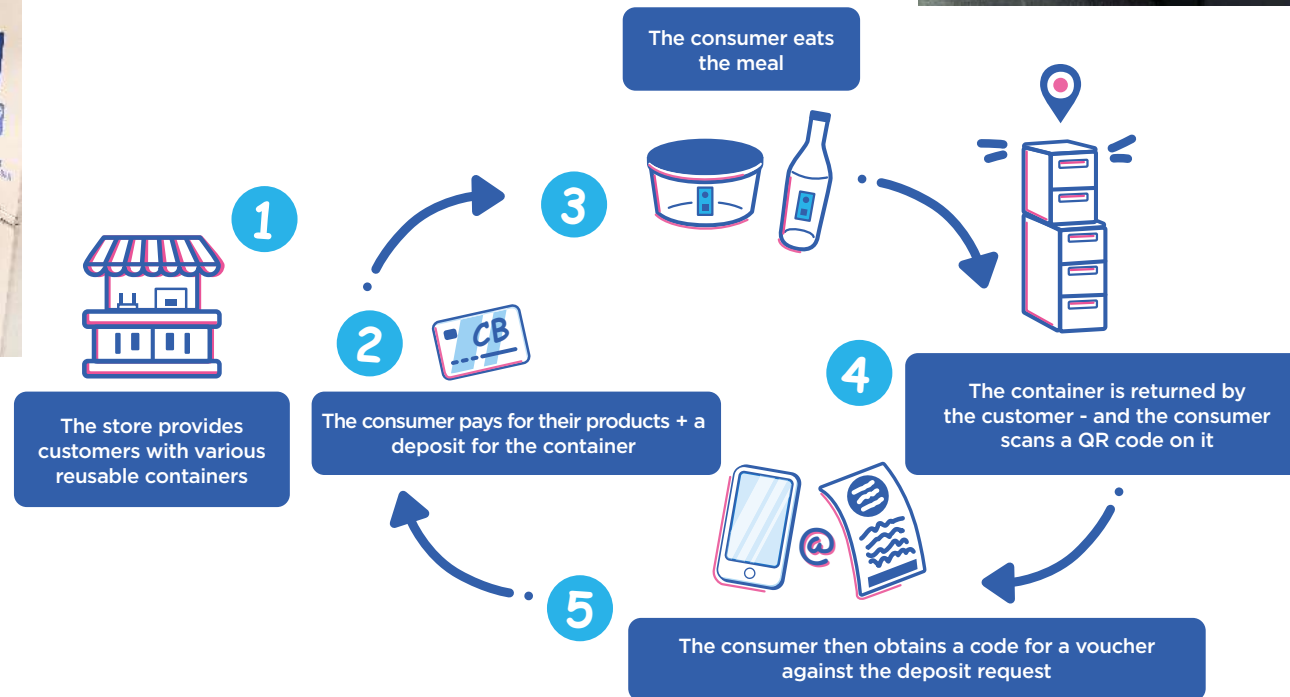
As a partner in this project, the Arc Group supplied 23,000 glass containers to 8 campuses in France in September 2021. Reuse models are set up independently by each campus.



FranPrix is a French supermarket chain.

In 2007, the retailer launched self-service salad bars to meet the growing demand for take-out meals. The partnership was built with the aim of reducing the use of single-use containers.

On this occasion, the system involves a reuse operator, "La Consigne Greengo", in charge of collecting, washing and repackaging.





We find that getting reuse up and running can be complex, with many stakeholders and schemes.

As a result of Arc France's dialogue with reuse stakeholders, the Arcoroc brand provides restaurant owners and take-away operators with a "guide to reuse".

This directory of experts in their fields aims to make it easier to set up this new circuit of reusable containers: consulting, traceability, collection, washing.

This approach, introduced in France, will gradually be extended to Germany, Canada and then throughout the world.





# Providing a safe and inclusive work environment

From small, local, family-owned French company to international group Arc has always been dedicated to social responsibility. Ensuring the health and safety of our teams, developing their skills throughout their careers, pride in the diversity of the women and men who work for us while being an active local partner are all commitments that we respect and promote.

## SAFETY

### Employee safety first and foremost

Our industry carries risks that we have to manage. We aim to guarantee the health and safety of all employees, visitors, and on-site workers in accordance with regulations. To do this, we are setting up an organization and procedures with financial, human and technical resources based on continuous improvement principles. We want to involve all of our employees, corporate partners, and service providers in this prevention approach. We work to ensure that everyone takes safety into full consideration when making decisions and adopts exemplary, responsible behavior on a daily basis.

To embed this safety culture, all of the Group's managers have been trained in safety awareness and responsibility. In-house support has been introduced, based on core safety concepts. This is how the Golden Rules were established. They set out the basic rules that each employee must know and apply, and aim to improve prevention by encouraging everyone to take action as soon as any deviation is noticed and to stop work if the risk is not under control. They are the result of situations we have encountered in our units.

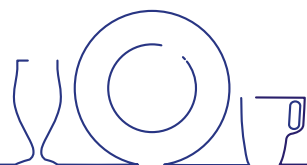
*"It is the duty of each of us to know the Golden Rules, to apply them, and to make sure that everyone else also applies them"*

Nicholas Hodler



### These Golden Rules clarify how to act in twelve situations:

- Fundamentals / risk situations
- Protective equipment
- Manual handling
- Mechanical handling / lifting operations
- Traffic
- Work at height
- Confined spaces
- Lock-out tag-out
- Hazardous substances
- Simultaneous operations / Co-activity
- Work permits
- Emergency situations

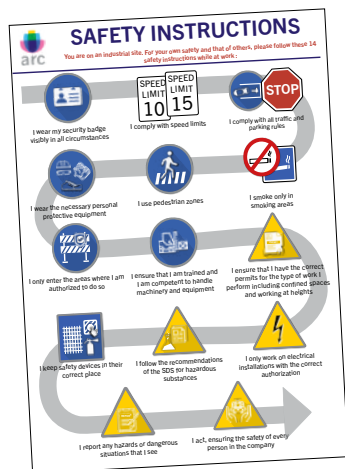


These Golden Rules have two aspects: they are binding for everyone in the company, for service providers and outside companies, but they can also be invoked to justify refusing to operate in a dangerous situation.

Lastly, these rules are explicitly stated in the company's internal documents. They are intended to be included in the training processes of all those involved, including employees of external companies.

We aim to develop a shared perception of risk and thereby contribute to developing individual and collective responsibility. Employee commitment is essential, which is why our awareness-raising and training programs take into account various behavioral, managerial and technical aspects.

The general managers of each entity were trained in November 2019.



In 2020 and 2021, all the Group's managers took the same training, either online or in a classroom. They have confirmed their commitment to their teams by signing the safety charter.

In the event of a breach, and more particularly of willful non-compliance, there are suitable sanctions.

In addition to these rules, specific instructions are displayed in our various entities.

The recent appearance on the sites of alternative modes of travel, such as scooters for example, have led us to also clarify how to share traffic areas safely, in particular by requiring reflective equipment, appropriate lighting, and banning their use on sidewalks or walkways.

General safety training, available in French, English, Chinese and Russian, is provided to all new Arc employees. This enables them to understand the safety culture and requirements.

All employees also have access to more comprehensive local training.



100%  
of Group  
managers have  
taken safety  
training



Our commitment to safety is accompanied by routines at all managerial levels. These make it possible to strengthen manager and team commitment, identify risks, and apply a progressive approach as well as maintaining constant communication on safety issues.

A "safety focus" at the beginning of each meeting has been introduced at Arc France, as well as 15m safety talks at other Group sites, with the operational teams.

All managers are also invited to regularly perform specific "Gemba Walks" on safety. The "Gemba Walk" is an initiative that consists of visiting the workshops to identify good practices and safety risks, to talk with workers to find the root causes of failures and to propose solutions.





## "Safety talks"

"Safety talks" are informal safety meetings held at the workplace before the team starts work.

They help lead discussions around the basics of safety, highlight risky situations, and inform employees of changes in site and work conditions since their last assignment. They are also an opportunity to talk about accidents or injuries that have occurred and how they could have been prevented.



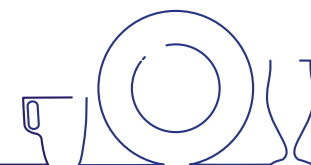
## Arc Middle East Safety Program

Between 2019 and 2021, the Ras al Khaimah site in the Middle East has reduced its lost time injury frequency rate by more than 40%. Safety Stars are awarded each month to the most committed teams by site management or Group management. This distinction is based not only on the team's results but also on its involvement in the prevention of safety risks.



40%

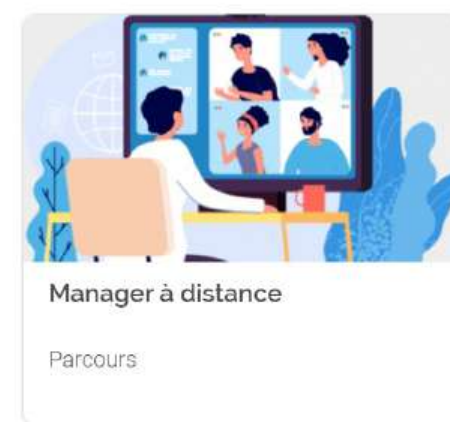
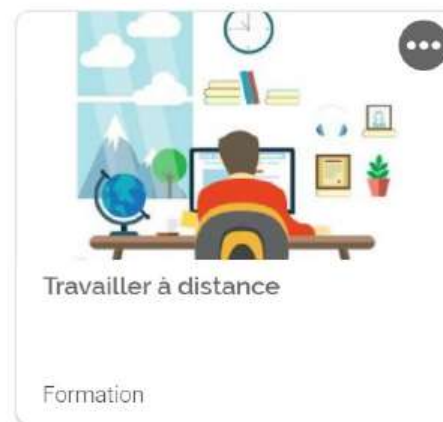
At the Emirates site:  
40% reduction  
in lost-time accidents  
between 2019 and 2021





## Exceptional measures to combat COVID-19

Since the beginning of the COVID-19 epidemic, various prevention measures have been taken depending on the local context. Protocols have been routinely sent out to specify appropriate distancing measures for working on the company site, telecommuting, carpooling or using break rooms and restaurants.



The use of large-scale teleworking for teams whose work permitted it required support.

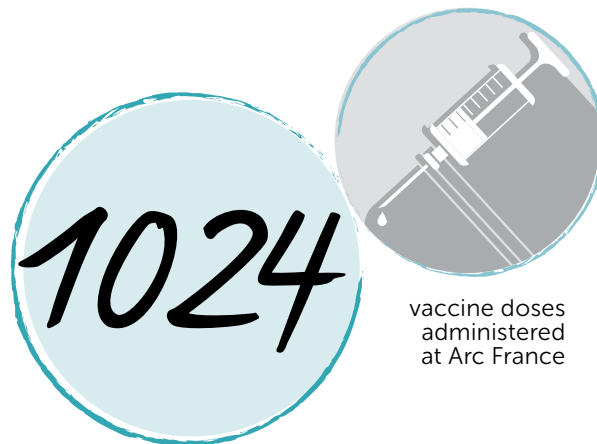
Specific training modules for managers and teams were developed on the internal digital platform.



Masks have been provided to employees at each of our sites. Reusable masks made in France were handed out at the Arc France site.

Arc France's Prevention and Occupational Health Department received vaccine doses from the Regional Health Authority in June 2021, allowing it to be administered during working hours. In this way, 1,024 vaccine doses were administered between the end of March and the end of December 2021, both to Arc France's internal staff and to temporary workers and staff from our service providers. Antigen tests were also offered by the Prevention and Occupational Health Department.

The United Arab Emirates site has coordinated vaccination campaigns with local legal authorities for the two vaccine doses and a booster dose.



## DEVELOP

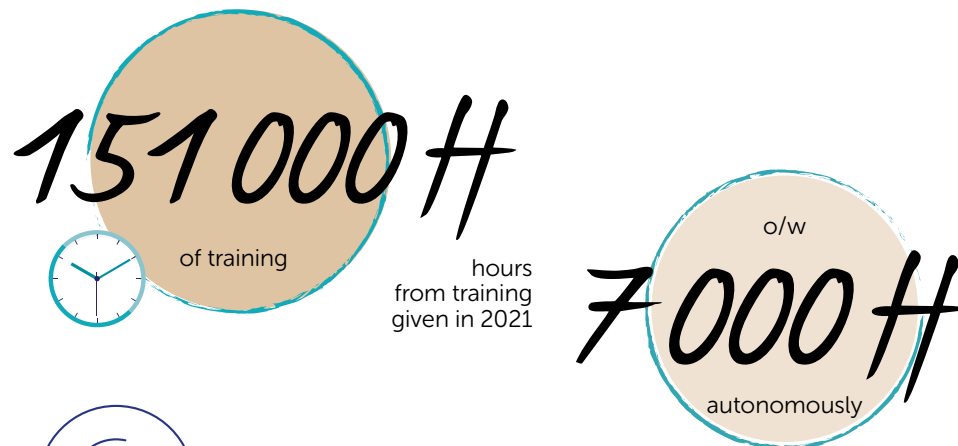
### Develop skills and pass on our expertise Supporting the development of our teams

Supported by the talent of our teams and the diversity of our employees, we strive to develop the technical and managerial skills needed by a group of our size.

Arc University is a platform that offers 72 online Arc training courses to our employees, developed in collaboration with in-house experts or with the support of our partner. This platform also offers numerous training courses from our partner.

The classes aim to:

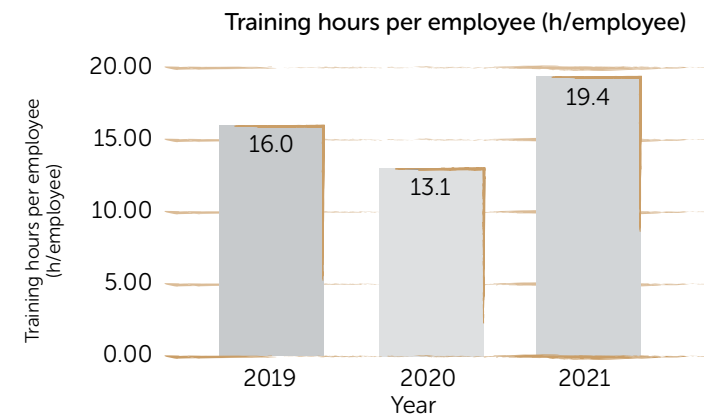
- Develop a corporate culture and practices in keeping with the Group's values and strategic priorities, standardized in all entities.
- Enable all new employees to easily become familiar with the company, its history and its activities.
- Promote the personal development of all employees and increase general and company-specific skills.



Students are autonomous in their training path and can use the platform to choose different training modules according to their needs.

As the platform is scalable, students can access new training courses and updated versions throughout their careers at Arc. It is also possible to combine online and classroom learning, to complete exercises to be corrected by in-house instructors and to adapt the courses to individual abilities.

In 2021, the platform had 2,215 students with modules available in the Group's three main languages: Chinese, English and French.



## Passing on our expertise

Many employees have spent their entire career with Arc France. The company must plan for the demographic trend among its employees (average age 49), as by 2025 nearly a quarter of the workforce will have retired. We are facing a natural situation and apprenticeship is one of the ways in which we can ensure that skills are transferred to the younger generations.

We are aware that young people represent our future and the long-term viability of the company. Investing in work-study programs is an opportunity to create a pool of young talents who will then fit more easily into the company as they have already been trained by it.

Glassmaking skills, for example, which are our great pride and fundamental to the business, cannot be acquired through theory alone. Practice and dialogue between the tutor, the apprentice supervisor and the apprentice are essential. The transfer of knowledge between generations is a great opportunity to encourage dialogue between them, and the key to intergenerational solidarity.

Each year, we offer at least 150 apprenticeship and vocational training contracts (also known as work-study contracts) in production as well as in the support departments. The diversity of careers on offer within the company reflects the diversity of its staff.

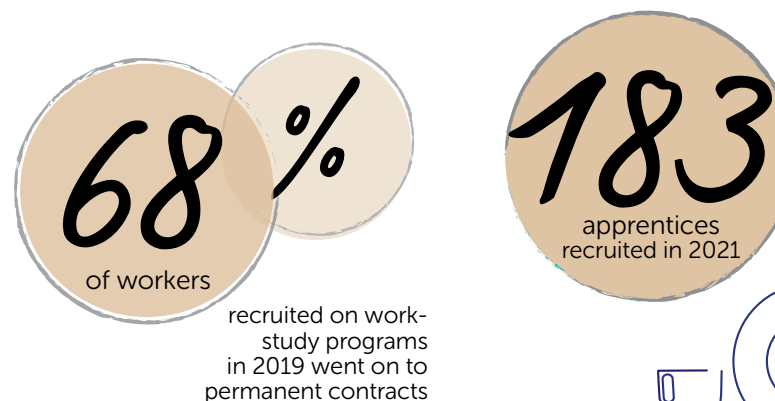
For the young people who join us, these contracts are a way to gain skills and get up and running very quickly. Tutors and apprenticeship supervisors gain recognition for their expertise. The goal is for more than 80% of the students in these trades to have a permanent contract after 12 or 24 months, depending on their skills at the end of the training.



During the pandemic, there were high levels of turnover in the manufacturing team at Arc North America, particularly among the highly skilled machine operators.

Prior to the pandemic, the basic machine operator training program lasted eight weeks.

To deal with the challenge of skilled operators departing, the management and executive team drew upon the expertise of our most experienced trainers, operators and assembly personnel to provide both classroom and field training to our trainees. This enabled us to train a class of eleven operators in six weeks without compromising the quality of the training.





## Getting employees involved

In June 2020, when the COVID crisis put unprecedented constraints on us, we launched an innovative approach to culture and organization within Arc France. It aims to create a fulfilling work environment by improving working conditions for all. This project involves questioning the company's governance, its management model, its modes of communication and recognition as well as the promotion of cross-disciplines and innovation at all levels.

The approach is innovative in itself: each employee is invited to volunteer for the initiative supported by the entire Arc France Management Committee.

120 employees from all departments are taking part in the collaborative effort. A cross-disciplinary and decompartmentalized process is then set up.

These working groups have actively contributed to defining and disseminating the company's new vision and values, supported by a satisfaction survey conducted among all entities to identify priority areas for development.

A new management model, called Alliance, has also been created by and for the company's managers. This model is based on Arc's identity and values to promote initiative and self-fulfillment as well as a culture of performance. It consists of three pillars: Unite, Embrace and Succeed.

70 volunteer ambassadors, managers and non-managers, have been trained to extend the model to all managers in France.

As part of this approach, the New Year's Eve and long-service award ceremonies have also been reviewed and given a less formal, more dynamic format that is more in keeping with the actual situation in each department. Employees from all departments helped to coordinate them.

The onboarding program for new recruits, enabling them to discover the company's resources in a few days, has also been redesigned. Executives are invited to an integration week that combines discovery of the company and its business lines.

Finally, 9 young employees, with an average age of 29, were selected from nearly 70 candidates and since 2021 have been Arc France's G-CODYR (Generation CODYR). Their role is to challenge decisions at the request of the Management Committee, to bring feedback from the field, to propose new ideas while taking on projects themselves, and to represent the Group's young employees both internally and externally. During their first year, G-CODYR invested in proposals to overhaul our internal communication methods, to improve well-being by proposing a company crèche and to support change in the use of the Google Workspace suite.



## Local action

We are well established in all our locations, both in terms of the size of our facilities and as an employer in the local economy.

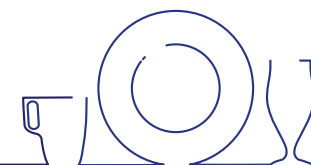
Sharing, solidarity and local investment have been three fundamental pillars since the company's creation. They are a solid base for everyone in times of change and unite us around local projects. There are many initiatives; we share some of them below.



## Partnership with Les Restaurants du Cœur

As a committed company, we took part in several actions to benefit a local association in 2021. Well-known in France and much in demand during this period of solidarity, the local branch of the Restaurants du Cœur benefited from the generosity of Arc France and its teams. It is an association that provides voluntary assistance to disadvantaged people by providing them with free meals or by helping them to reintegrate into society and the economy. In January, €1 per employee present at the 2021 New Year's Eve ceremonies was donated to the association, totaling €1,685.

In June, more than 320 sets of tableware were given to the association during the medal ceremonies, corresponding to the number of medal winners who attended the events.



## Solidarity mugs for the benefit of the Lille Pasteur Institute

Luminarc, the Group's main brand, has launched a collection of solidarity mugs, sold in aid of the Pasteur Institute in Lille. During this campaign, for every mug sold, €1 was donated to the Foundation, which is involved in the prevention and treatment of COVID-19. In September 2021, €30,000 was donated to the Foundation through this initiative.



## Handmade Christmas baubles for UNICEF

With the year-end festivities approaching, the association Terre de Verre and Arc France pooled their glass-making expertise by creating a limited and unique series of glass Christmas baubles, which were sold in aid of UNICEF.

This partnership combines glassmaking know-how, regional development and the transmission of skills, as it brought together a glassblower from the Terre de Verre association and the glassblower from Arc's Research and Development department. Together they made about 200 baubles, transparent and blue, from an old cognac glass mold. These were sold during local pop-up sales, in stores or iconic places in the area.

2,800 euros were donated to UNICEF. This money will fund more than 14,000 vaccines for children around the world.





### Maintaining contact and close relationships with Arc North America employees

Since the beginning of the pandemic, employees at all our sites have worked hard to keep production and support functions running. To thank the American teams for their commitment, Arc North America held a 3-day "Food Truck Festival".

A variety of world dishes were offered for \$1 per person, with the rest subsidized by local management. Employees were able to enjoy a social event around a meal, while respecting the health measures in force. Throughout this demanding crisis, we have always tried to keep everyone in close contact.



### Arc Middle East: a healthy mind in a healthy body!

Our UAE entity has indoor recreational areas, a gym and cricket and basketball courts. Sports activities are offered to our employees every year. Despite the global pandemic that curtailed these activities in 2020 and 2021, we still managed to hold events in compliance with sanitary measures.

The Al Jazeera Cricket League is an annual tournament. This year it was held in April 2021 and 16 companies from Ras Al Khaimah took part. Arc Middle East cricket has a cricket team of 20 people who represent Arc in various inter-company tournaments. The team is always excited to compete in the various local tournaments.

In 2019, Arc Middle East won the tournament (32 companies took part). After the tournament was suspended in 2020 due to Covid restrictions, in 2021 the team came second.





### Al Marjan walkathon

In 2021, Al Marjan Real Estate Group, in collaboration with local authorities, organized its first walkathon to raise awareness about breast cancer and its early detection. Some twenty Arc Middle-East employees took part in the 5 km walkathon.



	Base year		2019	2020	2021
<b>Tons produced</b>	463,572	2019	463,572	394,128	436,853
<b>Sales (€ bn)</b>	0,811	2019	0,811	0.641	0.740
<b>Total headcount</b>	8,159	2019	8,159	8,142	7,789
o/w permanent contract (%)	94%	2019	94%	90%	94%
o/w temp (%)	6%	2019	6%	10%	6%
<b>Executive staff</b>	2262	2019	2262	2132	2136
o/w Men (%)	76.4%	2019	76.4%	76.3%	73.6%
o/w women (%)	23.6%	2019	23.6%	24.7%	26.4%
<b>Workforce</b>	5897	2019	5897	6010	5553
o/w Men (%)	85.0%	2019	85.0%	82.4%	85.8%
o/w women (%)	15.0%	2019	15.0%	17.6%	14.2%
<b>Training hours (h)</b>	130,806	2019	130,806	106,993	151,339
<b>Training hours per employee (h/employee)</b>	16.0	2019	16.0	13.1	19.4
<b>Accident frequency</b>	9.5	2019	9.5	9.5	13.8
<b>Accident severity rate</b>	0.41	2019	0.41	0.54	0.59
<b>Number of deaths</b>	0	2019	0	0	0





	Base year		2019	2020	2021
<b>Tonnes of waste generated (excluding cullet)</b>	17,122	2019	17,122	22,594	30,170
o/w recycled internally	0.00	2019	0.00	0.00	0.00
o/w recycled externally	14,557	2019	14,557	19,170	22,474
o/w landfilled	2,568	2019	2,568	3,276	7,695
% of waste recycled (excluding cullet)	85%	2019	85%	85%	74%
Kilo of waste generated (excluding cullet) /ton produced	37	2019	37	57	69
<b>Tones of cullet generated</b>	181,793	2019	181,793	163,702	190,011
o/w recycled internally	160,640	2019	160,640	148,833	176,196
o/w recycled externally	15,955	2019	15,955	11,874	11,741
o/w not-recycled	5,136	2019	5,136	2,725	2,661
<b>Generated cullet recycled (%)</b>	97%	2019	97%	98%	99%
<b>Tonnes CO<sub>2</sub> (scope 1)</b>	434,380	2019	431,022	396,839	419,978
<b>Tonne CO<sub>2</sub>/ton produced</b>	1.27	2010	0.93	1.01	0.96
<b>Water consumption (m<sup>3</sup>)</b>	2,744,137	2019	2,744,137	2,349,384	2,496,512
o/w surface freshwater (m <sup>3</sup> )	1,172,777	2019	1,172,777	1,122,741	1,179,065
o/w fresh groundwater (m <sup>3</sup> )	547,428	2019	547,428	487,831	461,039
o/w piped water (industrial - non-potable m <sup>3</sup> )	338,026	2019	338,026	277 33,	302,518
of which potable tap water (m <sup>3</sup> )	482,999	2019	482,999	461,479	553,890
<b>Water consumption/ ton produced (m<sup>3</sup>/t)</b>	5.92	2019	5.92	5.96	5.71

	Base year		2019	2020	2021
<b>Total energy consumed (MWh)</b>	2,471,734	2019	2,471,734	2,288,061	2,402,986
o/w gas (MWh PCI)	1,907,885	2019	1,907,885	1,752,097	1,849,580
of which electricity (MWh)	563,849	2019	563,849	535,964	553,405
<b>Renewable energy generation (MWh)</b>	0	2019	0	0	761
<b>Renewable energy consumption (MWh)</b>	119,616	2019	119,616	123,292	122,185
<b>Renewable energy purchased (MWh)</b>	56,940	2019	56,940	57,096	56,940
<b>Energy consumption (MWh) / ton produced</b>	5.33	2019	5.33	5.81	5.50





# 2022 International Year of Glass

In May 2021, the United Nations declared 2022 to be “International Year of Glass” highlighting the role of glass in scientific, economic, artistic and cultural fields. This United Nations resolution is a unique and historic event for glass, a material of the future in terms of energy savings, combating climate change and promoting circular economy.

Glass is essential to many vital technologies, it is helping the transition to a more sustainable world and adds beauty to our lives.

For Arc, the International Year of Glass will be a unique opportunity to raise awareness of glass, to highlight its crafts in all their diversity, to promote our know-how and to inform the younger generation in particular about our material and all its potential.



**Find out more:**

<https://iyog2022.org/>





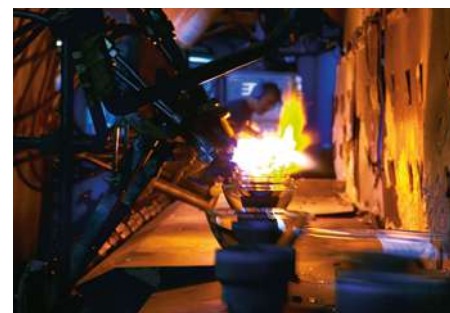
Send us your comments on  
this report or get in touch for more  
information:

**Arc**

104 Avenue du Général de Gaulle  
62510 Arques - France  
[sustainability@arc-intl.com](mailto:sustainability@arc-intl.com)

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Chef&Sommelier  
Arcoroc



arc



**Innovative glass  
for a better world**