

# en

*energy now*

2010

5

EXPANDING MARKETS

1

INNOVATION STRATEGY

7,000

INDIVIDUAL AND  
COLLECTIVE TALENTS

MERSEN

summary



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**M**ersen is a global expert in materials and equipment for extreme environments and for the safety and reliability of electrical equipment. The Group develops innovative solutions geared to the needs of its customers in order to optimize their industrial performance in expanding sectors, including energy, transportation, electronics, chemicals/pharmaceuticals and process industries.

# « JUST 7 MINUTES TO PRESENT A WHOLE YEAR... »

Research shows that the average reader of a business review spends just seven minutes on it. That seems very little time given the wealth of information that is generally presented!

We have therefore decided to adapt the format of our 2010 report to a shorter reading times. It does not contain any lengthy monologues, just summaries that cut straight to the chase, backed up by a few telling examples.

You will be guided on this rapid tour of the Group by the men and women who work for Mersen. Without them, nothing would be possible. While our name has changed, the profoundly human values adopted by our Group since it was founded 120 years ago have remained very much intact. Respect for the initiatives taken by our teams has helped to maintain a climate of confidence and solidarity right around the globe. Our aim is to give you an insight into this energy that drives us forward. It comes from our areas of expertise, or “Multiple areas of expertise, a single source of energy” as our corporate slogan states. And we constantly hone our know-how thanks to the contracts we have landed, which have made Mersen a leader in its markets.

Our efforts were handsomely rewarded in 2010, with sales rising by 13% to €741 million. More than ever before, Asia is now a key engine of our growth, with sales in the region accounting for almost a quarter of the total. We also made further progress in alternative energies, a segment now accounting for 16% of the Group sales.

Our growth prospects notwithstanding, we have not lost sight of our goal of operational excellence, since our EBITDA margin expanded by 1.5 points to reach over 15.5% in 2010.

We always try to look to the future, making sure that we diversify our investments into several expanding markets and complementary geographical regions.

Now it's time for some more detailed information...

## Ernest TOTINO

### *Chairman of the Management Board*

Ernest Totino, who holds a PhD in chemistry, has spent the bulk of his career with the Mersen group, starting out in a Research and Development role. He subsequently held production responsibilities, before becoming plant and then divisional manager. After joining the Group's Executive Committee in 2005, he was appointed Chief Operating Officer in 2008 and then Chairman of the Management Board in May 2009.



# A GLOBAL

**7,000** employees { 40% in Europe and Africa  
30% in America  
30% in Asia-Pacific

**60** production facilities in over **40** countries

€ **741** million in sales

World **N°1** in graphite anticorrosion equipment for the chemicals and pharmaceuticals industries

World **N°1** for power semiconductor fuses

World **N°1** in brushes for electric rotating machines

World **N°2** in industrial fuses

World **N°2** in isostatic graphite production

**SALES**  
(in millions of euros)



Continuing operations

**EBITDA MARGIN**  
(in %)



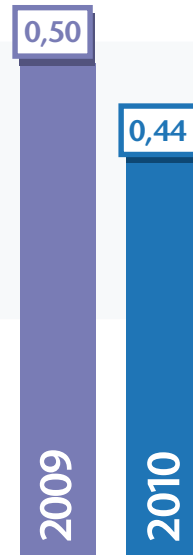
Continuing operations

**EARNINGS PER SHARE**  
(in euros)

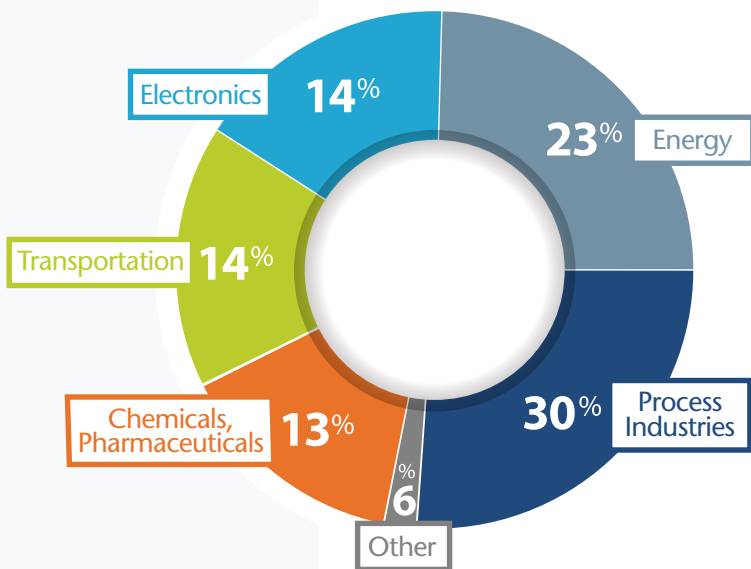


Continuing operations

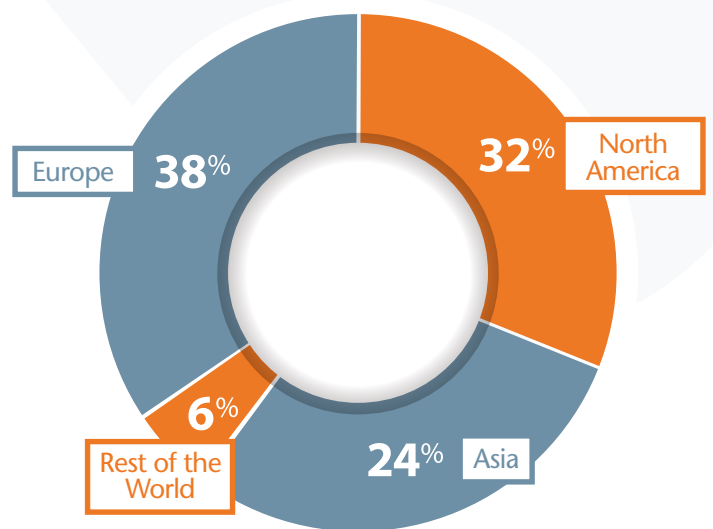
**DEBT-TO-EQUITY RATIO**  
(net debt/equity)



SALES BY MARKET



2010 SALES  
by geographical region





## Florival SOARES

*Flexible graphite precoating operator in the Sheets Production, Mersen France Gennevilliers*

« I joined the plant as a manufacturing agent. I was able to move up through internal training on the precoating machine. I worked hard to learn how to control the machine with a high degree of accuracy. I coat rolls of flexible graphite onto rolls of stainless steel, nickel and aluminum. You have to be accurate because our customers have very high standards. We work on high value-added products. They are used in the energy, oil extraction and industrial seal sectors. I am involved in improving existing products and I could also help to develop new ones given my manufacturing experience. Later on in my career, I would like to supervise teams. »

## « A CAN-DO CORPORATE CULTURE AND MARKET STRATEGY »

« During 2010, Carbone Lorraine changed its name to Mersen. This new name embodies the Group's new business profile. It symbolizes the faster pace of our transformation to focus on new markets, while capitalizing on the values and the wealth it has accumulated over the 120 years of the Carbone Lorraine group's existence.

We design innovative solutions geared to the needs of our customers in order to optimize their industrial performance. Our business is built around two key areas of expertise in which we hold leadership positions.

Our Advanced Materials and Technologies segment markets a range of ultra-fine graphite, silicon carbide, rigid felts and noble metal equipment catering to highly exacting industrial environments, i.e. high-temperature applications of graphite and anticorrosion equipment for heat exchangers.

Our Electrical Components and Technologies segment designs components and systems underpinning the performance and safety of electrical installations, including power supply brushes and brushholders for motors, slip-ring assemblies and signal transmission systems for wind turbines, industrial fuses, coolers for power semiconductors and current collectors for urban mass transit systems.

These two areas of expertise are geared to serving expanding markets that help to meet the key challenges posed by sustainable development: renewable energies help prepare for the post-oil era, the chemical/pharmaceuticals sector helps to meet demand for food and health products triggered by population growth, rail transportation and electronics provide solutions curbing energy consumption, and energy efficiency is a major concern for process industries as they seek to unlock energy savings.

Mersen provides solutions in each of these markets. It currently enjoys an effective manufacturing base recently boosted by new facilities equipped with the latest technologies. We can also draw on our international sales and marketing network, whose teams have refined their culture of expertise and innovation to ensure that they stay even more closely in touch with the needs of their customers. »

### Luc THEMELIN

*Member of the Management Board*

Luc Themelin, who holds a PhD in materials science, began his career with the Pechiney group in 1988 as a Research and Development engineer. He then joined Carbone Lorraine in 1992, before being appointed Director of the Braking division in 1998, then taking over as Plant Manager at Gennevilliers in 2003. He joined the Executive Committee in 2005, supervising the High Temperature, then the Capital Goods divisions, and has been a member of the Management Board since May 2009.





## SUNNY FUTURE FOR PHOTOVOLTAIC TECHNOLOGY

The development objectives for renewable energies are accelerating expansion in the solar energy market. A growing number of plans to build new power plants are taking shape, while panels with photovoltaic cells will continue to be seen on more and more new buildings. Mersen has established positions in several different areas of this market. The Group provides silicon manufacturers (the principal component of photovoltaic cells) with ultra-pure graphite equipment, enabling them to increase their production yields, while cutting their costs. It also markets sophisticated technology equipment to silicon ingot manufacturers for high-temperature kilns that deliver a major improvement in their useful life and in the quality of the photovoltaic cells that they produce. Lastly, it also markets advanced technology electrical protection systems specially designed for power conversion systems and the protection of photovoltaic installations.



Society faces the challenge of reconciling constantly increasing demand for energy needs with the depletion of fossil fuel reserves and the imperative of curbing CO<sub>2</sub> emissions. Alternative energies provide an ideal response to this challenge, provided that their competitiveness is enhanced through new technological solutions.

#### GROWTH MOMENTUM IN WIND ENERGY

The wind energy market has enjoyed a very brisk pace of growth running at close to 25% p.a. in terms of megawatts of capacity installed. Mersen provides a wide variety of solutions to industry players (wind turbine manufacturers, generator manufacturers, wind farm operators), including brushes, brushholders, slip-ring assemblies, signal transmission systems, and various other electrical protection components, such as fuses, coolers, switches and power-isolating switches. Although the global wind turbine market has been concentrated for a long time around 15 or so manufacturers, deep-rooted change is now sweeping through the sector. New manufacturers have been emerging in China and South Korea. Thanks to its production facilities in India and China, Mersen anticipated this structural trend and has positioned itself to serve these new local industrial customers.

#### A RICHER CONTRIBUTION IN THE NUCLEAR SEGMENT

Buoyed by the strong reputation of the French nuclear industry around the world, Mersen has built on its acquisition of 2C Cellier, a well-known producer of nuclear equipment, and developed the special expertise required by the leading industry players. In 2010, the Group secured HAF604 certification enabling it to supply equipment dedicated to the Chinese civil nuclear energy sector. In so doing, it became the first foreign company in its category qualified to produce high-pressure devices and exchangers used in the generation of nuclear power in China. The development of contracts in France and China will enable the Group to establish itself in this fast expanding market, in particular in China.

#### « SOLAR ENERGY NEEDS GRAPHITE »

« Silicon is the principal raw material used to make photovoltaic panels, and industrial companies producing them are large consumers of isostatic graphite. High-quality graphite affords them two advantages: it extends the life of their consumables and enhances the energy efficiency of a manufacturing process that consumes very large amounts of energy. This yields lower costs and more competitively priced silicon. We offer them innovative solutions encompassing ultra-pure grades of graphite, expertise in high-precision machining, production of large graphite blocks, for which there is genuine demand in the market. We can also provide production capacity in China, where the manufacture of photovoltaic panels is experiencing very strong growth. »

Philippe CHEMIN

*VP Sales  
High Temperature*



## PARTNERSHIP ON THE RIGHT TRACK

Mersen is a key rail industry partner active in areas ranging from tramways to high-speed trains. The Group has know-how in applications linked to high-quality graphite-based current transmission, including third-rail shoes, pantograph strips and brushes for rotating electric machinery. Other systems also provide electrical protection solutions for all types of equipment, such as coolers, fuses and contactors. Mersen provides equipment solutions for both rail infrastructure and rolling stock.



**D**emand for urban transit systems is increasing in the world's major cities, and growth in demand for high-speed transportation solutions for intercity travel is also strong. Rail transportation represents the only viable long-term option, particularly in emerging markets. It requires higher-performance and higher-reliability electrical systems, a field in which Mersen's ability to innovate is well-known. The Group also provides solutions for aerospace manufacturers, particularly in the production of special alloy reactor blades.

#### KEY PLAYER IN HIGH-SPEED RAIL SOLUTIONS

When the TGV Est high-speed train set the world rail speed record of 574.8 km per hour in France during 2007, it used Mersen's carbon collection strips, which had to withstand an intense electric arc. This performance gave Mersen a strong position in the market for high-speed trains, since it confirmed the Group's ability to deliver equipment for use in the most testing conditions.

#### POWER STORAGE FOR TRAMWAYS

Thanks to its experience in power electronics and in the railway market, Mersen is ideally placed to support the power storage projects currently being implemented for tramway systems. This evolving technique dispenses with the need for catenary wires to be fitted on certain sections of a line. One of the possibilities is to collect energy very rapidly at each stop, which is then used to reach the following station.

#### CARBON COLLECTION STRIPS FOR PAN-EUROPEAN TRAINS

In preparation for the creation of an integrated European railway area, the European Union has decided to increase the interoperability of trans-European rail networks by stimulating investment in infrastructure. This has given rise to the imperative of gradually replacing the current generation of metal collection strips with carbon strips. A major European rail operator approved Mersen's solutions for use during 2010, potentially opening the door to major market share gains for the Group.

## « WE HAVE BUILT STRONG POSITIONS IN ASIA »

« Over half of global investment in high-speed trains and urban rail infrastructure is currently concentrated in China. Mersen is the leader in numerous segments of the Chinese market thanks to its longstanding strong positions in Japan, which has provided most of the rail technologies used in China. Our current strength is that we have built good relationships with the rail design institutes and manufacturers in China, which have allowed us to sell our products to the local constructors. »

### François GREA

*VP Power transfer  
for Rail Vehicles*



## FERTILIZERS CONTRIBUTE TO THE GROUP'S EXPANSION

Phosphoric acid is used in the manufacture of phosphate-based fertilizers. Its production requires the use of high-performance equipment in terms of its resilience to corrosion and energy efficiency. Mersen sells large tube and graphite block heat exchangers. Their ultra-fine grained isostatic graphite doubles their mechanical properties and gives rise to a six-fold increase in their ability to withstand abrasion. As a result, the equipment's service life is extended significantly. With over 200 heat exchangers installed around the world over the past five years, Mersen is the leader in graphite equipment for the phosphoric acid industry. The Group recently added stirrers with a more effective design yielding improved energy efficiency to its range of products for fertilizer manufacturers. As a result, several contracts were clinched during 2010.

**G**iven the growth in the global population, it is crucial to boost the productivity of farm-land in order to meet the challenge of feeding the world's population. The fertilizer market is reaping the benefit of this favorable trend. In addition, most chemical industry participants are also involved in producing consumer staples. With a leadership position in anticorrosion industrial equipment, Mersen is now a force to be reckoned with.

#### GREATER RESILIENCE, BUT REDUCED MAINTENANCE REQUIREMENT

The Group designs customized graphite and noble metal equipment that can withstand corrosive environments. Mersen's technological innovations represent major competitive strengths: the CL Clad process strengthens the anticorrosion properties of metals, while the six meter-long tubes in heat exchangers halve the risk of leakages by corrosive products through the elimination of joints and seals, etc. To provide an additional service for customers and achieve a rapid roll-out at plants, turnkey systems combining reactors, mixers and heat exchangers are delivered.

#### STRONG EXPANSION IN PRODUCTION CAPACITY IN CHINA

Located in the suburbs of Shanghai, Mersen's Xianda facility manufactures advanced technology steel and stainless steel anticorrosion equipment for the chemicals and pharmaceutical industries. Given the market outlook, the surface area of the facility was extended to 100,000 m<sup>2</sup> in September 2010, making it one of the Group's largest units.

#### SYNTHESIS UNITS USED IN HYDROCHLORIC ACID PRODUCTION

During 2010, Mersen sealed a large order from a major chemicals industry player in China to supply synthesis units for hydrochloric acid production. The handling of this extremely corrosive liquid requires the use of highly reliable equipment. This synthesis unit was coupled with a heat recovery system optimizing the energy cycle.

#### « MERSEN MAROC PROVIDES A PRESENCE CLOSE TO OCP, A KEY CUSTOMER »

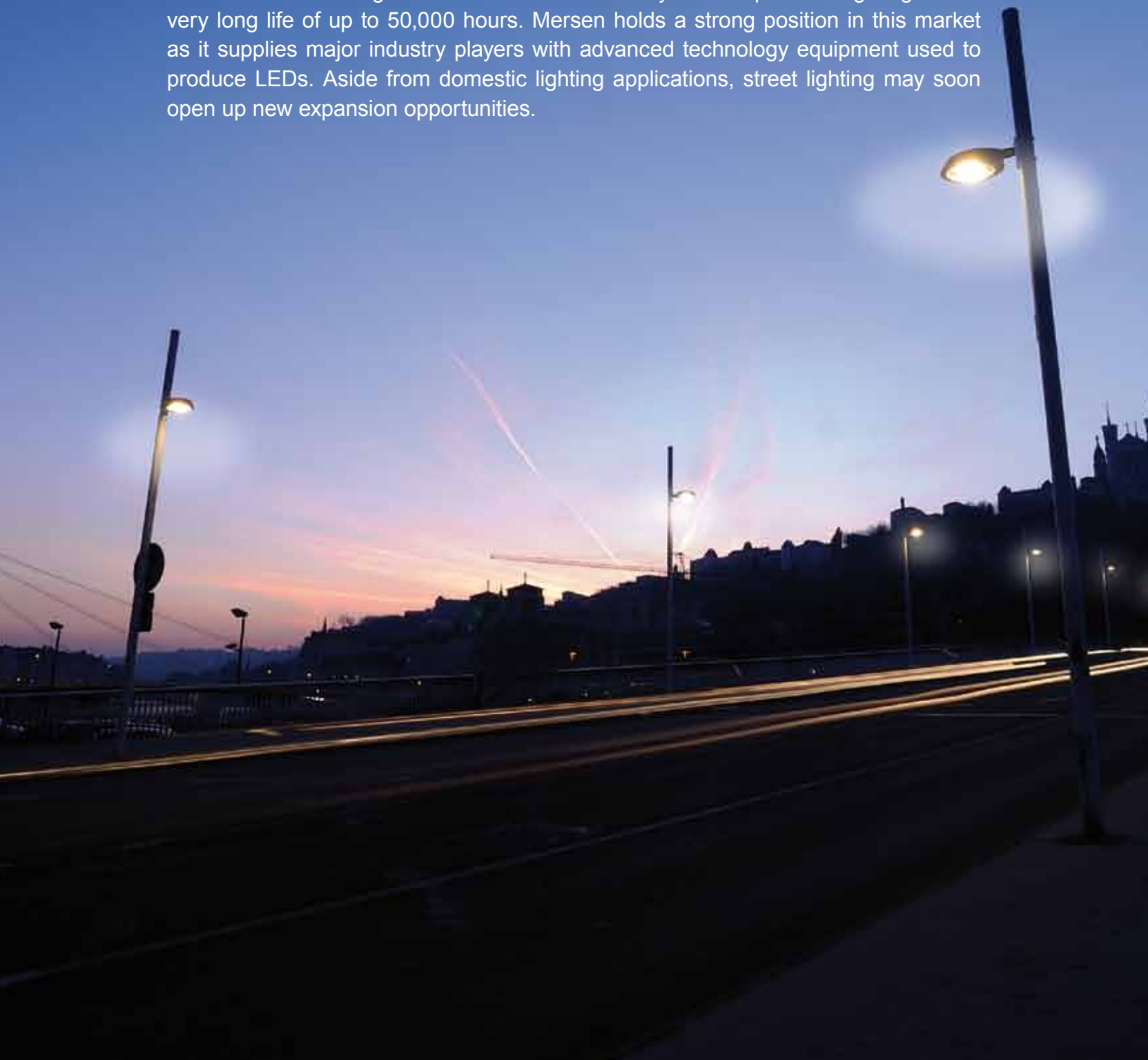
« A leading global exporter of phosphoric acid, Office Chérifien des Phosphates (OCP) has selected Mersen as its number one supplier of industrial equipment. To provide it with efficient service, the Group opened a 3,000 m<sup>2</sup> unit in 2010 located in El Jadida, close to OCP's two production facilities in Morocco. This new presence also represents a crucial industrial base for all our customers in North Africa and the Middle East. We have logged numerous orders in this region in which the fertilizer industry is expanding rapidly. We are also actively developing the sale of the Group's other products. »

**Mohamed JERID**  
*General Manager Mersen Maroc*



## BRIGHT OUTLOOK FOR LEDs

Their very recent introduction to lighting applications has already given an additional boost to the outlook for LEDs (light-emitting diodes). Their market is growing at a rate of 20% p.a. From \$5 billion in 2008, it is forecast to expand to \$9 billion in 2013 and \$40 billion by 2019. This development is attributable to the characteristics of LEDs, which combine an eight-fold reduction in electricity consumption for lighting with a very long life of up to 50,000 hours. Mersen holds a strong position in this market as it supplies major industry players with advanced technology equipment used to produce LEDs. Aside from domestic lighting applications, street lighting may soon open up new expansion opportunities.



**M**ersen prepares the high value-added graphite needed to produce semi-conductors. From microprocessors to LEDs, their applications are expanding rapidly. The Group also supplies equipment protecting against voltage surges for power electronics installations.

#### DYNAMIC GROWTH IN SEMICONDUCTORS

Mersen's graphite equipment is used in the manufacture of semiconductors, which are used in an increasingly broad range of electronic equipment for both consumer and industrial applications. This market has been boosted by the strong growth in light-emitting diodes, which are now moving into lighting applications, after establishing themselves in phones, flat screens and automobiles.

#### PROTECTION OF POWER ELECTRONICS

Through innovative developments, Mersen has further established its position in the protection of power electronics in three major product categories, i.e. fuses protecting devices manufactured by all the leading vendors, advanced technology coolers boosting the energy efficiency of power semiconductors, and special protection against voltage surges safeguarding equipment against deterioration in current quality. In this very rapidly expanding market, the Group's machining workshops in China, India and South Korea ensure a very close relationship with customers in Asia.

## **N**EW EXPERTISE IN SILICON CARBIDE

« Silicon Carbide (SiC), a semiconductor with a bright future, since it is more resilient than silicon, allows the development of smaller and smaller components and can withstand far higher voltages and temperatures. It (SiC) is riding high on the back of the development of electronics and power conversion systems. SiC monocrystals are produced at temperatures in excess of 2,000°C in equipment made solely of graphite. One of the principal priorities is to reduce the density of SiC crystal defects and to obtain larger and larger crystal sizes. Mersen is well placed in SiC fabrication owing to the extremely high degree of purity of its materials and their resistance at temperatures of up to 2,800°C. »

#### ENHANCING LED PRODUCTION YIELDS

A light-emitting diode comprises a sophisticated structure of up to 11 thin films deposited on a substrate. The deposition process takes place at a high temperature (1,100°C). Its precision – it must not vary by more than one degree – affects the consistency of the deposit—the number one factor determining the quality of the process. To safeguard the uniformity and precision of this temperature, deposition must also take place on high-quality substrates. Mersen supplies ultra-pure graphite substrates, with very high-precision machining helping to deliver optimum yields.

Alexandre POTIER

*VP Marketing  
High Temperature*





## GREATER ENERGY EFFICIENCY

Given the rising cost of energy, making the most efficient use of it has become a massive growth area. The concept of energy efficiency has been embraced in numerous sectors, and particularly in the process industries, Mersen's original market. It represents a major source of competitive advantage. The Group is the leading player in heat recovery in corrosive environments. It is also the joint leader in high-temperature insulation. Its dominant positions in the safety and reliability of electrical energy represent a source of tremendous opportunities, as well. The Group also supplies components for speed controllers, which help to maximize the energy efficiency of motors.



**P**rocessing industries, such as steel-making, paper and glass production, have long been Mersen's leading sector of activity. Its brushes, industrial fuses, contactors and custom-finished graphite components are used on production lines all around the world. Its current priority is to support these industries as they seek to achieve greater energy efficiency and increase their safety performance.

#### ARC FLASH-TAMING FUSES

Mersen's electrical protection solutions secure industrial installations by taming the arc flash phenomenon. When triggered by the separation of two components under tension, it leads to a very strong discharge. Since it melts very rapidly, the fuse stops current from circulating and protects the circuit. The Group has a product catalogue comprising 14,000 items satisfying the world's four principal electricity standards, i.e. UL/CSA, CEI, DIN, BS. A large number of them are intended for industrial devices, including cement plants and aluminum mills. The product range caters to a range of different requirements in terms of current, size and fuse speed. Mersen also manufactures high-power isolating switches intended, for example, for the processing and metalworking industries.

#### WATER TREATMENT

Mersen also provides stirrers used at every stage of the freshwater treatment process. It can also deliver solutions for seawater desalination. There are two main processes: large heat exchangers used in thermal desalination, and special tanks required for reverse osmosis membrane desalination. Mersen's rubber-coated carbon steel tanks are very large and meet all the requirements for processing seawater. Two large contracts in Bahrain and Australia recently crowned the Group's entry into the high-potential desalination market. Mersen is also active in water treatment facilities, offering the same type of equipment, i.e. stirrers, mixers and heat exchangers. By enhancing mechanical performance through their design, Mersen's mixers reduce plant energy consumption. Working with the international water industry majors, the Group is able to cater to the needs of all large freshwater or seawater treatment projects.

« WE ARE IMPROVING THE MANUFACTURE METHODS FOR HIGH VOLUME COMPONENTS USED FOR INSULATION IN VERY HIGH-TEMPERATURE APPLICATIONS. »

« Carbon bonded carbon fibers are used as sophisticated insulators at very high temperatures. These products help to significantly improve installations' energy efficiency. Their use has grown very rapidly over the past few years. »

**Steve HARVEY**

*Production Manager High Temperature,  
Mersen UK Portslade Ltd.*





## Sunny YANG

*Purchasing assistant,  
Mersen Shanghai, China*

« I joined Mersen three years ago, after gaining a business administration diploma. I help buyers to track their orders, which encompasses order management, reporting charts, deliveries and reminders in the event of delays. More recently, I have started negotiating directly with certain suppliers. I want to be highly professional, carry out my duties on time and with as much quality as possible. I have been on two training courses, one in finance and another in career development. They taught me new skills. One day, I would like to become a buyer. To do so, I need to increase my product knowledge and I want to hone my negotiation techniques. I also need to improve my English. »

## « WE ARE ESTABLISHING POSITIONS IN FAST-EXPANDING LOCAL MARKETS »

« We have stepped up our presence in Asia over the past few years to consolidate our close relationships with the leading industry players in our development markets. We are using organic growth at our existing facilities plus a strategy of acquisitions. 28% of our workforce now works in Asia which contributed 24% of our 2010 sales, compared with 15% in 2006. From an industrial standpoint, we now possess a first-class base in China with eight industrial sites among which our graphite plant in Chongqing and our Xianda and Mingrong units.

While our investments in Asia give us the option of manufacturing products cost-effectively, their primary purpose is to support our strategy of building close relationships in our markets. Leveraging our powerful sales network, this strategy allows us to benefit from the strong growth rates in the local markets in which we hold leadership positions. Mersen is the number one player in China in anticorrosion equipment, number one in Japan in industrial fuses and anticorrosion equipment, joint leader in China and South Korea in photovoltaics, and number one in rail transportation in Asia. Our local Electrical Components and Technologies assembly workshops are able to respond to demand very rapidly indeed. In the Advanced Materials and Technologies segment, the close relationships we have forged mean that we work with our customers from a very early stage, which helps to set us apart from our rivals.

What's more, the Group strives to adapt to the local culture in the regions of Asia in which we are active. For our human resources, we draw heavily on local talent, including for managers, and we want them to progress to reach the highest echelons of the Group's management structure. »

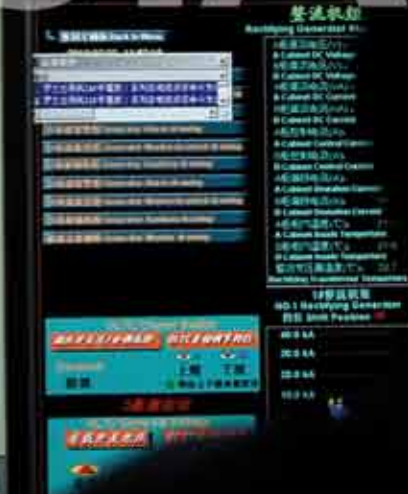
### Victor ZHANG

*General Manager Mersen Pudong, China*

Victor Zhang began his career with Pechiney in Beijing during the early 1980s. He then joined the Carbone Lorraine group, assuming responsibility for marketing and product promotion in the Chinese market. He has been involved in all Mersen's expansion plans in China since 1997, notably including the Kunshan and Chongqing units, as well as the electrical applications facilities in Shanghai.



# ASIA



## SOUTH KOREA

Local consumption of graphite equipment has been growing rapidly, primarily owing to the electronics and solar energy markets, which have attracted massive investments into the country. Output from Mersen's Sangaam facility has increased by 40% over the past four years.

## INDIA

First established over 30 years ago, the Group's presence in India expanded from 1995 onwards, with acquisitions of brush production companies, later supplemented by industrial developments in high temperatures, fuse and anticorrosion equipment. At present, investments are being directed first and foremost into the solar and wind energy and fine chemicals sectors. The Indian market exhibits considerable development potential.

## JAPAN

Mersen is a leading player in Japan owing to the technical excellence and reliability of its electrical protection products. Well known by Japanese electrical equipment vendors, the Group holds a leadership position in industrial fuses in the country. Thanks to its joint venture with Nippon Carbon, Mersen is also the leader in the Japanese market for graphite anticorrosion equipment.

## C HINA

Mersen has rolled out all its business activities in China to support the development of its markets there, particularly solar and wind energy and rail transportation. The Group now possesses eight production facilities in China. The cutting-edge Chongqing plant is geared to meeting the needs of the photovoltaic industry, since it can deliver large graphite blocks to industry players. The Xianda plant specializes in the manufacture of advanced technology steel and stainless steel equipment for the chemical, pharmaceutical and nuclear markets. The Songjiang facility produces electrical products for the rail industry. The Group has also developed a range of electrical protection products catering to the very dynamic power generation and distribution market in China. The recent acquisition of several shareholdings has helped the Group to forge closer relationships with local customers, such as the purchase of a majority interest in Yantai Zhifu Graphite during 2010, which consolidated its positions in the solar energy market.

### « INCREASED PRODUCTION CAPACITY IN CHINA »

« Xianda, our Chinese unit in the Shanghai suburbs, extended the size of its plant from 67,000m<sup>2</sup> to 100,000m<sup>2</sup> this year. Specialized in the manufacture of advanced technology steel and stainless steel equipment, it has now become one of the Group's largest production centers »

## Hugh Mc LEOD

*Chief Executive Officer  
Mersen Scotland Holytown Ltd,  
formerly Calcarb*

« After an engineering career in industry with Massey-Ferguson, then Pratt and Whitney, I joined Calcarb in the late 1990s. I took over as CEO in early 2006. We naturally worked closely with Mersen because we had customers in common. Our integration has been very fruitful, especially in terms of support that we were unable to get previously. One of my current goals is to promote Mersen to all our employees. This is not a very difficult task when you see the tremendous progress we have achieved by joining the Group... In less than two years, we have made deliveries to new customers in Germany, Scandinavia, China, the United States, Brazil, Greece, India and South Korea. But looking beyond the new business we have won, we have also reaped the benefit of exceptional research and development synergies with other Group companies. This should very rapidly deliver concrete product innovations. It's a very exciting time for us ! »



## « TIGHT INTEGRATION WITH THE GROUP DELIVERS MUTUALLY BENEFICIAL SYNERGIES »

« Mersen aims to pursue a strategy of profitable growth predicated on the acquisition of majority shareholdings, enabling it to bolster its presence in developing markets. Its policy of selective acquisitions has enabled the Group to strengthen its positions in each of its business segments, while expanding its product range and its geographical reach. This is particularly true in Asia, which represents a powerful engine of growth. The Group has purchased 15 or so stakes in companies over the past three years. Its targets have been small, local companies with substantial technological expertise that operate in expanding markets. Each of them has helped to enrich Mersen's global offering. They represent a means of accelerating its expansion in its core business, while opening up opportunities in adjacent markets.

All its recent acquisitions have already yielded major technological synergies paving the way for increased product range. These represent genuine drivers of organic development. Furthermore, our aim is for these acquisitions to deliver a ROCE before tax of 20% within three or four years of joining the Group.

For all its acquisitions, Mersen pursues an integration strategy based on an identical approach to human resources. Wherever possible, the target company's senior managers are kept on. With the most recent transactions, the original teams have almost always been left in place, with new opportunities opening up for them within the Group. The primary goal of the acquisition is to secure technological abilities and expertise, which derive from the target company's men and women. It is important to value rather than unsettle them. »



## M.SCHNEIDER

During April 2010, Mersen acquired Austrian group M.Schneider, the world's number four player in DIN-standard fuses and fuseholders. Headquartered in Vienna, M.Schneider chiefly manufactures its products in Germany and the Czech Republic. It also runs a joint venture in China. This acquisition has strengthened the Group's positions in a standard that is establishing itself as the benchmark in Eastern Europe and certain emerging markets, including China.

### Andreas ALTENHUBER

*General Manager Mersen  
Osterreich Wien,  
formerly M.Schneider*



#### A WIN-WIN PARTNERSHIP »

« Our family business, which I joined in 1994, was developing slowly. Our meeting with Mersen was crucial. We have now gained a global dimension by joining its network. Likewise, Mersen has tapped into our expertise in the DIN standard fuse and fuseholder market in which it was not previously active, particularly in Eastern Europe and China. It's a win-win partnership. »



#### AN EXCEPTIONALLY GOOD FIT »

« 2C Cellier had been in business for 40 years, but our size and finances had not allowed us in recent years to capitalize on the upturn in the nuclear sector. Our acquisition by Mersen in July 2009 immediately helped us to establish ourselves in larger markets. The Group's expertise, the tight fit between its products and ours and its global manufacturing facilities enabled us to extend our product range considerably, while leveraging our own reputation. This helped us to win new business that we did not previously have access to. This applies particularly in export markets, since 60% of our 2010 sales came from nuclear power plants in China. Together with all our employees, we have seen at first hand Mersen's respect for human values, its corporate spirit and innovation, and we hold them in very high regard. »



### Francisque DEMEURE

*General Manager Mersen Grésy,  
formerly 2C Cellier*





## BOOSTEC

In France, Mersen purchased an 85% interest in Boostec during April 2010. This advanced technology company develops innovative ceramic products primarily for space applications. Boostec possess unique expertise in the design and manufacture of the massive silicon carbide components used notably in large space and terrestrial observation telescopes. Mersen will use this expertise to offer silicon carbide equipment in several of its strategic markets. Possible developments include the photovoltaic segment in which the race to boost yields is one of the major priorities.

## YANTAI ZHIFU GRAPHITE

The production of photovoltaic substrates has increased sharply in China. To keep pace with this trend, Mersen acquired a 60% interest in Yantai Zhifu Graphite during June 2010. The company is one of the leading players in the market for machined graphite components for producers of monocrystalline silicon ingots. This move provided the Group's manufacturing base serving the solar energy market in China with a significant boost.

## SEVERAL STRATEGIC INTERESTS ACQUIRED SINCE 2008

Through the purchase of Xianda, one of its longstanding partners in China, Mersen was able to add expertise in very large steel and stainless steel equipment to its noble metal know-how, thereby opening up new opportunities for both companies. With the acquisition of Zhejiang Mingrong Electrical Protection, the Group became the leader in the Chinese fuse and fusegear market.

The acquisition of R-Theta Thermal Solutions Inc. in Canada made the Group the world's leader in cooling solutions for power electronics, opening up the prospect of rapid growth.

The acquisition of the control of Calcarb in Scotland, the world number two in carbon bonded carbon fibers, has paved the way for the Group to expand into graphite insulation for very high-temperature kilns and solar energy generation.

The acquisition of 2C Cellier in France accelerated the Group's move into advanced technology equipment for the nuclear sector. It helped to bring on board expertise specific to the nuclear industry, i.e. a well-known manufacturing base and technology, proficiency in the regulations, certifications with the principal players.

The acquisition of a shareholding in the French company Lumpp, which specializes in the production of industrial stirrers and mixers, represented a valuable addition to the Group's range of anticorrosion equipment, enabling it to offer an integrated range of solutions to phosphoric acid producers in the key markets of North Africa, the Middle East and China.

A woman with dark hair tied back, wearing a white lab coat, is working in a laboratory. She is holding a small, white electronic device with a black lens and a cable. She is looking towards the camera with a slight smile. The background is a blurred laboratory setting with various pieces of equipment.

## Perrine GIRAUDOT

*Research and development  
engineer at Mersen France  
Pagny-sur-Moselle*

« I joined the Group at the beginning of 2010, with an engineering degree in materials science from the EEIGM School in Nancy. I was fortunate to be able to go on several training courses on topics including QSE internal auditing, REACH and experience plans. My current job entails preparing and controlling graphite in chemical engineering processes. I am involved in the manufacture of block and tubular graphite heat exchangers. This includes providing expertise to customers and delivering assistance to subsidiaries, as well as developing and validating new products and processes. I hope that this technical know-how will help me to take on greater responsibilities. »

## « ONE-QUARTER OF OUR SALES COMES FROM PRODUCTS LESS THAN FIVE YEARS OLD »

« Innovation is deeply rooted in Mersen's history and corporate culture. To stimulate it, the Group has developed specialized research labs right around the world, which are coordinated by a cross-functional steering committee. An Innovation Challenge and various other events help to promote dialog between teams and foster knowledge sharing. We arrange for exchanges with leading institutions, including universities and other top academic institutions, and highly reputed research institutes.

However, our primary innovation partners are our customers, leaders in the industry. We want to help them achieve progress by making their equipment more efficient, safer and more energy-efficient. Our close relationships, our sheer hard work and our knowledge of the challenges they face represent crucial strengths. We work together in partnership with a research commitment that may range from a dedicated team to full-scale joint development.

We do not attempt to engage in spectacular innovation, but we want to invent systems meeting a genuine need and standing the test of time.

Our advanced technology testing centers enable us to guarantee the performance of our products under development at the end of extremely severe testing. They replicate the harshest conditions that our systems will face through a simulation of all types of extreme environment, temperatures and humidity rates.

During 2010, of our 17 leading R&D projects, more than half were in alternative energies, rail transportation and electronics. We have one clear goal: to support our customers in the future. »

### Jean-François de PALMA

*VP Research and Development, Electrical Protection*

Jean-François de Palma, who holds a PhD in embedded electronics, began his career with the Carbone Lorraine group in 1992 as a research and development engineer. He joined Ferraz Corporation in 1995 as Engineering manager, before taking over as head of development of fuse products for semiconductor protection in 1998. In 2000, he was given responsibility for R&D at Ferraz Shawmut NA and then in 2008 for research and development at Mersen's electrical protection business.





# years INNOVATION

**1893** Charles Street, an engineer at Le Carbone, discovered and patented the carbon graphitization process making it possible to manufacture graphite synthetically. This was the first of many innovations by the Group.

**CL CLAD®.** A process used to cover steel with thin layers of tantalum, titanium or zirconium with excellent anti-corrosive properties in order to lower maintenance costs and enhance the safety of industrial facilities.

**6m JOINT-LESS TUBES.** A technical feat delivering a flawless seal that increases resilience to high temperatures and corrosion.

**LARGE GRAPHITE CYLINDERS.** Almost double the size of those offered by the Group's rivals, these enable our customers manufacturing polysilicon for photovoltaic panels to produce more at a lower cost.

**DISTILLATION SYSTEMS INCORPORATING HEAT RECOVERY.** To harness the heat released by the chemical process as a source of energy.

**SIGNAL TRANSMISSION SYSTEMS FOR WIND TURBINES.** By means of signals controlling the motors located at the base of each blade, they help to manage the turbine and to optimize its position according to the wind.

**PSC FUSE RANGE** (square-body fuses). Launched in 1985, more than 10 million units of this range of fuses have been sold.

**THIRD-RAIL CURRENT COLLECTOR SHOES.** Equipment for the Paris metro with the first safe and reliable third-rail current collector shoes in the 1970s. Most subway systems around the world, from Shanghai to Montreal via Tokyo, Caracas and Taipei, are now equipped with these products.

**CALISTOR.** High-performance cooling for semiconductors using a patented brazing vacuum-based process.

**AND ALSO...**

First range of reliable DC fuses for the French, Belgian, Italian and Spanish rail systems - PTFE Clad columns - Plate heat exchangers - Carbon/carbon composites - Insulation fibers - Silicon carbide coatings


## « CONDUCT RESEARCH AND NOT JUST DEVELOPMENT »

« We have reorganized R&D to incorporate a marketing approach, with a global vision of markets and competitors. This helps us to rise to challenges that have not previously been met, to detect niches and plan ahead for the emergence of new markets. To ensure that we conduct research and not just development, we assign multi-disciplinary teams to each project, with a project leader, engineers and technicians. In certain areas, we want to go beyond making small adjustments to planning ahead for the future. This requires times and creativity. We monitor our competitors and hold brainstorming sessions and then select the ideas that seem to be most promising to us. »

**Céline JOANNAN**

*R&D engineer Electrical Applications,  
Mersen France Amiens*



A man in a grey and orange work uniform stands in a factory setting. He is wearing a grey jacket with orange accents and matching grey trousers with orange accents. He is smiling slightly and looking towards the camera. The background shows industrial equipment, including a large metal cart with multiple shelves and wheels, and various machinery in a well-lit factory environment.

## Stéphane BOULANGER

*Motor Department Technician,  
Mersen France Amiens*

« After completing my studies, I joined Mersen as a sheet metal worker. The Group gave me the opportunity to work on the maintenance of industrial machines. I was able to develop my skills in electricity, sheet metal working and mechanics. I learned a great deal. When I was 25, I asked to join the motor maintenance team. This is a service we provide to our customers. We examine motors and advise customers on the items they need to replace. One of the assignments that made the greatest impression on me was in a submarine in the Netherlands. We repaired the electrical diving engine. We have also worked on motors in the Eiffel tower, at EDF's hydro power stations and at Arcelor's steel mills. On these jobs, we need to have a broad range of expertise, be able to work independently and have good people and technical skills, because our customers need reassurance. Sometimes, we work on emergency jobs, which have an impact on our personal life. Family reasons probably mean that we will not do this job for our entire work life, but it is exciting. I want to move higher up in this team and take on responsibilities one day. It represents a real strength for Mersen vis-à-vis its customers. »

## « THE GROUP HAS A GENUINELY HUMAN TOUCH »

« Since it was created, the Group has always had a genuinely human touch, which is deeply rooted in its corporate culture. Its economic objectives are predicated on the knowledge of its employees. In an “expertise-based” industry such as ours, they are the guardians of the quality of our products and successful developments for our customers. That is why the men and women in our teams are Mersen’s primary asset—its highly prized human capital.

We are pursuing a human resources policy that protects, values and unites them, while giving them a desire to invest themselves in the Group.

The safety of all employees is an absolute priority. It represents an overriding commitment in all the countries in which we are present. The forward planning of our resources and our requirements represents another key aspect. We need to give our teams an idea of the direction in which their overall career within the Group is taking, looking beyond just one facility or just one business. This broader picture helps to encourage mobility between different businesses and sectors of activity. It enriches the transmission of our expertise and our know-how. It is up to Mersen’s managers to act as ambassadors for this change, while demonstrating a human touch. They are assisted in this task by the human resources teams, whose role is to bolster the monitoring systems and act as guardians of the Group’s values.

Its emphasis on cultural diversity, gender balance and social ties guarantees a workplace for our employees in which they are respected.

Valuing our human capital is an integral part of each one of the Group’s expansion drivers: it makes a contribution crucial for our strong growth in Asia; it fosters the integration of employees from recently acquired companies; it encourages the essential creativity of our innovation programs; and it provides the driving force for our contribution to sustainable development. »

### Estelle LEGRAND

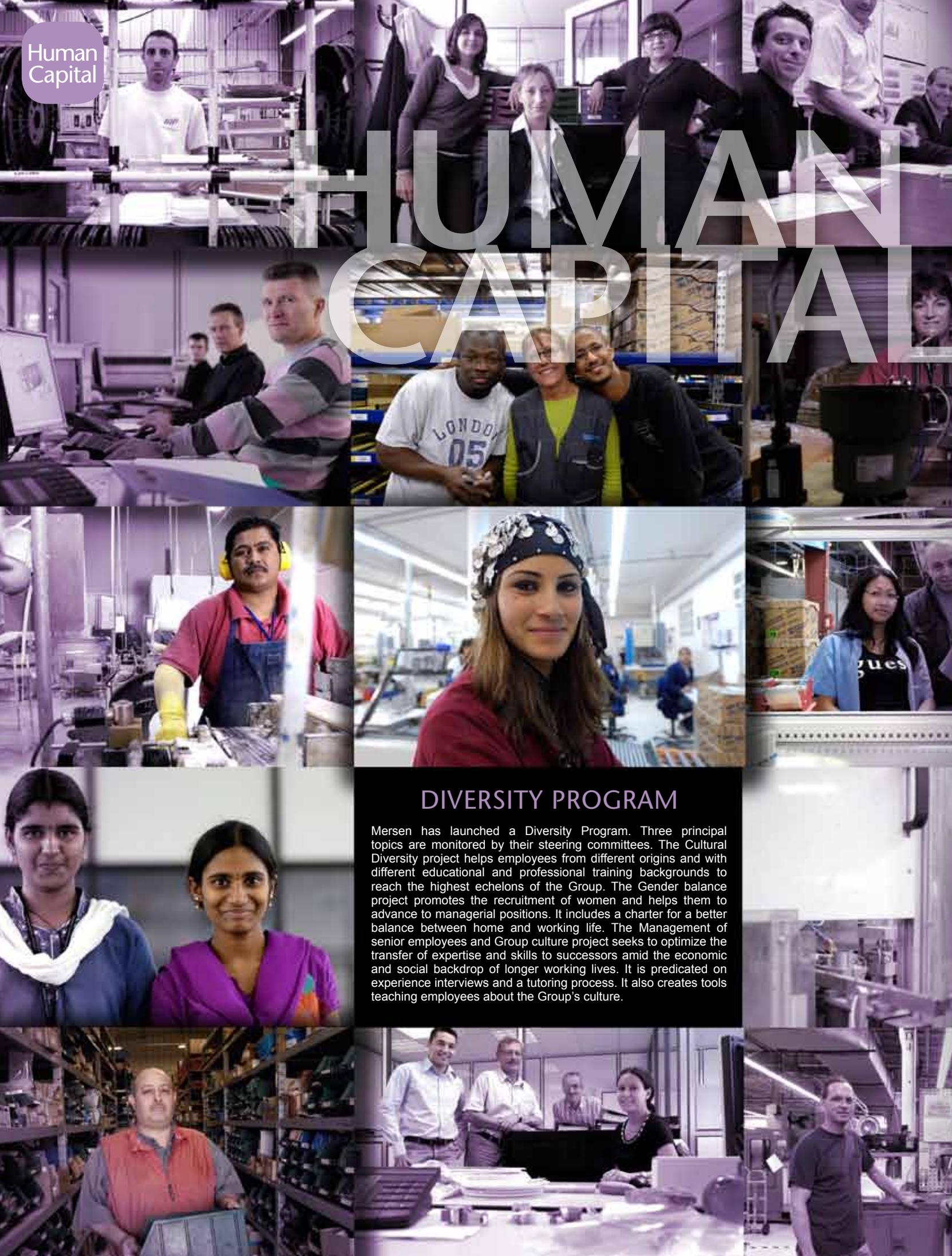
*Group VP Human Resources*

After a postgraduate business law degree, Estelle Legrand became an international corporate lawyer in the UK and in France at Alstom Energie, before joining the Group’s human resources department. She then held HR positions at Thomson Multimedia and L’Oréal. After rejoining the Mersen group in 2009, she was named Director of Human Resources in May 2010.



Human  
Capital

# HUMAN CAPITAL



## DIVERSITY PROGRAM

Mersen has launched a Diversity Program. Three principal topics are monitored by their steering committees. The Cultural Diversity project helps employees from different origins and with different educational and professional training backgrounds to reach the highest echelons of the Group. The Gender balance project promotes the recruitment of women and helps them to advance to managerial positions. It includes a charter for a better balance between home and working life. The Management of senior employees and Group culture project seeks to optimize the transfer of expertise and skills to successors amid the economic and social backdrop of longer working lives. It is predicated on experience interviews and a tutoring process. It also creates tools teaching employees about the Group's culture.



## SAFETY LEADERSHIP

Safety is Mersen's primary internal commitment to its teams. It is pursued by the entire Group, with strict standards, right around the globe. Each management meeting systematically begins with a detailed update on safety issues. All managers took a "Safety Leadership" training module during 2010. In turn, they will train all their teams during 2011, with the backing of the network of safety officers. Every person who joins Mersen also receives safety training and attends a safety induction session. At the same time, a Group-wide method of identifying and analyzing risks was launched. Lastly, Mersen gives out "Safety Excellence Awards" to three Group units every year.

## KNOWLEDGE-SHARING

A large number of key positions influencing performance are held by senior employees, who are due to retire over the next ten years. It is extremely important for their expertise to be passed on because it generally takes years of practice to acquire it. The signature of an agreement covering senior employees has paved the way for the introduction of a formal knowledge-sharing process. It notably features a mandatory experience interview for each employee at the age of 58, irrespective of their position. It enables individuals to express their wishes for the final part of their career in order to identify their knowledge and the way in which it can be passed on. The plan also provides for a highly structured tutoring program, which may even include a bonus payment when the knowledge and expertise have been passed on. This process was cited as a Best Practice by KPMG in its annual survey of SBF 120 companies concerning « best practices for sustainable growth ».

## FORWARD HUMAN RESOURCES PLANNING

Each facility has assessed the skills that it will need over the coming years based on its own priorities and those of the Group. This forward planning has helped to identify key positions and to prepare teams for the acquisition of the requisite expertise. At the same time, the method used to recruit managers was harmonized right across the Group and the induction program for new hires was strengthened. Annual reviews have become a highly valued and critical part of Mersen's competency development process.

## THE IMPORTANCE OF WELL-BEING IN THE WORKPLACE

Developing respect for the men and women who work for Mersen represents a key priority for the Group. In 2010 43% of the Group's employees responded to the internal "Health assessment and management" survey. The trial conducted in France included sixty questions covering all aspects of employees' health, including stress, management, personal problems, transportation and children. The results of this survey will provide the basis for a large-scale consultation with unions and employee representatives during 2011. At the same time, negotiations were launched with them concerning psycho-social disorders.

## « DIVERSITY PROGRAM »

« We want to enable our employees from different origins and with different educational and professional backgrounds to reach senior managerial positions within the Group. We have organized a Group project to work on this topic. We are going to draw up proposals to overcome certain cultural barriers. In certain cases, we will need to fight against prejudice. We will also define the role of French language within the Group and its co-existence alongside English, the language of international communication. Seeking to develop a Mersen model of cultural diversity is an exercise in tolerance and accepting differences. »

### Silvana MACHADO

*VP Human Resources Electrical Applications,  
Leader of the Cultural Diversity project*





## Philippe METZELARD

*Mechanical maintenance technician,  
Mersen France Pagny-sur-Moselle*

« I've been working here for 21 years and have spent the past four years in mechanical maintenance after 17 years in production. I really like this job, because it gives me a wide variety of contacts right across the plant. Preventative or curative maintenance safeguards our workplace. Our entire maintenance team received an award as part of the 5S Challenge, and I am very proud of that. I feel that what I do is useful, and that motivates me.

I was fortunate enough to gain a professional qualification through the internal training I received at the beginning of my career. Ever since, I have continued to receive training on a regular basis. I am very aware of safety issues in particular. As a workplace first-aider and volunteer firefighter, I am involved in all the regulatory inspections of the plant. During the 2010 Safety Week, I explained the rules concerning the proper use of fork-lift trucks. I see my future with Mersen, and I want to expand my role in internal training. »

## « A LARGE PROPORTION OF OUR PRODUCTS CONTRIBUTE TO CONSERVING THE PLANET'S RESOURCES »

« Mersen acts in two ways to help protect the environment. Through its activities, the Group works towards the principal goals of sustainable development. Our products help to promote the boom in alternative, solar and wind energies, they safeguard the reliability and safety of non-polluting public transportation and they are used in the manufacture of components delivering significant reductions in power consumption. This strong involvement in the conservation of the planet's resources is replicated in the very foundations of our industrial operations. Our presence in advanced technologies leads us to make more efficient use of materials by valuing them very highly indeed in order to maximize their service life. What's more, the energy efficiency of manufacturing processes represents a Group-wide avenue of research across all our businesses. During 2010, over 40% of Mersen's sales derived from sustainable development-related themes.

We also owe it to ourselves to be exemplary in our own production activities. To this end, we work hard on the eco-design of our products with a view to cutting our consumption of raw materials and energy. We have conducted carbon footprint assessments at our principal sites in France. They guide us in our efforts to implement effective measures to reduce our energy consumption and our CO<sub>2</sub> emissions. They predominantly relate to our kilns and our logistics chain for shipping materials.

We pay careful attention to controlling risks at all our plants and update our risk mapping every year. An action plan containing priority measures backs this up. During 2010, in accordance with the REACH regulations, we continued to catalog and analyze all the chemical products used on our production lines.

Lastly, internal environmental protection training sessions and industrial risk audits complement our continual emphasis on environmental responsibility. »

### Philippe BELGRAM

*VP Group Risks, Internal Audit and Safety*

Philippe Belgram joined the Group in 1998 following the acquisition of Philips Magnets to oversee the transfer and integration of the new unit. He then joined the internal audit department, before assuming responsibility for the risk management function. In 2010, he was named Director of Risks, Internal Audit and Safety at Mersen.



AVEZ – VOUS  
PENSE A  
UTILISER LES  
CHUTES

Respon-  
sibility

# RESPONSI- BILITY



## ACCURATE MAPPING OF ENVIRONMENTAL RISKS

Even though none of the Group's sites are classified under the Seveso directive, risk mapping is now carried out on an annual basis. This covers both efforts to keep kilns safe and secure all the emissions and discharges from production lines. It is backed up by major risk scenarios and annual action plans.

## USE OF RENEWABLE ENERGIES

Mersen's Linsengericht and Frankfurt units in Germany have reached agreements with several local energy suppliers under which they use energy solely from renewable sources. This means power generated without any CO<sub>2</sub> emissions. Through a long-term partnership with suppliers, this energy has been obtained at a cost equivalent to that of conventional energy, even at the low price per KWh previously negotiated.

## 50% OF SALES TO BE LINKED TO ENVIRONMENTAL PROTECTION IN THE MEDIUM TERM

Markets linked to sustainable development will ultimately contribute 50% of the Group's sales. 25% will be generated by alternative energies through our increasing presence in solar energy and a full set of solutions for wind energy. 25% will derive from rail transportation (electrical contact and protection equipment) and the energy efficiency of processing industries.

## COMMITMENT TO SOCIETY AND LOCAL COMMITMENTS

In each of the regions in which it is established, Mersen contributes to the life of the surrounding community. Following the disposal of the Amiens unit's automobile activities, the Group undertook to find outplacement solutions for all the affected employees. A local unit was set up to support the employees over the relevant period, with the backing of the union organizations and local authorities. Many of them were trained so that they could be reassigned to the plant's other activities. After three years, an employment solution was found for all of them. Mersen's facility in Kunshan, China facilitates the access of its blue-collar workers' families to education and healthcare in return for a voluntary contribution of 1 yuan per person per month to the Xianghe Foundation, which is matched by the Group. Almost everywhere around the world, Mersen's units have swung into action to help people affected by natural catastrophes, such as in Boonton in the United States, where employees raised funds for the victims of the Haiti earthquake.

## A MERSEN FACILITY GAINS THE FIRST ENERGY EFFICIENCY CERTIFICATION IN FRANCE

The new EN 16001 Standard stipulates energy management requirements and provides recommendations for helping businesses to comply with them. During 2010, Mersen's Saint-Bonnet-de-Mûre facility was the first industrial plant in France to gain this certification.

## « ALL OUR EMPLOYEES PLAYED THEIR PART »

« Our collective and pragmatic efforts enabled us to secure the EN 16001 Certification. They were backed by all our employees, who were educated and received training in advance to acquire good habits to promote energy savings and environmental protection. »

Christine MOREAU

*Saint-Bonnet-de-Mûre plant Manager*



必须戴防护眼镜  
Must wear protective goggles



必须戴安全帽  
Must wear safety helmet



必须戴护耳器  
Must wear ear protection



禁止吸烟  
No smoking



**Marc VINET**

*Group VP Electrical Protection*



**Thomas FARKAS**

*Group VP Strategy and Development*



**Jérôme SARRAGOZI**

*Group VP Legal*



**Thomas BAUMGARTNER**

*Group Chief Financial Officer*



**Estelle LEGRAND**

*Group VP Human Resources*

**A TEAM SERVING THE GROUP'S CROSS-DIVISIONAL PROJECTS**

- Management by market
- Innovation and Development
- Cash management
- Information systems
- Human capital management
- Health and safety...



**Didier MULLER**

*Group VP Electrical Applications*



**Charles-Henri VOLLET**

*Group VP Purchasing and Information Systems*



**Christophe BOMMIER**

*Group VP High Temperature*



MERSEN



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Expertise, our source of energy