



# Sustainable Development Report 2015/2016



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## MEASURING AND PLANNING

p 08

« However beautiful the strategy,  
you should occasionally look at the results. »  
*Winston Churchill*

## RAISING STAFF AWARENESS AND INVOLVEMENT

p 10

« Everyone wants to save the planet,  
but no-one wants to take the trash out. »  
*Jean Yanne*

## IMPROVING CONSUMERS' QUALITY OF LIFE

p 14

« Ask not what your customers can do for you,  
but what you can do for your customers. »  
*Faith Popcorn*

## PRODUCING BETTER

p 18

« The little we can do, the very little we can do, should be done. »  
*Théodore Monod*

## DEVELOPING EMPLOYEES' SKILLS AND POTENTIAL

p 22

« If you are planning for a year, plant rice;  
if you are planning for twenty years, plant a tree;  
if you are planning for centuries, develop people. »  
*Chinese proverb*

## SHARING OUR VALUES

p 28

« When two forces unite,  
their efficiency doubles. »  
*Isaac Newton*

# Editorial



## For a safer and sustainable Arc

Dear colleagues,

Over the last year, all of us have worked hard to transform Arc as we have renewed our product lines, improved the value proposition to our customers, and created a better workplace for all of us, with more autonomy for each of us to manage our own work areas.

In two important areas, lots of work lies in front of us :

First, we need to improve individual and collective safety for all of us and for our guests, and, more importantly, to make this process of improvement a core value for the company.

Second, we need to make our business more sustainable. Glass, a wholesome and inert material which can be infinitely recycled, is a means of raising awareness about sustainability as much for our team members as for our clients.

The company's culture will evolve by accepting a wider meaning of respect for our environment.

Working on both of these objectives is the right thing to do - right for us and our families but also because we will be better partners in the communities where we do business. And we have two projects this year to make that happen:

- We want to make our sites safe enough for you to invite your families to see how you spend your work day.

- At our historical site at Arques, as our first big project, we are working with neighboring communities to create "the Cité Verrière" which will showcase industrial and artisanal glassmaking knowledge alongside the region's development.

For next year, we have many more projects we want to work on - better utilizing waste heat, reducing our environmental footprint at all

our sites, identifying and eliminating hazards wherever we find them - and much more.

But this initial report of our activity in 2015 invites you to learn more about the good practices and successes which can be seen in all of our units around the world and which contribute to creating the mutual sense of pride in our work for all of the Group's team members.

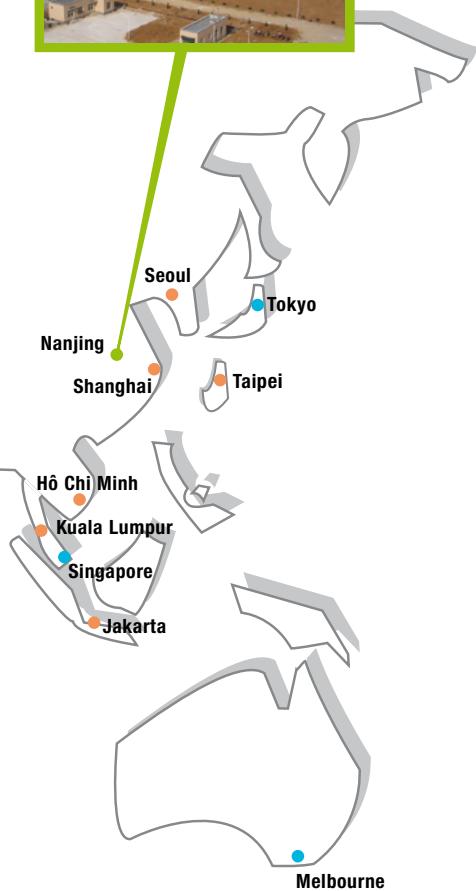
**Tim Gollin**  
Executive President of the Group

# LOCATIONS IN THE WORLD



# PROFILE 2015

## Arc



The Arc Group employs 10,160 people worldwide, including 5,260 in France. The Group, whose head office is located in Arques, in the French Pas-de-Calais region, achieved gross sales of €849 million in 2015. Armed with its know-how in glassware, it developed globally and currently markets its complete tableware ranges to more than 160 countries.

The Group covers the Consumer Goods and Food Service markets through a portfolio of brands – Luminarc, Arcoroc, Cristal d'Arques Paris and Chef&Sommelier. For over 40 years, the Group has also been serving professional customers – industrial groups, wholesalers, manufacturers of semi-finished and finished

products, service providers – with a wide range of tailor-made solutions to meet their specific needs (industry, advertising, premiums, loyalty).

The Arc Group is present in five continents with its production sites (France, United States, China, United Arab Emirates, Russia), distribution subsidiaries (United States, Spain, Australia, Mexico, Brazil, Japan, South Africa) and sales offices.

The Group has adopted a strategy of sustainable development in order to balance economic requirements, social responsibility and respect for the environment, and joined the U.N.'s Global Compact in 2003.

**849 Millions d'€** of turnover in 2015.

**10 160** employees throughout the world, including **5 260** in France.

A major investment program on the site of Arques and at the Group level:

**150 to 180 M€** over 3 years in Arques

More than **60** engineers for research and development

**1 553 M** of glass pieces sold in 2015

**3** markets: general public, hotels and restaurants, B to B

**5** major brands: Luminarc, Arcoroc, Arcopal, Cristal d'Arques Paris, Chef&Sommelier

A commercial presence in more than **160** countries, on **5** continents

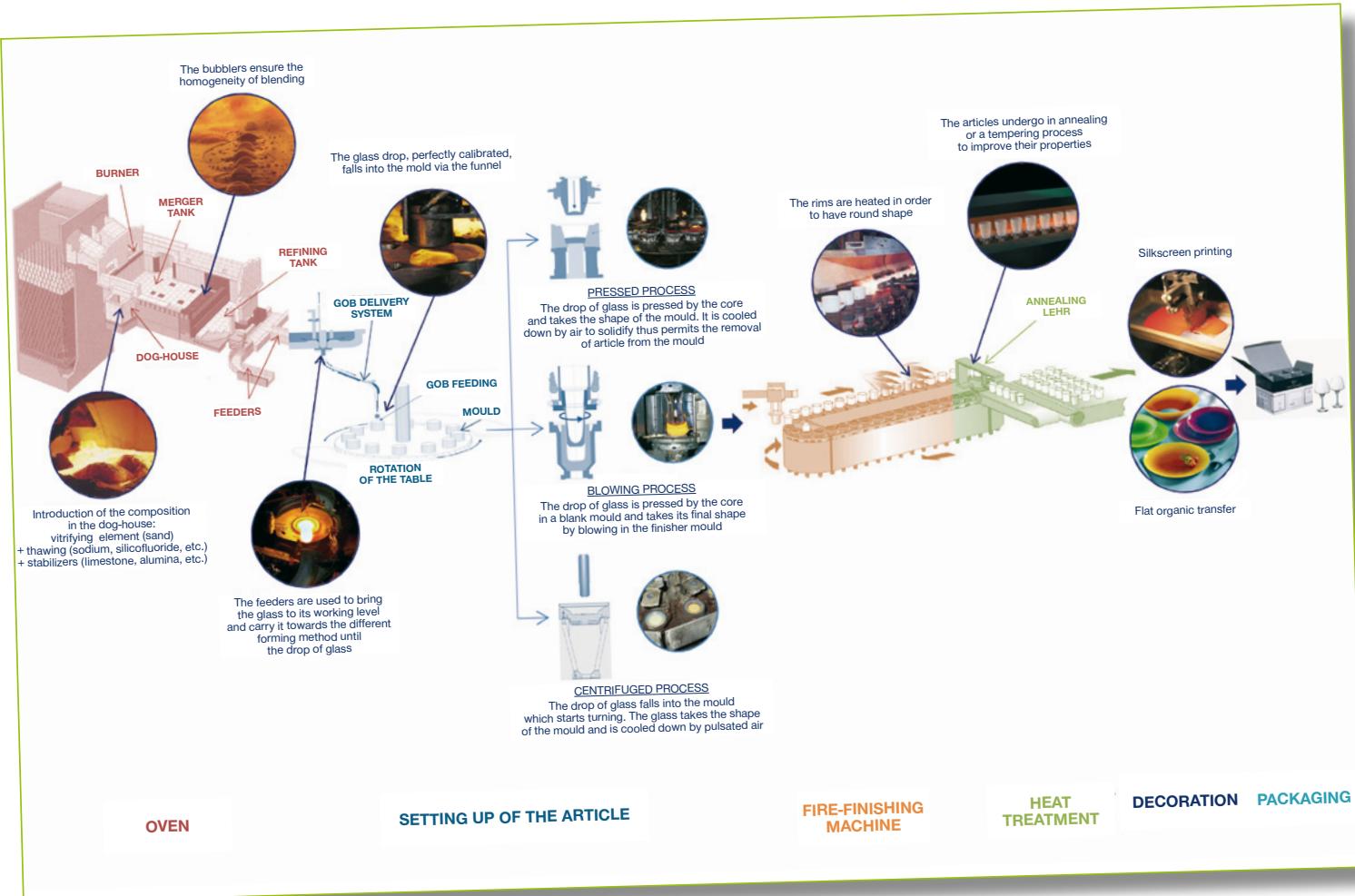
**5** production sites, in France, United States, China, United Arab Emirates, and Russia.

KEY FIGURES

# THE GLASS PROCESS

From earth and fire, the glass is mainly composed of 70% sand, 20% soda and 10% lime. It has 100% recyclable material and contains superior quality such as: good insulation, non-flammable, transparent, hard, delicate and pure.

Group specialist, the Arc Group produces white glass, opal, glass ceramic as well as Kwarx, Zenix and Diamax.



## BRANDS

With almost 20,000 references marketed, the Arc Group offers a comprehensive portfolio of concepts for tableware, storage and decoration aimed at both the general public and professionals in the hotel and restaurant sectors. The Group also produces tailored products for companies.

The Luminarc logo features the brand name in a bold, blue, sans-serif font. A small red dot is positioned above the letter 'i' in 'Luminarc'.

### Brand for the general public

**Luminarc** is the world's leading tableware brand. It includes stylish and innovative products for wine and creative cuisine, intended for daily use. Various ranges are designed according to the habits, customs and tastes of local consumers.



**Cristal d'Arques.** Affordable for all, the Cristal d'Arques Paris collections of glasses, vases and decorative accessories enjoy high levels of brand awareness thanks to their elegant and refined styling.

The arcopal logo consists of the word 'arcopal' in a white, lowercase, sans-serif font, enclosed within a black rounded rectangular border.

**Arcopal** is born in 1958.

Escorted by his faithful Archibald, the elephant who keeps a close watch, the symbolic dishes of the style Made in France live, since then, a real love story with the consumers. All over the world the brand is synonymic of solidity, simplicity and returns us in of numerous childhood memory.

The Arcoroc Professional logo features the brand name 'Arcoroc' in a large, blue, sans-serif font. Below it, the word 'PROFESSIONAL' is written in a smaller, blue, sans-serif font, preceded by three small squares in green, blue, and red.

### Professional brands

**Arcoroc** is exclusively intended for professionals, the brand offers a range of strong and functional design products meeting the needs of professionals in the hotel and restaurant sectors, institutional and catering. Arcoroc is today the second-leading tableware brand for the professional sector. It is extremely present in Scandinavia (where it has a 70% glass market share), in France (60%) and in Spain (50%).



**Chef&Sommelier** created in 2007, includes complete and innovative collections of crockery, glassware and cutlery. This brand is aimed at professionals in the hotel and restaurant sectors, but also at retailers and wine enthusiasts. It has successfully developed products with iconic shapes such as Open Up. This brand achieves 65% of its turnover internationally.

Sustainable development can seem difficult to quantify. In order to measure developments, Arc Group has put in place a series of assessment tools in those actions. Their measures come so as analyses and qualitative audits as reaped. Arc Group uses various internal and external tools to measure the progress of its initiatives and plan projects in coherence with the sustainability development strategy of the company'.

## MEASURING AND PLANNING



## Customer audits

The Arc Group is regularly audited by its customers or a third-party (Bureau Veritas, SGS, Intertek, UL, etc.) as part of an annual review or before any order is placed. These audits ensure that standards are complied with and customer expectations are met. There are three types of audit:

### **Audits concerning labor standards and the environment:**

focusing on health and safety, human resources and the environment. These can be conducted on the basis of customer guidelines (for example IKEA's IWAY code of conduct) or an international benchmark system such as the Sedex Members Ethical Trade Audit (SMETA). Amongst other things, they look at ethical issues such as child labor, compliance with labor laws, remuneration, the environment (waste, energy, etc.), health and safety (Personal Protective Equipment, fire prevention, etc.). Auditors sometimes interview the staff (individually or in groups).

**Systems audits** conducted according to the ISO 9001 standard as regards the Quality Management System for entities that are not certified; this enables Arc Group's customers to check that the systems of the Arc Group are compliant in terms of procedures, processes, internal audits and the quality policy.

**Product and manufacturing-process audits** are conducted according to a schedule established by the auditors (customers), who wish to check compliance with the specific procedures implemented to manufacture products in line with their specifications.

These audits enable the Arc Group to maintain the requisite standards and, if necessary, to carry out actions to ensure customer requirements are fulfilled, or simply to make improvements. Audits are always, opportunities to make improvements in our actions..



Like Arc France in 2014, AGN was audited according to SMETA's 4 pillars, which validate certification in terms of labor conditions, occupational health and safety, the environment and business ethics. This internationally-acknowledged audit facilitates discussions with the Arc Group's customers, who attach great importance to respecting these values

## A deep transformation for a Arc more sustainability : the deployment of Autonomous Units

The Arc Group is deeply changing. The company lives in real organizational revolution. The company put in place a new organization to achieve greater flexibility and autonomy, while empowering employees.

Arc France employs a total of 5,100 staff. The company was organized into autonomous units comprising all the functions required to carry out their operations; scheduling and procurement, maintenance, quality, human resources management, management control, etc. This new organizational structure means that each autonomous unit has its own Health, Safety and Environment (HSE) team. They are responsible for all HSE issues and for improvements in the field.



The Arc Group has always paid particular attention to respecting people and the environment. This translates into tangible initiatives concerning our products and production facilities. At the same time, for our staff, this also means adopting best practices and environmentally-friendly behavior.

## **RAISING STAFF AWARENESS AND INVOLVEMENT**



## European Weeks for Sustainable Development and Waste Reduction



Each June, within the framework of the European Sustainable Development Week, the Arques site organizes activities and events addressing various topics with the support of external organizations. These include energy saving (in conjunction with ADEME, the French Environment and Energy Management), public transport (with the Council of the Saint-Omer Conurbation), electric vehicles (with Renault and its Zoé car), local produce (in conjunction with Court-Circuit, a group of local producers), and biodiversity in the Audomarais area (in conjunction with the Maison du Marais). For the European Week for Waste Reduction in October, Arc France set up stands with its partners, such as GSF and Séché (service providers to Arc France for waste management), Biocoop (to raise awareness about food-packaging issues) and the glass-blower Julie Decriem (on the topic of sustainable glass production). In addition to these events, a best practice was highlighted every day concerning waste reduction on the Arques site. For both events, a quiz was organized to see what our staff had learned from the various activities and initiatives. The employees with the best results won a range of prizes, such as a weekend away, workshops on how to make glass beads or gift vouchers for organic products.



## “Cité Verrière” : Promote the industry and the glass know-how

The Arques Town Hall, the Council of the Saint-Omer Conurbation and Arc have been working together on the Cité Verrière (City of Glass) project for several months. The project seeks to achieve various objectives for the region and the company. The “Cité Verrière” will improve to highlight its industrial and creative expertise. For the region, the aim is to revitalize the Arques town center and develop tourism focusing on the area’s arts and crafts and industry, to complement the city’s existing attractions. The “Cité Verrière” will comprise:

- a museum area showcasing the combined development of the region, the population and glass-manufacturing (Arc and Edar) as well as the technological and industrial history of glass.

- a glass-manufacturing workshop with craftsmen demonstrating glass-blowing and flame-working techniques, as well as educational workshops.
- a fast-food restaurant and tea room
- the Arc Outlet store.

The “Cité” will be situated on the brown-field site of factory 1, between the Fontinettes boat lift and the entrance to the company. The construction work on the “Cité Verrière” will be carried out at the same time as the renovations to the Arques site and the urban modernization program in the Arques town center. The project is to be financed through an innovative public-private partnership agreement and the “Cité Verrière” is scheduled to open in 2019.

## Waste collection

The “Collect waste paper and save a tree” campaign was organized all over Russia. The aim was to raise citizens’ awareness about wasting natural resources and encourage them to recycle waste.

The OSZ site in Gus-Khrustalny took part in this campaign aimed at protecting the environment. The company’s staff helped collect more than a ton of waste near the site.



## COP 21

The COP21 - Conference of the Parties to the United Nations Framework Convention on Climate Change - took place in Paris in 2015. Within the framework of the COP21, the world's leaders meet each year to decide on the measures to be implemented in order to reduce global warming to no more than 2°C.

As part of a partnership with our customer ELIOR, some 13,000 Chef&Sommelier and Arcoroc products were used in the restaurants at the COP21 venue. It was an opportunity to remind our customers about Arc's values and initiatives in the field of sustainable development and to raise our employees' awareness about the importance of the COP21 and combating global warming.



## Les Arts de la Table respectful of People and Environment Les Arts de la Table respectueux des Hommes et de l'Environnement



Arc International, world leader in tableware, develops and manufactures glass items for the consumer goods and food service markets and professionals by offering tailored products. Color Vibrance is a new collection of glass tableware, decorated with organic inks with no heavy metals and respectful of the Health of consumers.

Arc International, leader mondial des arts de la table, développe et fabrique des articles en verre à destination du grand public, de l'hôtellerie/restauration et de professionnels en proposant des produits sur mesure. Color Vibrance est une nouvelle collection de vaisselle en verre, décorée avec des encres organiques, sans

métaux lourds et respectueuse de la santé des consommateurs.

As designers and industrialists, we have an important role to play in preserving resources—but also in the awareness of our employees and our customers. Our expertise allows us to provide eco-designed solutions, respectful of the environment while ensuring the working conditions and the health of our employees.

En tant que concepteurs et industriels, nous avons un rôle important à jouer dans la préservation des ressources mais également dans la sensibilisation de nos collaborateurs et de nos clients. Notre expertise nous permet d'apporter des solutions éco-conçues, respectueuses de l'environnement tout en garantissant les conditions de travail et la santé de nos salariés.



Tim GOLLIN, CEO of the Group  
Tim GOLLIN, Président Exécutif du Groupe

Arc France  
www.arc-intl.com  
104 avenue du Général de Gaulle, 62510 Arques  
+33(0)3 21 95 46 67 caroline.barbier@arc-intl.com

## Arc France renews its AEO certification



The Authorized Economic Operator (AEO) label is a voluntary scheme run in partnership with the French customs authority. Arc France has been AEO-certified since February 2013. This certification is recognized at European level and will soon be acknowledged by many non-EU countries (United States, Canada, Japan,

etc.). It certifies that our company complies with custom-procedure requirements and controls risks concerning the safety of imports and exports.

Arc France has renewed this certification in 2016, highlighting its continuing commitment to complying with safety guidelines.

## Inter-company basket-ball tournament



The site in Ras-Al-Khaimah (United Arab Emirates) regularly organizes sports competitions on the site. The events help to build team spirit, while keeping employees in shape. However, AIME also takes part in inter-company events. In 2015, two teams from the factory took part in a basket-ball tournament. They showed just how athletic and skilful they are by reaching the semi-finals. Well done to the players, and the supporters who turned out to encourage them.

## “Women and Engineering initiative” \*: prepare the future with the new generations

The third edition of this annual initiative took place in November 2015 and an operation was organized in a middle school near the Arques site for the occasion. The aim of the day was to help young girls find out about jobs in engineering, research and technology and to

encourage them to train in these areas.

In the morning, two female engineers from Arc France gave a presentation about their education and career paths to 75 school girls in the ninth grade. Many subjects were addressed, such as statistics about the number of female

## 😊 DGCM council

DGMC has set up a Staff Commitment Council which takes into account the emotional state of its employees: passionate, energetic, and committed to their work. The Council establishes what each employee’s basic needs are: training, tools and resources, communication, acknowledgement, job development and management strategy. To do this, the Council has defined an environment based on the M.A.G.I.C (Meaningful work, Autonomy, Growth, Impact, Connection) model. The Council meets each month to discuss each topic and decide on one or more actions to be implemented. With this in mind, a poster campaign was deployed

portraying smiling, eager

employees, and

a DGMC

T-shirt was

designed

and printed,...

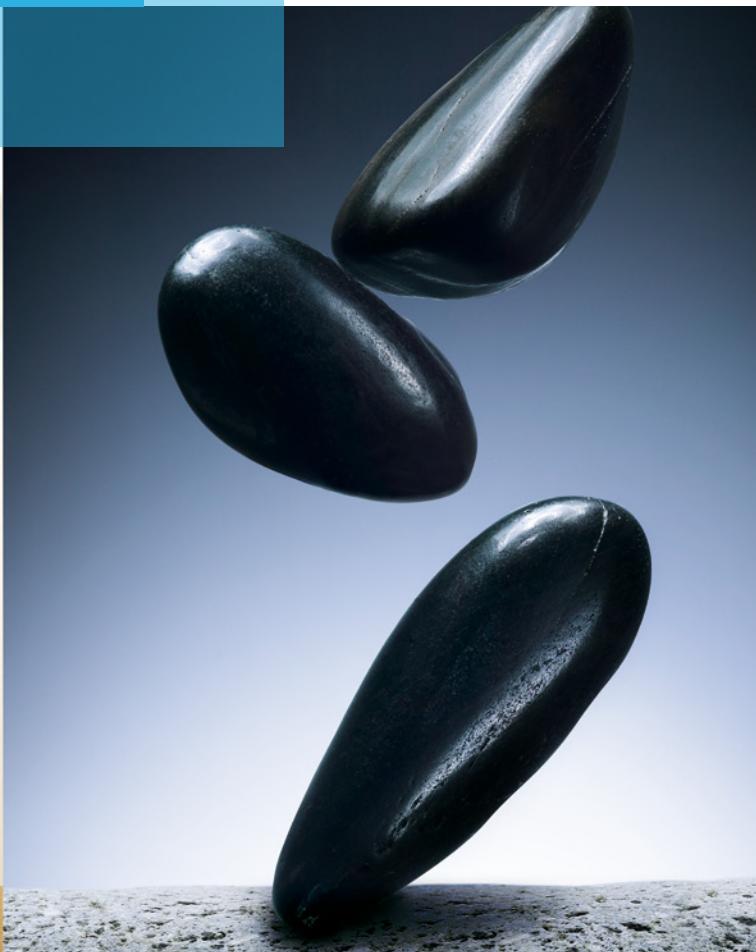


engineers in industry, occupational relations between men and women, salaries, family and work-life balance, etc. The pupils thoroughly enjoyed the presentation, and we hope it helped some of them discover their vocation.

*\* is a French national initiative aimed at promoting engineering careers among women.*

Put the beautiful within the reach of all, such is the ADN of Arc Group. Then every day, our glass experts design and made products that follow and answer to the customer expectations worldwhild. The Arc Group put its extensive technical expertise to innovate and provide more «responsible» products that safeguard the health of consumers and make their lives easier.

## IMPROVING CONSUMERS' QUALITY OF LIFE





## Comparative analysis of materials / MOOC on Eco-design

In 2015, a multi-disciplinary team made up of staff from product development, packaging and sustainable development departments from Arc France followed a MOOC (Massive Open Online Course) on eco-design. The course was based on a case study and enabled the employees to learn about eco-design and to study a specific Group product. The Keep'n'Box storage container was studied by the working group and then assessed by third-party novices with notions of eco-design concepts. The assessment was extremely positive, regarding the work carried out and the product's characteristics. The study was used

to promote eco-design in the company, notably with R&D and marketing teams. It was used as the basis for a more wide-ranging study about eco-design which began in 2016. The results will be published soon!



## The Luminarc and Cristal d'Arques catalogs go green...



In order to protect the environment while maintaining the same level of quality, the 2016 Luminarc and Cristal d'Arques Paris catalogs are being printed on PEFC or FSC certified recycled paper. These certifications guarantee that the paper is produced from sustainably-managed forests, which are environmentally friendly, socially beneficial and economically viable. The whole supply and distribution chain must be certified for the end-product to obtain certification.



## A photo with a smile



The Group Arc has its own photo studio which enables the company to take pictures of products, either alone or in a specific setting. With this in mind, Group employees can volunteer to act as models in the photos. This is a great way of mixing work and pleasure and acknowledging employees.

Then, do you recognize this colleague ?

# Everyone is talking about Luminarc

In spring 2015, Luminarc launched a major communication campaign about glass on the social networks, notably through its Facebook account. The aim was to underline the fact that the properties of glass make it a healthy material with a low environmental impact.

In partnership with Marmiton, Luminarc proposed activities, thematic meetings and competitions on the topic of health and the environment every Wednesday over the course

of a month. Friends and followers could win gifts from the brand's collections.

Following on from the "Green Wednesday" campaign, a recycling operation was launched in partnership with 550 E.Leclerc stores during the months of May and June. Customers were asked to bring back their old plastic storage containers to participating stores. This environmentally-friendly

gesture was rewarded with a 50% reduction on the purchase of a Pure Box glass container. A total of 13.6 tons of plastic were collected in a month thanks to the operation. The containers were recycled into plastic beads by PAPREC - one of the leading recycling companies in Europe. These beads are then used to produce new items.



du 6 Mai au 6 Juin 2015

**Luminarc®**

**Recyclez et Profitez de**

Rapportez vos **anciennes boîtes de conservation en plastique\*** à l'accueil de votre magasin E. Leclerc et **bénéficiez de 50% de réduction immédiate** sur la gamme **PURE BOX Active** en verre de Luminarc.

\* PP

INTERIOR

HEMISFERE

CHAMBER DE GLACE

POUR TOUS VOS PLATS

Made in France

www.luminarc.com

Les boîtes de conservation en verre, la meilleure façon de conserver sagement vos aliments.

**-50%**  
de Réduction immédiate



## The Arc Group further develops its long-standing partnership with IKEA

In June 2015, Arc France inaugurated Furnace P with representatives from IKEA in attendance. The furnace produces opal glass especially for IKEA products. It is the result of a strong and long-standing partnership between the Group Arc, the world leader in tableware, and IKEA, the leading furniture and interior-decoration brand. It represents a direct link between the two companies, which share the same values in terms of sustainable development, in France and around the world.

These values are an integral part of IKEA's IWAY code of conduct, which sets out the key criteria that suppliers must comply with, such as child labor, the environment and safety. All our Group's sites have been IWAY-certified since 2015. This means that each site is authorized to produce for IKEA, whether in China, the United Arab Emirates or France.



Throughout our products' life-cycles, the Arc Group provides solutions and innovates to reduce its impact on the environment, whether in terms of energy, raw materials or waste.

## PRODUCING BETTER



# Control of the consumptions

## NRJ Project

One of the main environmental impacts of glass-manufacturing is related to energy consumption.

With this in mind, Arc has been working for many years to continuously improve its manufacturing processes.

In the United States, DGMC has implemented a scheme to manage energy consumption more effectively and improve employees' behavior as regards this issue. Several initiatives have been launched such as the "Energy Fridays", and the creation of an "Agree to Recycle and Conserve" (ARC) mascot. On the technical side, some of the main initiatives include the improvement of facilities and equipment such as burners, the installation of more efficient heat insulation,

and the optimization of combustion in melting furnaces.

Performance indicators have been established and are monitored by Management each month. In 2015, a reduction of approximately 17% was recorded relative to 2012. A great example to follow.

In 2015, the French site of Arc Group decided to carry out a complete energy audit, going further than standard regulatory audit requirements. Indeed, a major project was launched on the Arques site at the end of 2015 with a view to improving energy management and obtaining ISO 50001 certification by the end of 2016.

The Solwatt project focuses on three key areas:

- Technical aspects: energy audit, identification of losses and action plans

- Organizational aspects: review of indicators and responsibilities

- Cultural aspects: improving skills and changing culture

The project will be conducted throughout 2016 and continue through the energy management system and the implementation of actions over several years.



*Glass melt.*

## Protection of cold-end chambers (NRJ)

The decorations applied to items have to go through an annealing process. Depending on the type of decorations, the annealing temperature can vary and when changeovers

were carried out the heating and cooling times used to be quite long, around 16 hours. This time has been reduced to less than 3 hours thanks to new insulation and casing. This saves time

and increases flexibility while reducing energy consumption.

## Eco-design

Arc France has launched the MOTION project which aims to improve the technical and environmental performance of the molds used for manufacturing glass items. The project includes an eco-design and life-cycle analysis component. This study will help reduce

environmental impacts, improve material flows and optimize recycling at the end of a product's life, for example.

MOTION has contributed to the creation of a new recycling line for steel, cast iron and other alloys and has accelerated the development of

innovative environmentally-friendly solutions.

The project is run in partnership with other industrial companies, universities and schools.

The ADEME is also actively involved in terms of funding, advice and monitoring.

## Combining performance and environmental protection

Furnace R at Arques in France is unique within the Group. It melts ceramic glass.

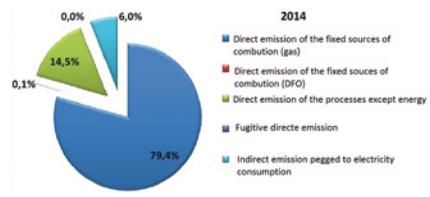
It was rebuilt in 2012 and has thus benefited from certain innovations. The furnace was designed using digital modeling that made it possible to improve performance, decrease greenhouse gas emissions and reduce energy consumption by 18%. The last brick in the long line of innovations was the installation of a new

smoke filtering process capable of treating nitrogen oxide gases (NOx). The filter has reduced the amount of NOx emitted per ton of glass produced by 82%.

This research project was co-financed by the European ERDF fund and was managed by the French Environment and Energy Management Agency (ADEME).

Research studies also resulted in the

development of a new glass formulation with a more environmentally-friendly refining method.



## A competition Inter-subsidiaries for a safer Arc

An international competition was launched throughout the Arc Group in 2015. The “International Changeover Challenge” was organized in the various subsidiaries. The aim was to find the best solutions for reducing production changeover times while ensuring operator safety.

Thirty-one teams from five sites took part in the challenge to try to achieve and confirm the “Formula 1” level changeover time. They had to think about every possible solution, and be creative, but above all they had to consider staff safety. The names of the teams give you an idea of the creativity and good humor that surrounded the challenge: RAID BULL (France), FAST & FURIOUS (China), BLOWING IN THE

WIND (U.A.E.), THE NEED FOR SPEED! (USA) and MICHELANGELO (Russia)...

The environmental impact of production changeovers is not well documented. A melting furnace does not stop operating; it continues to heat up whatever is happening on the thermoforming machines. If a machine is stopped, molten glass is still produced. During the time it takes to change the tools, molds and settings on the machine, the glass is directed under the furnace to be rapidly cooled so it breaks into thousands of small pieces called cullet, which is then re-injected directly into the melting furnace. The glass is not lost because it is recycled, but additional energy is needed to produce it, atmospheric emissions are given off

and the facilities are subject to wear and tear, for no added value. By reducing the changeover times as much as possible, we therefore reduce the associated environmental impacts. People sometimes forget that one of the best ways to improve environmental performance in industry is to simply improve output levels by reducing this type of waste.

## Reducing atmospheric emissions in China

Furnace chimneys are the main source of atmospheric emissions, but they can also be due to particles from raw materials being stirred up and escaping into the air during unloading, storage or handling operations. To prevent this type of pollution, AGN has improved its cullet

storage area by covering it with a roof and side-walls. Cullet is not a hazardous product for the environment because glass is inert. However, this helps maintain the cleanliness of the site and the surrounding area.



## Decorated-item recovery



*Hevea collection.*

In the decoration unit at Arc France, the raw materials are not just the decorative products themselves but also the glass items on which they are applied.

An improvement project launched in 2014 identified several actions that were then optimized in 2015. Certain improvements focused on the technical performance of the production facilities, and others addressed organizational issues, flows and material use. As such, initiatives were deployed to reduce

the breakage rate and to recover compliant items that were previously sent for crushing. Between 2013 and 2015, the breakage rate dropped by 60%!

This is due to increasing awareness of the economic and environmental implications of these actions among employees, and particularly the teams in the field.

## River transport in Arques

Historically, glass-production factories were generally situated next to rivers, so they had easy access to water and could use the rivers as a means of transport. In the past, roads were not well maintained and so this type of transport made it possible to ship the products without too many bumps and shocks. Today, this waterside

location is a great advantage for transporting raw materials to the Arques site, which has a raw-materials storage area right on the side of the canal.

Some of these storage facilities have been moved to make them more accessible for barges, and increase the volumes that can be delivered in this way.

In 2015, some 300,000 tons of raw materials were delivered by barge. If these were delivered by road, it would require more than 7,000 trucks a year, i.e. around 30 day!



The expertise and commitment of our staff are valuable assets for the Group. Protecting their health and safety, providing a pleasant working environment and developing their skills are priorities for the company. This key management objective must be shared by all the staff so as to form part of the company's culture.

## DEVELOPING EMPLOYEES' SKILLS AND POTENTIAL



# Training

Vocational training contributes to improving the company's performance. During this period of change, the training policy is of genuine strategic importance. Training supports the implementation of changes, from a technical and cultural point of view. It also allows the company to prepare for the future by ensuring skills are handed down to the younger generations by employees who are nearing retirement.

## Supporting the transformation of the Arc Group

Successfully implementing the Arc Group's strategy, means providing employees with the requisite support. This support becomes a reality in particular by vocational training for employees who had changed jobs, as well as training modules to explain the strategy and certain of its principles, such as Lean Management. Significant preparatory work was carried out in 2015 in order to identify needs and the types of courses required. At the same time, a certain number of in-house courses were designed. These training courses will be rolled out in 2016, notably in the fields of sales, logistics and manufacturing. With this in mind, the 2016 training budget will be doubled in relation to 2015 and will represent 5.8% of the payroll.

Each year, Arc France makes a point of organizing a diploma-award ceremony to acknowledge employees. In 2015, the ceremony awarded 173 diplomas - 3 times more than the previous year - obtained through Validation of Acquired Experience (VAE) schemes, Individual Training Leave (the French CIF scheme), qualification-based training courses or through personal initiatives and apprenticeship contracts. The diploma-certificates were awarded to the employees and trainees by a member of Management.

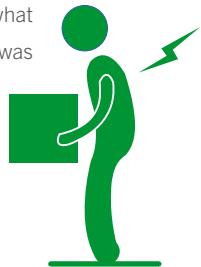
## Preparing for the world of work

In order to give young people a full appreciation of the professional world and to identify potential future employees, DGMC (in the USA) launched an internship program in partnership with a number of local and international middle schools and high schools. Managers assess their requirements, then the HR department puts them in touch with potential interns. At the start of the internship, each intern is asked to write a short summary of their assignment and to present it, in order to demonstrate their communication skills. Interns must also explain which skills they hope to develop during the

internship and give their first impressions about the factory. At the end of the internship, a full review is carried out with the management team.

## A win-win partnership

SupMéca is an engineering school in Paris that trains multi-disciplinary engineers for international careers. Their Specialized Master's degree trains students in Lean Management, ergonomics and ergonomic movement. Arc France took in eight young students from different backgrounds (Chile, Morocco, Libya, Spain) for a 6-day internship. The challenge was to achieve "zero load carrying" on a line where the weights moved can reach as much as 20 tons per work station! The project gave the students the opportunity to discover what working on a production line was really like and to offer their ideas and experience to improve the ergonomics at the work stations.



## The program of Work-study: A strategic project to prepare a sustainable future

One of the keys to the success of Arc France in the coming years will be the company's ability to ensure the effective transfer of expertise and attract new talent in order to build for the future and turn the age pyramid around; over the next 5 years, more than 250 employees will retire on average each year.

With this in mind, The Arc Group put in place a ambitious program of work-study which will take place during several years

In 2015, 139 work-study contracts were signed by the company (51 apprenticeship contracts and 88 vocational training contracts).

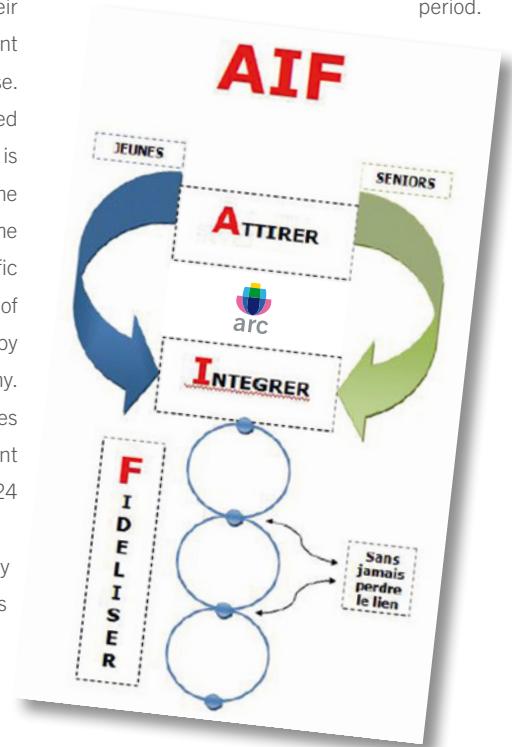
A total of 80% of these contracts are in areas linked to production: machine operating, maintenance of molds and equipment, and machining.

In conjunction with the operational teams, the training department has developed in-house training courses (10% of the vocational training contracts) given by internal trainers. The scheme is called "Prodiat by Opcalia".

This new type of vocational training contract enables the company to take in new employees and train them specifically for the needs of their job. What makes this training scheme different is that it can be carried out entirely in-house. New employees on the scheme are mentored by an experienced member of staff. The aim is to provide these new employees directly with the specific skills required for their work. The scheme is an effective way of transmitting specific company expertise and building a sense of belonging and loyalty among new employees, by ensuring they are well integrated in the company. The aim of the Arc Group is that 80% of trainees on work-study schemes obtain a permanent contract after their training period of 12 or 24 months.

The apprenticeship managers and tutors play an essential role in ensuring the company's expertise is handed down to young trainees; indeed, around 150 people are involved in the scheme at one moment or another.

In 2015, a total of 120 young people were hired on permanent contracts after their training period.



## Ergonomics and working conditions



Ergonomics aims to adjust occupational tasks to the people that carry them out, in order to improve working conditions, as well as employee health and safety.

This practice is becoming more widespread and the issue is increasingly taken into account by operational staff when designing new equipment, or updating certain workshops and

processes. However, staff still need to have a greater understanding and awareness of ergonomics for this issue to become an integral part of our company culture.

## Ergonomics

In 2015, Arc France launched a comprehensive program to improve working conditions, following on from the ergonomics projects carried out in the company over the last few years.

This extensive program had two main objectives:

- Improve staff common areas to foster contact and discussions between colleagues so that they can get to know each other better and thus work more effectively
- Reduce health issues due to bad posture and repetitive gestures

On the Arques site, new, more comfortable chairs were installed at the work stations in the molding workshop and the cold-end chamber. These adjustable chairs or “sit-stand” stools are perfectly suited to the types of movements carried out by the employees, who often work standing up, and are far more comfortable than those used previously.

## Reduction in load-carrying operations



Washing machine window.

In addition, the packaging workshops have been fitted with anti-fatigue mats and the operator booths in the production workshop will soon be air-conditioned. Studies are ongoing as regards the installation of additional lifting tables on the site.

These wide-ranging initiatives meet the requirements of different work stations and the constraints of operators. Above all, they have improved employees' working conditions.

Drawing on the results of in-depth studies and work carried out by the ergonomics advisor, human resources, the occupational doctor and, naturally, with the employees themselves, the budget for this major program has been multiplied by five. This is a long-term project since it involves optimizing the health and safety aspects and also getting workers to buy into the changes. Finding the equipment that fits



Anti-fatigue mats.

users' needs and expectations can take time. It must then be approved, but this is vital if the equipment is to be accepted and effective in terms of its use.

You need metal molds to make items out of glass. The molds can be quite heavy, depending on the size of the items to be made, which can range from a coffee cup to a window for a washing-machine door. When the molds are manufactured or changed during production runs, they must be handled by operators. The largest molds, such as those for washing-machine windows, can weigh

up to 80kg and it therefore takes two people to transfer them to the work table.

The Methods Department of the STN Unit has produced a tool that delivers the mold/core/circle set ready for use and which can be handled directly by a goods-handling machine. Then, a tray with rollers is used to transfer the equipment, thus reducing musculo-skeletal disorders (MSD) and optimizing changeovers using just one person.

## Reorganization and layout of packaging areas

The staff in the Packaging Unit took part in 15 brain-storming workshops as part of the deployment of the “mini-companies” or Autonomous Units.

The workshops were used to present the various concepts of the Autonomous Units but also gave employees the chance to suggest a certain number of improvements.

For example, this resulted in the creation of a relaxation area, improvements to the storage zones and the organization of a system concerning areas of responsibility managed by field supervisors.

What are the initial results? Cleaner work spaces, better working conditions and greater occupational well-being.



## Occupational well-being project Renovation



Continuing in the same vein of change and renewal, the “Occupational well-being” project was launched at Arques in 2015. Several initiatives were deployed and tested with employees in order to improve relations, services and opportunities to relax with colleagues.

This included renovating the green spaces by installing benches and picnic tables so that staff could take coffee breaks outside or have lunch in the sun. These structures were made by the Briqueterie Workshop - a workshop for young people on professional integration schemes within the company. They encourage employees to share convivial moments together.

A second initiative was to propose cultural, leisure or sports activities during the lunch break. Today, employees at Arc France can take part in art-therapy workshops, which aim to use artistic expression and creativity to foster personal development. Qigong is also on the lunch-time program once a week. Employees can practice this traditional Chinese gymnastic activity that combines slow movements, breathing exercises and concentration.

A major renovation project is under way at Arc France. Part of the roof of the STN furnace has been replaced to create a skylight, by using transparent roof panels rather than opaque panels. The furnace workshop is therefore much brighter, which improves the working environment while also reducing electricity costs for lighting.

The degraded floor needed renovating and was re-coated with a resin. Adhesive floor-markings were also laid, making the floor easier to clean and creating more flexibility in terms of the use of the space. The lavatories were also renovated (floor, walls, furniture).



STN sanitary.

Previously, here and in the STN cold-end chamber, the floor coating and overall visual management did not make it easy to distinguish between the different activities or the strategic safety points.

Thanks to the work of the STN teams, the floor coating is now of better quality and the traffic aisles more visible. The working environment is also brighter and more pleasant. “When there is yellow or red, you know you have to be careful!” says an employee. “It’s a much nicer environment for the people who work here.”

## Health and Safety:

The health and safety of employees is the top priority for the Group. This involves constantly improving working conditions and changing the culture of managers and teams. Each individual is becoming increasingly aware of their responsibility regarding their personal safety and that of others.

### A new safety record for the Composition Workshop



Safety is an issue that concerns everyone every day, and the Composition Workshop at Arc France has fully understood this principle. The raw materials required for manufacturing glass are unloaded, stored and prepared in this workshop. In 2015, the workshop recorded over 1,000 days with no lost-time accidents and 500 days with no accidents at all. The record was duly celebrated by the team and the Management at a breakfast meeting, during which everyone's individual role in this achievement was underlined.

One of the best practices that made this record possible was the deployment of a PPE (Personal Protective Equipment) matrix which sets out the recommended PPE (gloves, goggles, masks,

etc.) to be worn according to a person's location (outdoors, mixing room, laboratory, tunnel, etc.).

The results of another workshop on the Arques site were not far behind. Indeed, the AEC workshop - which designs and manufactures machines for the Group's factories and for external customers - also celebrated 1,000 days with no lost-time accidents.

### Occupational health in the United States

In the United States, DGMC has made occupational health issues a priority. For several years now, DGMC has been organizing events and campaigns within the company to help employees take care of their health, with the fewest possible constraints.

In 2015, a huge awareness-raising campaign on various key issues was launched and rolled out over the course of several months.

Employees had the opportunity to support the American Heart Association by purchasing paper hearts. In so doing, they also learn more about cardiovascular diseases.

In October, a tombola and product sale collected \$2,740, which were donated to breast-cancer research.

In November, a "No shave" initiative was organized to collect funds to help combat prostate cancer.

Employees simply had to pay \$5 to enroll and then let their beard grow and promise to pay up to \$20 in exchange for a "Moustache collection" glass.



A jury decided on the winners of the competition according to several categories: the bushiest beard, the longest moustache, etc. The fun side of the initiative ensured it was a great success.

### Safety for all

The issue of safety also concerns many customers, partners and external suppliers that visit the company each day. The Arques site has created a welcome video in French and English. It explains general safety rules to all people entering the site, such as parking and traffic rules, personal protective equipment, safety regulations in production areas and instructions for the emergency evacuation of the site. The video is projected at the reception so that people are familiar with the various points before they enter the site.

### The "Minute Papillon"!

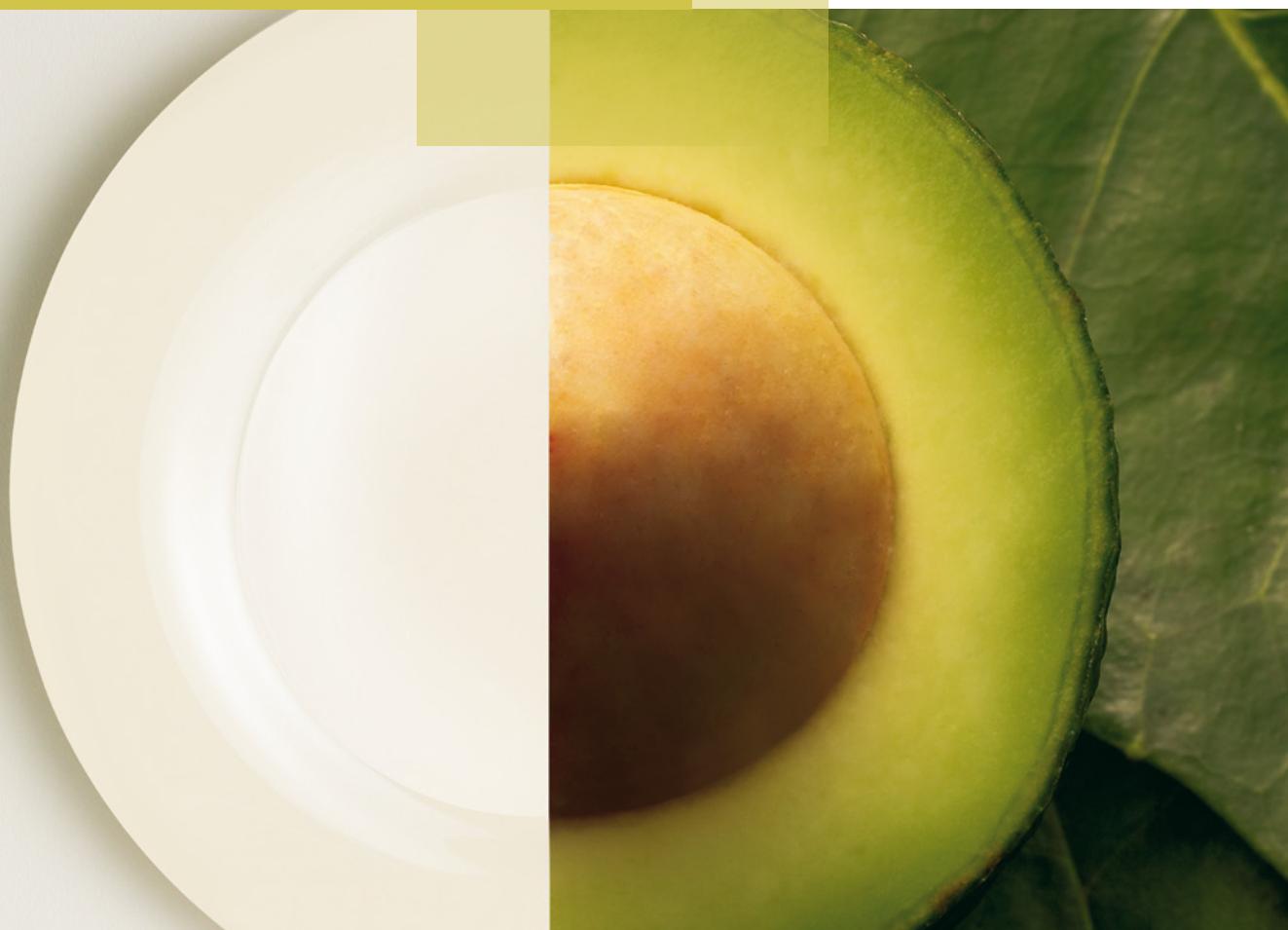
At the end of the year, to ensure safety remains foremost in everyone's mind, the Safety Department launched the "Minute Papillon!" (Butterfly Minute) campaign. Employees are encouraged to think for a minute about best practices so as to ensure they work in complete safety. The campaign's key message is "Think before you act". It encourages staff to take the time to carry out their assignments safely, by not hurrying and by asking themselves "Am I safe?" and "What are the risks?" before they carry out an action.

These reflexes are becoming second nature, but it is always worthwhile giving people an extra reminder.

**MINUTE PAPIILLON !!!**  
Tous ensemble pour la sécurité

Sharing, solidarity and regional investment have always been core company values. These are the anchoring points that stabilize the company during periods of change and mobilize employees around local projects.

## SHARING OUR VALUES



# Open the company to the young people

## OSZ city college

In Russia, OSZ has established a partnership with local technical colleges and glass-makers where young people study to become line foremen, quality controllers or fitters. In order to place the students in real situations, the factory takes them in for their internships or practical projects. In addition, through the career guidance scheme, groups of students are able to visit the site to get a better understanding of the different professions and thereby orient their studies according to the jobs they are most interested in.

## Employing young people

As part of the French Industry Week, several groups of high-school pupils were received by the Training Department at Arc France. Organized by the French Ministry of Education, this event aims to give pupils an insight into the world of industry and the jobs available in the sector. Accompanied by their teachers, the youngsters visited the factory to discover the ins-and-outs of glass production. Many of them were extremely interested and asked many questions about careers in glass-making and industry.

The Purchasing Department on the Arques site received some forty students in their 5th year at ISCID (Institut Supérieur de Commerce International [Higher Institute of International Trade]) who had the opportunity to attend a presentation about the Group and in particular the Purchasing Department. Following this, there was a Q/A and discussion session during which the students could gather useful information for their future professional lives.

## Taking in people in difficulty

“Dons Solidaires” (Solidarity Gifts) acts as a bridge between companies and charities. The association collects new non-food products for the most needy.

Europe has been facing an exceptional humanitarian crisis for several months now. Thousands of refugees are arriving in Europe, including France, where they can be taken into special shelters. Humanitarian associations

have to deal with this emergency.

With this in mind, Arc Group decided to help these asylum seekers by providing associations working in the field with tableware products. As such, the company donated several thousand end-of-series items which enabled around 6,000 families to eat their meals using glass tableware.



## Dinnerware for «Copains du Monde»

Every summer, the “Copains du Monde” (Friends of the World) village in Gravelines in Northern France enables 300 under-privileged children to have a holiday. Aged 9 to 13, the children come from 25 countries to enjoy their holidays and discover a rich cultural diversity. This initiative has existed for 10 years.

Last July, Arc France decided to show

its support for the “Copains du Monde” village by donating tableware.

This was an opportunity for the world leader in tableware to support a local association that works to defend children’s rights.



## Multi-sport race

In August, the Arc France Sports and Cultural Association hosted the Finals of the “Championnats de France de Raid multisports” (French multi-sport race championship). The participants included several teams ranked in the world’s Top Ten. The program of this event

consisted of a 300km race involving mountain-biking, running, canoeing, Run&Bike and rollerskating at night and during the day. Each team was made up of three people and involved orienteering skills.



## Employee support

In South Africa, having access to education is not always easy. Within this context, Arc South Africa enabled Sylvia, one of its employees, to complete her secondary-school education by contributing financially to her training. Thanks to this, she managed to obtain her diploma.

## Brazil cooking

For several years now, Arc International Brazil has been supporting the “Chefs Especiais” association which organizes culinary workshops for children with Down’s Syndrome. This organization teaches children how to cook like professionals. Each month, the children cook and serve at different catering events. From time to time, the association invites a famous chef to cook with the children. The

children have thus had the opportunity to meet well-known Brazilian and French chefs such as Henrique Fogaça and Olivier Anquier. Arc International Brazil supplies them with plates, salad bowls and glasses. More information at their website (<http://chefsespeciais.wix.com/chefs>) and on Facebook.



# A member of the global compact

Arc was quick to understand the importance of sustainable development and was one of the first French companies to sign the United Nations Global Compact in 2003. This voluntary initiative was driven by Philippe Durand, then Chairman and CEO of the Group and shareholder. The Group's values were and remain similar to those of the Global Compact's principles. As such, the company's employees fully understood and integrated the Group's membership.

In the years that followed, actions for improvement were identified and implemented, and a first sustainable development report was published in 2005. Since that time, a report has been published each year and posted as Communication on Progress (CoP) on the Global Compact website.

Les 10 principes of the Global Compact are divided into 4 main themes:



## - Human rights

- **Principle 1** : Businesses should support and respect the protection of internationally proclaimed human rights
- **Principle 2** : Businesses should make sure that they are not complicit in human rights abuses



## - Labor conditions

- **Principle 3** : Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining
- **Principle 4** : Businesses should contribute to the elimination of all forms of forced and compulsory labor
- **Principle 5** : Businesses should contribute to the effective abolition of child labor
- **Principle 6** : Businesses should contribute to the elimination of discrimination in respect of employment and occupation



## - Environment

- **Principle 7** : Businesses should support a precautionary approach to environmental challenges
- **Principle 8** : Businesses should take initiatives to promote greater environmental responsibility
- **Principle 9** : Businesses should encourage the development and diffusion of environmentally friendly technologies



## - Anti-corruption

- **Principle 10** : Businesses should work against corruption in all its forms, including extortion and bribery

The principles are universal and apply to all our activities and sites. The United Nations Global Compact is recognized around the world and by all our customers, for whom it is a guarantee of good social and environmental practices.

These ten principles are illustrated through the different initiatives presented in this report. In order to make reading the report simpler, the table below shows the links between best practices and the principles of the Global Compact.



# Correspondence table

CATEGORIES	PRINCIPLES	POLICIES AND BEST PRACTICES	REFERENCES
<b>Human rights</b>	1. Businesses should support and respect the protection of internationally proclaimed human rights	- Internal regulations and HR policy - Ethical Code	ID
	2. Businesses should make sure that they are not complicit in human rights abuses	- Internal regulations and HR policy - Audits a tour «high-risk» supplier - Ethical Code	ID
<b>International Labor Standard</b>	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	- Internal regulations and HR policy	ID
	4. Businesses should contribute to the elimination of all forms of forced and compulsory labor	- The Group's «A Safe Arc Together» project to improve and safety throughout the Group - Improvement of working conditions: ergonomics, noise reduction, field improvement groups, change in working hours	p. 27 p. 25
	5. Businesses should contribute to the effective abolition of child labor	- Aid for various associations supporting people with difficulties around the world (Copains du Monde, Don Solidaire, Cooking Bresil)	p. 29 /30
	6. Businesses should contribute to the elimination of discrimination in respect of employment and occupation	- Generation Contract - The program of Work-study - The Lobel Workshop : a disability-friendly workshop on the Arques site - The Briqueterie Workshop for young people on professional integration schemes on the Arques site - Support for the «Ecole de la 2 <sup>e</sup> chance» School for a second chance in Saint Omer - Women and Engineering initiative	p. 23 p. 24 AP AP AP p.13

CATEGORIES	PRINCIPLES	POLICIES AND BEST PRACTICES	REFERENCES
<b>Environment</b>	7. Businesses should support a precautionary approach to environmental challenges	- Optimization and control of energy consumption - APS Environment - Development of multi-mode transport	p. 19  p. 20 p. 21
	8. Businesses should take initiatives to promote greater environmental responsibility	- Sustainable Development Week: activities and awareness raising initiatives in France - European week of the reduction of waste - Waste-sorting in offices - Work on a tool that calculates water consumption	p. 11  p. 11 AP AP
<b>International Labor Standard</b>	9. Businesses should encourage the development and diffusion of environmentally friendly technologies	- Integration of eco-design principles in packaging: eco-design award - The Motion Project	p. 15 /19  p. 19
<b>Combating corruption</b>	10. Businesses should work against corruption in all its forms, including extortion and bribery	- Code of Ethics and purchasing confidentiality - Code of Ethics of the Group	AP AP

ID: Internal documents - AP: Action in place.

# Environmental indicators

## CO<sub>2</sub> Emissions

Metric tons of CO<sub>2</sub> emitted per metric ton of glass produced

	2008	2013	2014	2015
GROUP	1,25	1,13	1,07	1,07
Evolution VS 2008		-9,6%	-14,4%	-14,4%

CO<sub>2</sub> emissions continue to gradually decline. The drop was almost 15% since 2008. The actions to improve energy efficiency are being successful.



## Water consumption

M<sup>3</sup> of water per metric ton of glass produced

	2008	2013	2014	2015
GROUP	6,3	7,28	7,34	6,98
Evolution VS 2008		+15,6%	+16,5%	+10,8%

Water consumption are dependent on the activity of the furnaces, and if the industrial process is not saturated, consumption relating deteriorate, which has been the case for the last years.

## Recycled wastes

including production wastes

	2011	2013	2014	2015
GROUP	95,6%	95,5%	94,9%	96,3%
Evolution VS 2011		-0,10%	-0,73%	+0,73%

This represents the proportion of waste generated by the company that have been recycled. In this proportion are included the production waste, cullet, and other recyclables, such as cardboard for example. This share is important and is improving, particularly with the actions of cullet recycling. The few % earned are now thanks to advanced research on the very specific recycled stream.



## Production of recycled wastes

Metric tons for the group

	2008	2013	2014	2015
PLASTICS	875	642	626	697,25
Evolution VS 2008		-26,7%	-28,4%	-20,3%
METALS	3238	1 483	1 059	1 251
Evolution VS 2008		-54,2%	-67,3%	-61,4%
PAPER	10 348	5 977	5 898	5 689
Evolution VS 2008		-42,2%	-43%	-45%

In 2015 the decrease in waste generation continues to reach more than 60% for metal, 45% for paper and 20% plastic. This significant reduction is a reflection of a general awareness

of the collection, sorting and reprocessing of waste, but especially on the production at the source of the waste.

# Social indicators

## Employees of the group

Distribution of the staff of the Group

	2012	2013	2014	2015
GROUP	13 642	10 520	10 360	10 162
Evolution VS 2012				-25,51%

## Safety

### Frequency rate

number of accidents with sick leave x 1 000 000 / number of working hours

	2012	2013	2014	2015
GROUP	5,62	5,3	4,5	4,8
Evolution VS 2012				-14,6%

This reduction is the result of a policy Group « A Arc Safe Together » led since a few years.



## Training

Investment in training  
% of payroll (Arc France)

	2012	2013	2014	2015
Arc France	2,79%	2,46%	2,15%	2,15%
Evolution VS 2012				<b>-0,64%</b>

The rate of training is stable in 2015.

## Inclusion

Employment of people with disabilities (Arc France)

	2012	2013	2014	2015
Arc France	9,48%	10,31%	10,45%	9,88%
French legal rate	6%			
Evolution VS 2012				<b>+0,4%</b>

The population of Arc France has a curve of ageing population which explains a light evolution of the number of people declared with a handicap. Nevertheless, the ergonomics studies and gives employees of the ways and the tools which allow better conditions at the workstation.

# Notes

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# CONTACT

**Caroline BARBIER**

Sustainable Development Manager

**Arc**

104 avenue du Général de Gaulle

Arques - France

Tel : +33 3 21 95 46 67 - GSM : + 33 6 50 69 13 42

caroline.barbier@arc-intl.com



[www.arc-intl.com](http://www.arc-intl.com)

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