



## 2013 ACTIVITY AND SUSTAINABLE DEVELOPMENT REPORT

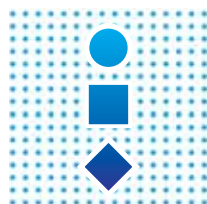


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In 2013, Vallourec, world leader in premium tubular solutions, reached another milestone in its history in adopting a single global brand. This common identity symbolizes Vallourec's tradition of excellence and the founding values shared by its 24,000 employees and reflected in the services delivered to customers worldwide.





# A TASTE FOR CHALLENGE





Further. Deeper. Higher. And ever closer to its customers. Each day, Vallourec's range of premium products and services makes even the most complex projects possible. Its small diameter tubes plant in Youngstown, Ohio (USA), inaugurated in June 2013, is capable of meeting all customer needs for shale hydrocarbon extraction. Its high-grade VM12-SHC steel improves the energy efficiency of power plants and has received globally recognized certification from the American Society of Mechanical Engineers (ASME). In 2013, 500 tons of Vallourec-produced tubes were used in assembling the 124-meter antenna at New York's One World Trade Center, the highest tower in the U.S.

► [Learn more about challenges in Oil & gas on pages 35-43, in Power generation on pages 45-49 and in Industry on pages 51-53.](#)



In close collaboration with its customers, Vallourec develops cutting-edge solutions that respond to their technological challenges. The new Rio de Janeiro research center, dedicated to pre-salt activities, enables Vallourec to work even closer with and respond to the specific needs of Brazilian national oil company Petrobras. In Germany, the new Düsseldorf research center, inaugurated in October, is dedicated to the design and testing of tubes and new steel grades for oil and gas and power generation markets. Worldwide, 500 Vallourec engineers and technicians are innovating for the future.

► [Learn more about Innovation on pages 28-29, 43 and 49.](#)

# A SENSE OF INNOVATION



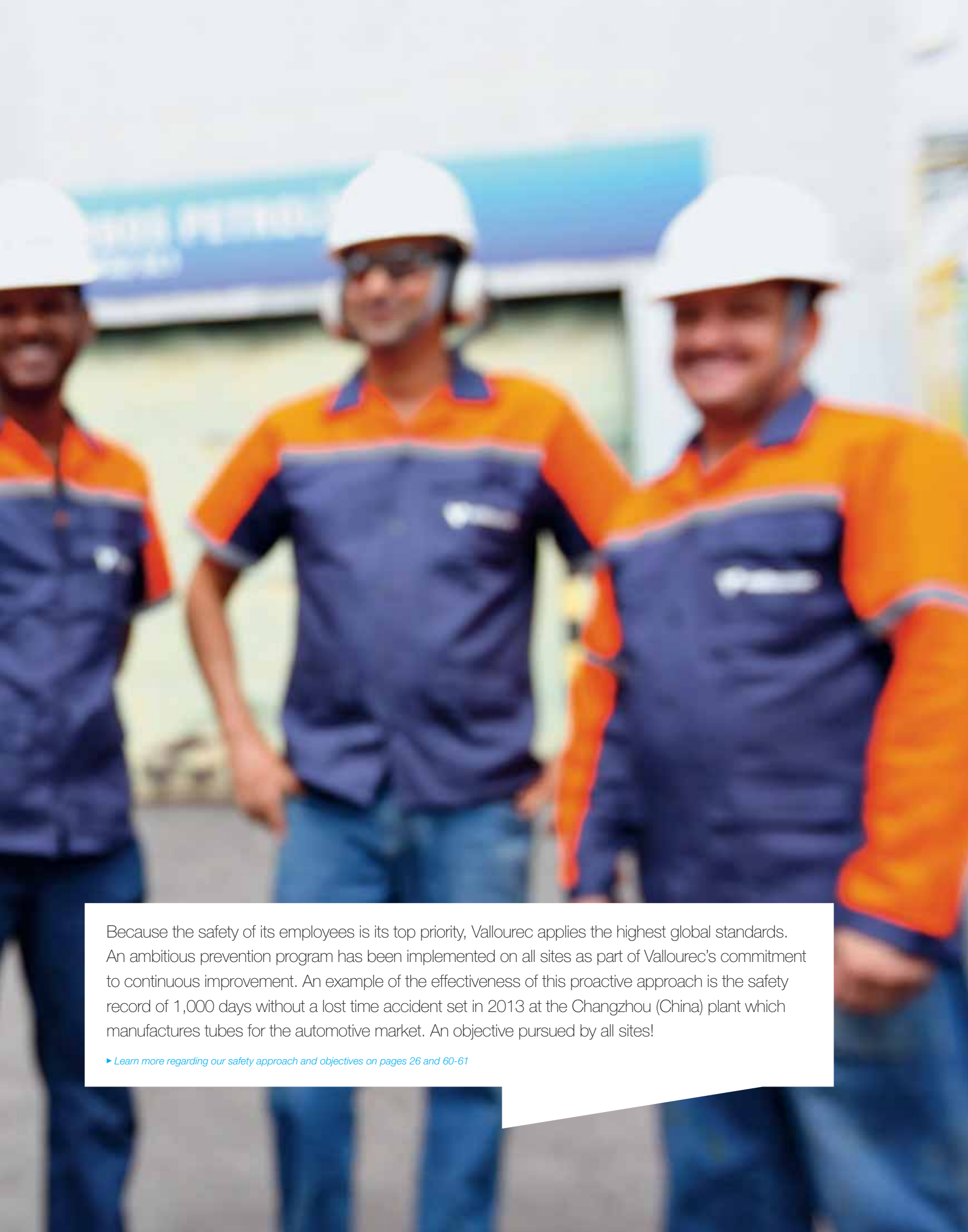




**vallourec**

**SAFETY,  
AN ABSOLUTE  
PRIORITY**






Because the safety of its employees is its top priority, Vallourec applies the highest global standards. An ambitious prevention program has been implemented on all sites as part of Vallourec's commitment to continuous improvement. An example of the effectiveness of this proactive approach is the safety record of 1,000 days without a lost time accident set in 2013 at the Changzhou (China) plant which manufactures tubes for the automotive market. An objective pursued by all sites!

► [Learn more regarding our safety approach and objectives on pages 26 and 60-61](#)



**THE HI  
OF SU**






Because words are not enough in ensuring the wise use of the planet's resources, dealing fairly with partners and creating a positive work environment, Vallourec has set specific performance objectives through its demanding Sustainable Development Charter. The successful global deployment of the GreenHouse program is helping the company advance toward its 2020 objective of reducing gas and electricity consumption 20%. For example, the four new compressors installed in 2013 at the German pipe mill at Reisholz have reduced electricity consumption and prevented annual emissions equivalent to 160 tons of CO<sub>2</sub>.

► [Read more about our sustainability goals and commitments on pages 22-23 and 55-73.](#)

# GH STANDARD STAINABILITY



How do we ensure the highest standards to customers in more than 20 countries around the world? Through a culture of performance shared by all employees. Training, internal mobility, a network of experts, apprenticeship... Vallourec's effective talent management policy increases employee expertise and enables anticipation of business and market development needs. Employees are trained at the company's internal university and united around strategic themes and priority issues, such as customer orientation, managerial know-how and innovation. In 2013, more than 5,000 employees benefited from its programs.

► [Learn more about our HR policy and our corporate culture on pages 30-31 and 58-59.](#)

# TALENT CULTURE







**SHARING  
A COMMON  
IDENTITY**



The image shows a large, three-dimensional Vallourec logo. The letters are blue with white outlines and are mounted on a white base, casting shadows on the surface below. The logo is positioned diagonally across the frame, starting from the bottom left and extending towards the top right.

In 2013, all Vallourec Group entities adopted a single brand and a common identity. In bringing together under one brand all of the companies acquired or created worldwide since the late 19<sup>th</sup> century, Vallourec reaffirms its global leadership. The creation of a true “premium label” provides customers with a guarantee to the same level of commitment and quality worldwide. This single brand unites all employees around a common culture based on innovation and excellence in support of Vallourec’s growth strategy.

# WORLD LEADER IN PREMIUM TUBULAR SOLUTIONS



Vallourec is a world leader in premium tubular solutions primarily serving energy markets (oil and gas, power generation).

Its expertise also extends to the industry sector (including mechanical engineering, automotive and construction). With more than 24,000 employees, sales of €5.6 billion in 2013, integrated manufacturing facilities in more than 20 countries and cutting-edge R&D, Vallourec provides customers with innovative global solutions that respond to the energy challenges of the 21<sup>st</sup> century.

## MAIN CUSTOMERS



**OIL & GAS / OIL COMPANIES:** CNOOC (China), Exxon (United States), Lukoil (Russia), Petrobras (Brazil), Saudi Aramco (Saudi Arabia), Shell (Netherlands), Total (France)

**OIL & GAS / SERVICE PROVIDER:** Ados (United Arab Emirates)

**OIL & GAS / DISTRIBUTORS:** Champions Pipe & Supply (United States), Pipeco Services (United States), Premier Pipe (United States), Pyramid (United States), Toolpushers (United States)

**OIL & GAS / ENGINEERING AND CONSTRUCTION:** Technip (France)

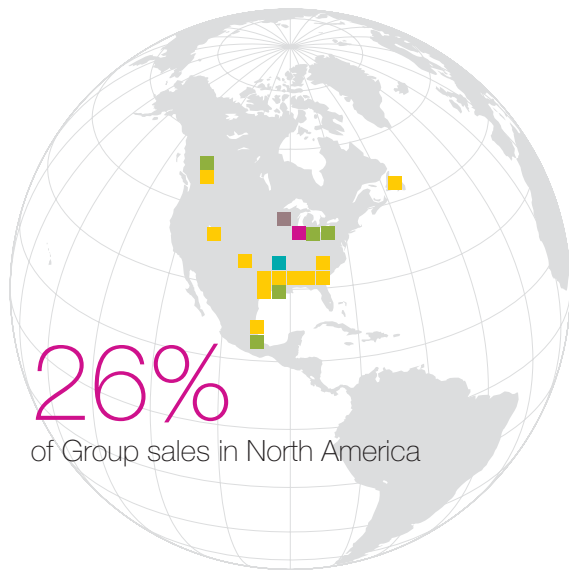
**POWER GENERATION / POWER PLANT CONSTRUCTION:** Areva (France), Dongfang Electric (China), Doosan (South Korea)

**OTHER DISTRIBUTORS (PETROCHEMICALS, INDUSTRY):** Hoberg & Driesch (Germany), ThyssenKrupp (Germany)

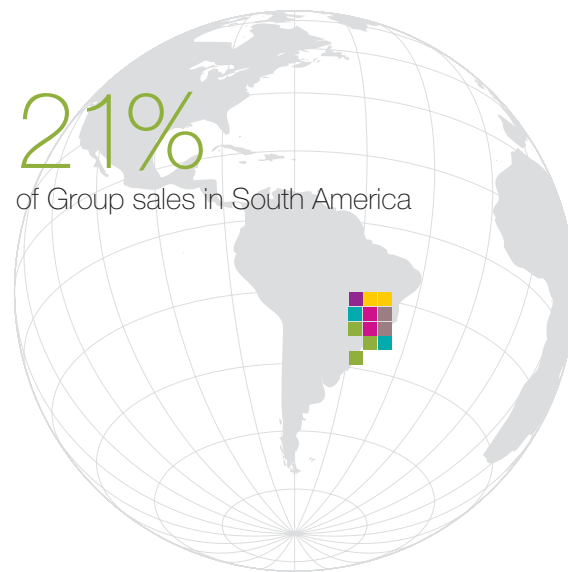
**AUTOMOTIVE, MECHANICAL ENGINEERING TUBE MANUFACTURER:** Salzgitter (Germany)



## NORTH AMERICA



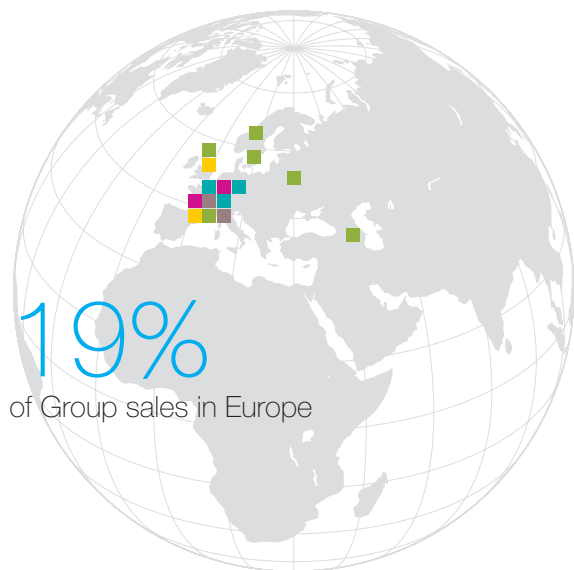
## SOUTH AMERICA



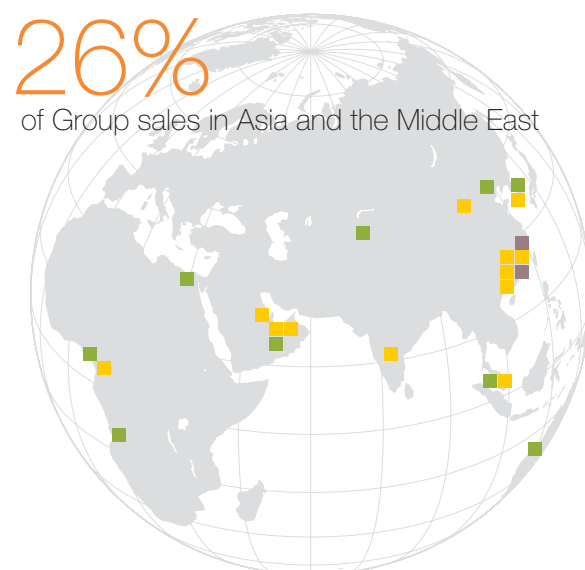
7%

of Group sales in Africa  
and Rest of the world

## EUROPE



## ASIA AND THE MIDDLE EAST



■ Steel mills 
 ■ Tube mills 
 ■ Sales and services offices 
 ■ Finishing units 
 ■ Plantation and mine 
 ■ Research centers

**VIVIENNE COX**  
Chairman of the Supervisory Board



“As an industry leader,  
Vallourec has a responsibility to set a high standard.”

Understanding and responding to stakeholder priorities is deeply embedded in Vallourec's culture. From a commercial standpoint, we work to effectively support our customers with their projects, providing them with the best technology and the highest level of service. Vallourec teams work every day to leverage the Group's engineering and manufacturing excellence and its global presence to provide tubular solutions that create value for our customers.

Vallourec is also strongly committed to maximizing the returns we make to shareholders. Technological leadership, operating efficiency and financial discipline are all designed to create sustainable value. As an industry leader, Vallourec has a responsibility to set a high standard. In environmental matters, we focus on energy, water and waste management at our sites. We also contribute to preserving the environment through our products and services. A good example is the way that Vallourec's advanced solutions enable its customers to extract oil and gas deposits in the safest and most environmentally friendly manner. We also work to make a contribution to the communities where we operate. As an example, we helped restore the *Cine Teatro Brasil Vallourec* in Belo Horizonte, supporting access to art and culture for the city's inhabitants.

Internally, we have very committed employees, who are proud to work for a Group with a long history and heritage and who identify strongly with our company. Our responsibility toward our employees starts with safety: we have to ensure that, at the end of the day, everyone returns home safely to their family. At the Board, we often discuss other issues which affect our employees, including employee share ownership, which is another way for them to be part of the success and the future of the company. Last but not least, we believe it is important to communicate with our employees in a way that is clear, transparent and respectful on how Vallourec is responding to changing conditions in our industry.

Vallourec is a truly international company. Our customer base, our operations, our workforce and our leadership are all international. Vallourec has a history of being successful at integrating new companies everywhere in the world, leveraging the diversity of their experiences and cultures and combining the strengths of each. With its strong positions in key locations, a deeply rooted culture of innovation and a clear focus on increasing competitiveness, I am very confident that Vallourec has a strong future.



**PHILIPPE CROUZET**  
Chairman of the Management Board



“Oil and gas markets continue to be very promising for our premium products and solutions.”

**How would you describe 2013?**

**PHILIPPE CROUZET:** It was a year of growth driven by our dynamic Oil and gas activities, which now represent two-thirds of our sales. We had significant commercial success, particularly in deep offshore, including on Total's CLOV project in West Africa and Petrobras' pre-salt fields in Brazil. We continued to emphasize innovation during the year through our investments in new research and development capacities. Finally, our financial performance improved, as best illustrated by the return to positive free cash flow in the fourth quarter of the year.

**You've just completed a major strategic investment cycle.**

**What are the benefits?**

**P. C.:** With our new U.S. and Brazilian plants, both dedicated to the Oil and gas sector, we are increasing production while also extending our offer. In doing so, we can better support our customers in the U.S. and effectively serve international markets from Brazil. We also continued to invest in finishing units located close to major oil-producing areas, such as the Middle East, where our local presence provides us with a competitive ad-

vantage. In Europe, our plants specializing in manufacturing small, high-added value series remain the heart of our industrial know-how, although we need to continue to increase our competitiveness. This global organization increases our flexibility and allows us to be even more competitive.

**What are the major trends in Oil and gas?**

**P. C.:** Oil and gas markets continue to be very promising for our premium products and solutions, which enable us to take full advantage of increasingly complex operating conditions. Our responsiveness has been demonstrated in supporting the North American shale gas revolution, the opening of pre-salt fields in Brazil and the increasing operation of wells in acid environments in the Middle East. Beyond these positive overall trends, short-term market developments can sometimes be more erratic - for example, the recent development of shale oil in the U.S. - and this is why we must constantly adapt.

**What are your priorities for 2014?**

**P. C.:** After several years of strategic investments, our priorities are primarily operational.

With the ramping up of our new plants, we need to focus on optimizing our industrial organization. We must also continue to push technological boundaries and develop our service offerings to differentiate ourselves and confirm our position as the partner of choice for our customers on each project. In the current environment, we must also continue our efforts to become more flexible and responsive. I have confidence in the determination of our teams, who contribute to these priorities on a daily basis, helping to strengthen Vallourec's leadership.

# GOVERNANCE



## MANAGEMENT BOARD

- 1. PHILIPPE CROUZET**  
Chairman of the Management Board
- 2. JEAN-PIERRE MICHEL**  
Chief Operating Officer
- 3. OLIVIER MALLET**  
Chief Financial Officer and General Counsel



## OTHER MEMBERS OF THE GROUP MANAGEMENT COMMITTEE

- 4. PHILIPPE CARLIER**  
Director of the Upstream – Industry business line
- 5. NICOLAS DE COIGNAC**  
Director of the Powergen – Speciality Powergen – Pipe Projects business line
- 6. FRANÇOIS CURIE**  
Director of Group Human Resources

- 7. STÉPHANIE FOUGOU**  
Group General Counsel
- 8. DIDIER HORNET**  
Director of the OCTG – Drilling business line
- 9. ALEXANDRE LYRA**  
Director of the Brazil business line

## OTHER MEMBERS OF THE OPERATIONAL COMMITTEE

- 10. FLAVIO DE AZEVEDO**  
Director of Technology, Research, Development and Innovation
- 11. DIRK BISSEL**  
Director of the Drilling Products Division
- 12. JEAN-YVES LE CUZIAT**  
Director of Strategic Marketing and Sourcing

- 13. ANDREAS DENKER**  
Director of the Industry Division
- 14. PIERRE FRENTZEL**  
Director of Strategic Projects
- 15. SKIP HERALD**  
Director of OCTG North America
- 16. LAURENCE PERNOT**  
Director of Group Communications
- 17. DOMINIQUE RICHARDOT**  
Director of the Pipe Projects Division





## SUPERVISORY BOARD

Chairman

### VIVIENNE COX

Director of BG Group Plc, Pearson Plc and Rio Tinto Plc

Vice Chairman

### PATRICK BOISSIER

Chairman and CEO of DCNS

Members

### OLIVIER BAZIL

Director of Legrand, Michelin, Château Palmer and Firmenich International

### PASCALE CHARGRASSE

Business Development Manager at Valinox Nucléaire

### JEAN-FRANÇOIS CIRELLI

Vice Chairman, Executive Vice President of GDF SUEZ

### MICHEL DE FABIANI

Director of BP France and Valeo

### JOSÉ CARLOS GRUBISICH

Chairman of Eldorado Brasil Celulose S.A., Director of Halliburton

### ANNE-MARIE IDRAC

Director of Saint-Gobain, Bouygues, Total and Mediobanca

### EDWARD G. KRUBASIK

Member of the Central Advisory Board of Commerzbank

### ALEXANDRA SCHAAPVELD

Member of the Supervisory Board of Holland Casino, Bumi Armada Berhad and Société Générale

### BOLLORÉ

Represented by Cédric de Baillencourt, CFO of Bolloré group

Non-voting Board member

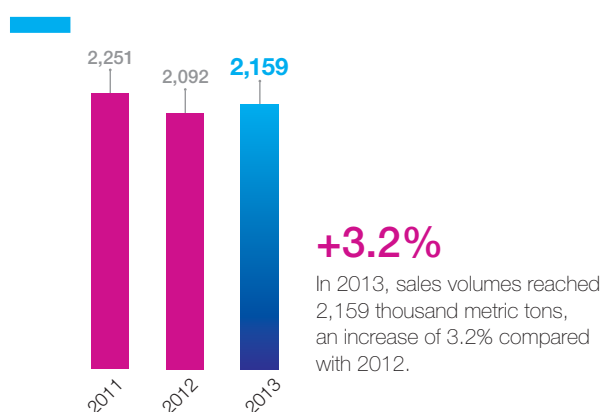
### FRANÇOIS HENROT

President of investment banking activities of the Rothschild Group

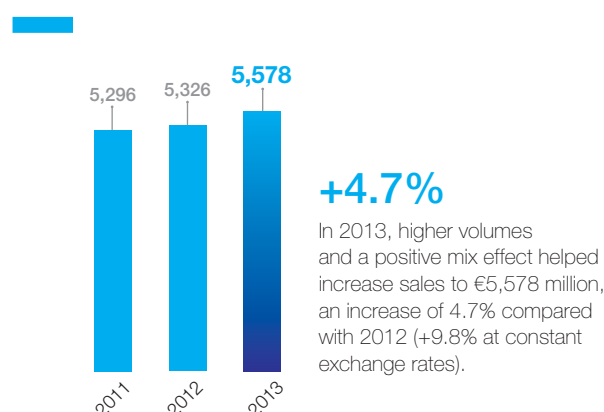
# FINANCIAL RESULTS

After several years of strategic investment, Vallourec's 2013 financial and commercial performance benefited from the first effects of its new industrial organization. Vallourec's sales, EBITDA and net income Group share increased in 2013.

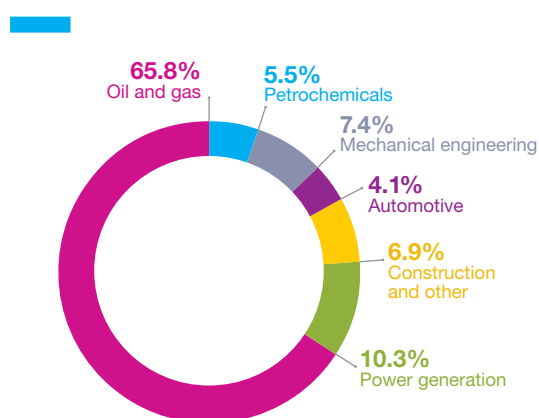
**SALES VOLUMES**  
IN K METRIC TONS



**SALES**  
IN € MILLION



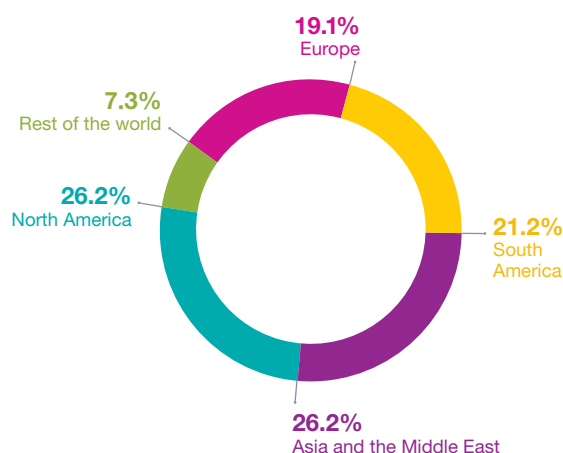
**SALES BY MARKET**



In 2013, Oil and gas sales were up 13.5% compared to 2012, reaching €3,669 million. Today, this market represents 66% of the Group's total sales, compared with 61% in 2012. The share of sales from Petrochemicals is one point lower than in 2012. Power generation and Industry sales are two points lower than in 2012.



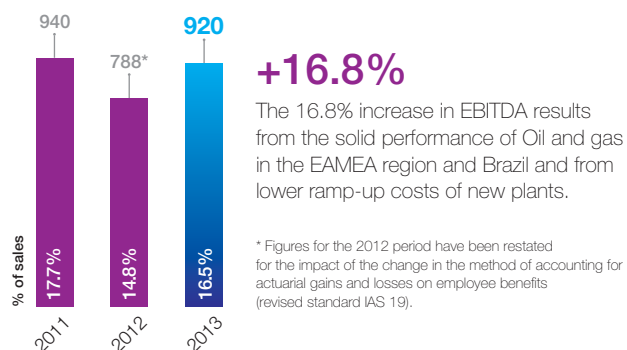
## SALES BY GEOGRAPHIC REGION



The share of sales generated in Asia and the Middle East increased from 18% in 2012 to 26% in 2013. The increase reflects higher demand for high advanced premium products, particularly in the Middle East. The share of sales generated in North America fell by 3 points, partly due to a competitive price environment and a less favorable product mix. Sales in Europe continued to decline in 2013.

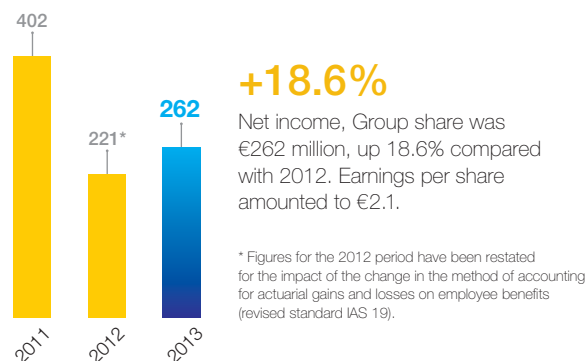
## EBITDA AND OPERATING MARGIN

IN € MILLION



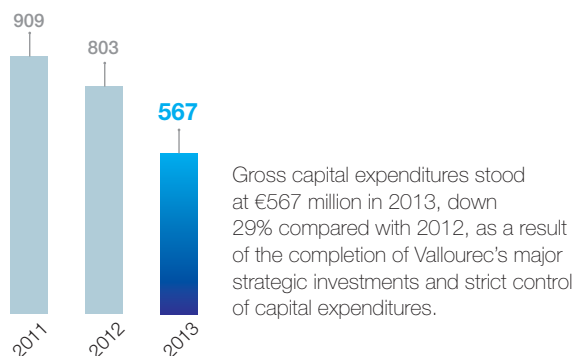
## NET INCOME, GROUP SHARE

IN € MILLION



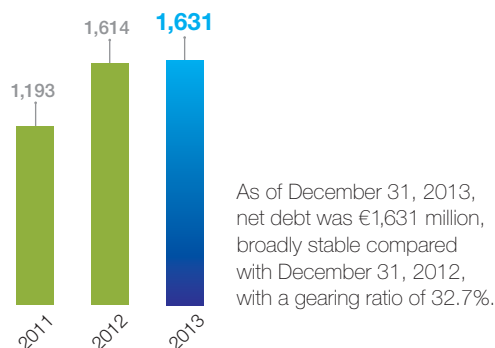
## GROSS CAPITAL EXPENDITURES

IN € MILLION



## NET DEBT

IN € MILLION



# OUR SUSTAINABILITY PERFORMANCE OBJECTIVES

Respect for employees and stakeholders, the wise use of resources and minimization of its environmental footprint are the basis for Vallourec's sustainable development policy. A series of key indicators are used to set tangible objectives and measure our progress.

**ENSURE THE SAFETY AND PROTECT THE HEALTH OF OUR EMPLOYEES; OFFER EACH EMPLOYEE GOOD WORKING CONDITIONS.**

75%

The number of **accidents with lost time per million hours worked (LTIR)** has declined **75%** over five years.

In 2013, **34,000 safety inspections and more than 360 continuous improvement teams** met as part of the CAPTEN+ Safe program.

At the end of 2013, the **LTIR was 2.26** and **TRIR** (number of reported accidents per million hours worked) was **5.5**, exceeding targets (2.35 and 6.5, respectively).

→ **TRIR OBJECTIVE 2014: 5**

**TRAIN AND MOTIVATE OUR EMPLOYEES THROUGH SKILLS DEVELOPMENT, RECOGNITION OF EXPERTISE AND TALENT, PROMOTION AND CAREER DEVELOPMENT.**

76%

Percentage of **employees expressing satisfaction in belonging to Vallourec** in a 2013 survey of all employees in all countries.

**80%, or 4 out of 5 employees**, participated in the survey.

→ **THE SURVEY WILL BE CONDUCTED AGAIN IN 2015.**

## OTHER 2013 INDICATORS

21%

of women in management

62%

of employees participated in at least one training session, or **582,000 hours** spent on professional training

163,000

hours of HSE training

€8.7 million

allocated to actions to support local communities



**SATISFY OUR SHAREHOLDERS  
OVER THE LONG TERM.**

B+

Average rating in 2013 of Vallourec's social, societal and environmental performance by **four of the most significant non-financial rating agencies**.

Vallourec is included in three new indices of Vigeo, the leading European social ratings and analysis agency: **the Euronext Vigeo France 20, the Euronext Vigeo Europe 120 and the Euronext Vigeo World 120.**

**→ OBJECTIVE 2014: STABLE AT B+**

**RESPECT OUR ENVIRONMENT AND PROTECT  
BIODIVERSITY BY PREVENTING POLLUTION  
OF ALL TYPES, DECREASING WATER CONSUMPTION,  
RECYCLING WASTE AND REDUCING DISTURBANCES.**

93%

Percentage of **waste recycled in 2013**, exceeding the target of 92%.

**→ OBJECTIVE 2014: 94%**

**ESTABLISH A NETWORK OF RELIABLE  
AND RESPONSIBLE SUPPLIERS.**

315

The number of suppliers that have been subject to a formal social and environmental responsibility assessment in 2013.

**→ OBJECTIVE 2014 (CUMULATIVE): 1,000**

**IMPROVE THE ENERGY EFFICIENCY  
OF OUR EQUIPMENT AND REDUCE CARBON  
EMISSIONS FROM OUR MANUFACTURING  
PROCESSES.**

14%

Percentage of **energy performance improvement** since 2008 at equivalent order book and volumes as part of the GreenHouse program, which sets a 20% target by 2020.

In 2013, the Group consumed **954 kWh of electricity and gas per metric ton processed**, an improvement of 2.7% compared to 2012.

**→ OBJECTIVE 2014: 954 kWh per metric ton processed** across the Group's full perimeter, excluding the new American and Brazilian units, which are still ramping up and will be integrated in 2015.

7.37%

of Vallourec's capital is held by employees

57%

of substances identified as CMR (carcinogenic, mutagenic, toxic for reproduction) have been replaced

96%

of production comes from ISO 14001 certified sites. This rate will reach 100% in 2015 after certification of the Jeceaba site in Brazil

50%

of steel used by Vallourec is sourced from recycled scrap

40%

reduction of water withdrawals over 10 years

36%

of the energy required by the company is from renewable sources



# OUR GROWTH STRATEGY



More premium, more local, more competitive.  
To continue to deploy these three strategic priorities and create value, Vallourec relies on the commitment of the company's 24,000 men and women and a strong culture of innovation and improvement.



## PREMIUM

Vallourec constantly innovates and expands its range of premium products, services and solutions to meet its customers' new challenges, maintain its technological edge in increasingly competitive markets and strengthen its global leadership.

## LOCAL

Vallourec is present in 20 countries, with more than 50 industrial sites, numerous sales and services offices and six research centers. It invests in growth markets and positions itself as close as possible to its customers, including major energy production sites.

## COMPETITIVENESS

To improve its competitiveness, Vallourec intends to leverage the new capabilities in which it has invested in recent years and benefit from economies of scale. It also conducts an extensive cost reduction program.



# A STRATEGY BUILT AROUND EXCELLENCE

One of the main sources of value creation in Vallourec's strategy is industrial excellence, which has been driven forward for several years through a continuous improvement program called CAPTEN+. Focused on performance-driven areas and including a major savings plan, the program mobilizes all company employees toward the ultimate objective of improving customer satisfaction.

## AN ABSOLUTE PRIORITY ON SAFETY

Employee safety is the top priority and the first component of Vallourec's drive for industrial excellence. CAPTEN+ Safe, the ambitious safety improvement program has reduced the number of lost-time accidents by 75% in five years. It includes steering committees at all sites, workplace safety inspections, continuous improvement teams focused on safety and risk evaluation and prevention measures. While awareness, dissemination and reinforcement of a safety culture continue each year, 2013 saw particular emphasis placed on the prevention of serious accidents (see pages 60 and 61).

## QUALITY: A CENTRAL FOCUS FOR ALL

With the impeccable quality required of premium products, quality is the other key priority for Vallourec. The program CAPTEN+ Quality places customer satisfaction as a central focus for each employee, regardless of their position, supported through strong management involvement. Employees are trained in tools and methodologies to continuously improve production processes and eliminate defects that affect product quality. Some

plants have already achieved good results, with significant reductions in defects as well as in claims and costs related to substandard quality.

## IMPROVING FLOWS AND REDUCING WASTE: LEAN MANAGEMENT IN ACTION

How to streamline production while achieving resource savings? By implementing a lean management approach. This is the mission of

lean management specialists at Vallourec production sites. The company focuses on continuously improving four operational performance areas: equipment efficiency, lead times with reduced time for product flows, controlling the level of work-in-progress for better rotation of raw materials and productivity. This last area involves ensuring that the appropriate level of resources is used, whether human, energy, fluids or raw materials.



← In October 2013, Vallourec's Nansha (China) plant produced its first tube for steam generators.



↑ Quality: after safety, priority number two for Vallourec.



Ultimately, this “lean production” approach increases the company’s ability to meet the demands of its customers as soon as possible and at the best prices, increasing Vallourec’s competitiveness.

# €293 million

savings achieved between 2011 and 2013, more than offsetting cost inflation.

## ADAPTING THE SUPPLY CHAIN TO NEW CONDITIONS

More local content, more associated services, more customization and shorter lead times... Customer expectations are diverse and increasingly challenging. It is the same for the company’s industrial organization: before being delivered to customers, products can take multiple routes, depending on the capacity and capabilities of the means of production. This has become even more the case with the start-up of the new plant in Jeceaba, Brazil, which exports tubes for the oil and gas market, and the new finishing plant in Saudi Arabia, which serves the local market. The company’s ability to adapt to this environment requires an efficient supply chain. Beginning with the response to a customer’s call for tenders and ending with the delivery of products and services, supply chain industrial routes are optimized to improve customer satisfaction and the company’s profitability. ■

## Listening to the customer’s voice

To achieve business excellence, Vallourec is reinforcing its proximity to its customers. The objective is to develop a more detailed understanding of their needs in order to build together a range of adapted products and services, including a quantified value proposition. Vallourec ensures that customer expectations are the focus of employees’ attention, including through more systematic meetings at all levels. Also part of this process is strengthening the role of Group- or division-level “Key Account Managers,” who act as true ambassadors to the customer. Supported by a dedicated team, they build an “account plan” that enables analysis of the



customer’s issues, environment and strategy. On the basis of this analysis, Vallourec’s approach, strategy and plan of action are defined, followed by the building, sale and delivery of competitive high value added solutions. As customers seek to maximize their profitability,

Vallourec attempts to measure the impact of its products and services on the total cost of its customers’ operations. This approach enables the company to better structure its solutions and more clearly frame its commercial proposition.

# A STRONG INNOVATION CULTURE SERVING CUSTOMERS

Innovation is imbedded in Vallourec's DNA.

The company's history is based on its ability to develop innovative manufacturing processes and premium products and solutions. In an increasingly competitive environment, innovation is a key priority for Vallourec in maintaining its technological leadership and anticipating the needs of its customers.

Being able to satisfy its customers by meeting their current and future needs; being able to anticipate the technological challenges of tomorrow. These are Vallourec's innovation challenges. It means, for example, bringing new solutions to help exploit increasingly complex hydrocarbon deposits and enhancing the energy efficiency of power plants. It's also about improving manufacturing processes to make them even more flexible and competitive and inventing services that create added value for customers.

Faced with the increasing demands for reliability and safety of installations and tighter regulations, the importance of innovation is even clearer. Vallourec must be able to respond to the profound and rapidly changing needs of its customers by providing customized solutions that are safe, reliable and environmentally friendly, in line with its premium positioning. To achieve this, Vallourec has significantly increased its R&D in recent years.

## **SIX RESEARCH AND COMPETENCE CENTERS WORLDWIDE**

During 2013, the company invested 87.4 million euros in research and development. More than 500 engineers and technicians work at its production sites and six research centers located in France, Germany, Brazil and the U.S. These centers, equipped for high performance testing and modeling, provide expertise in Vallourec's fundamental disciplines, including metallurgy, thermal, non-destructive testing, corrosion, surface treatment and product and process simulations.

In 2013, a new center of expertise was opened near the Petrobras research center, inside the Brazilian national oil company's Rio de Janeiro technological park, enabling Vallourec to work even more closely with its customer to meet its needs related to pre-salt field operations. Vallourec has also inaugurated a new research center in Düsseldorf, Germany, dedicated to the design and development of steel tubes for power plants and oil and gas pipelines (see box on page 49). Finally, the Group increased its VAM® premium connections testing capacities (see box opposite).



↑ More than 500 R&D technicians and engineers work for Vallourec around the world.





↑ Vallourec researchers continue to develop higher performing steel grades.



↑ The competence center in Riesa (Germany) is a world-unique mini-factory capable of reproducing tube manufacturing processes.

#### **CUSTOMER FOCUS, WORKMANSHIP QUALITY AND A CULTURE OF INNOVATION: THE KEYS TO SUCCESS**

Innovation depends on a clear understanding of underlying market trends and customer needs as well as high-quality execution. The application to innovation of an effective project management methodology (in which 300 people were trained in 2013) and close collaboration between R&D and marketing are helping to improve efficiency and responsiveness. The resulting acceleration of marketing innovations is contributing to increased market share, a key company objective. Vallourec also seeks to foster and disseminate a culture of innovation through multiple vehicles, including Vallourec University, Knowledge Management, process communities and expert networks. The annual Innovation Day involves employees worldwide with the recognition of exemplary achievement through the award of an innovation prize. ■

## €87.4 million

invested in research  
and development in 2013.

## Testing VAM® connections: extending the frontiers of innovation



The performance of full-scale testing corresponds to a growing demand from oil operator customers that face increasingly stringent standards and reliability requirements. Vallourec's three connection test centers located in France, the U.S. and Indonesia are equipped with ultra-modern tools to

perform full-scale verification of tube and VAM® connection sealing qualities under the most extreme conditions. These tests include subjecting connections to make-up and break-out operations, simulation of combined loads (tension or compression), deformation, high temperature resistance

and resistance to fatigue. Following the doubling of testing capacity in Houston (U.S.) in 2012, Vallourec announced in early 2014 the doubling of capacity at its Aulnoye (France) center in 2016. The testing capabilities complement the center's development activity, which focuses on the design of premium threaded connections, the development of proprietary steel grades and the industrialization of threading lines. This new investment demonstrates Vallourec's ability to extend the frontiers of technological innovation on behalf of its customers and represents a true competitive advantage. The construction of a fourth testing center in Brazil is planned for 2015.



For more information:  
[www.vallourec.com](http://www.vallourec.com)

# THE MEN AND WOMEN OF VALLOUREC, THE KEY TO OUR SUCCESS

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The expertise and commitment of its employees, as well as the diversity of their profiles, experience and cultures, drive Vallourec's success.

Supported by a rigorous and ambitious human resources policy, the company is prepared to meet challenges, including those of achieving excellence and constant innovation.

In recent years, Vallourec has undergone a profound transformation from a European to an international company, from a mainly exporting company to one with a strong presence closer to its markets, from a metallurgy to an energy sector company, from a manufacturer of products to a solutions provider. To accompany these changes and provide the means to achieve its ambitions, the company needs trained and motivated people able to adapt to its changing businesses and markets.

## **CULTIVATING TALENT, DEVELOPING EXPERTISE**

Vallourec balances its current and future skill needs and the individual aspirations of its employees by offering them real career paths. Its approach to talent management relies on an efficient HR information system, which enables individualized knowledge of employees. This tool, used to manage individual evaluations and objectives, serves as a reference of skills and allows for the detailed management of employee potential. It also plays a key role in talent reviews and in consideration of mo-





↑ Vallourec University, the company's center of excellence.

↑↑ Employee expertise, an invaluable asset for Vallourec.



↑ Vallourec in the Middle East: a multicultural team focused on customer service, reflecting the Group's characteristics.

bility and succession plans. To support strategic, managerial and technical performance and promote the dissemination of the company's culture, the company is able to rely on Vallourec University, a center of excellence where employees share and develop their skills on topics central to the company's strategy, such as innovation, customer focus, leadership and project management. A network of Experts was also established to promote individual careers in key company technologies, such as steelmaking, rolling, heat treatment, threading and welding.

#### **SUPPORTING AND STRENGTHENING MOTIVATION AND COMMITMENT**

Beyond these career management programs, which promote the development and motivation of employees, Vallourec has been able to create conditions that build a high level of commitment. As a result of its policy of fair and motivating remuneration and high-quality social dialogue, employees consider Vallourec a good place to work. To monitor employee relations, Vallourec conducted a worldwide survey in 2013 on employee perceptions and

expectations of the company. The initiative met with a very positive response, with a participation rate of 80%, well above the average rates achieved by comparable surveys. 76% of respondents say they are motivated, have a good opinion of Vallourec's reputation, are kept well informed and believe that their working conditions are good. Their expectations, which relate to better recognition of performance and enhanced collaboration between teams, will be the subject of locally implemented action plans.

#### **A CORPORATE CULTURE THAT UNITES**

The survey also revealed strong consistency in how the company is perceived by employees, regardless of country or origin, demonstrating the existence of a true corporate culture that transcends differences. Reflecting the strong sense of employee belonging, the adoption of the single Vallourec brand won general acceptance, with deployment proceeding smoothly during 2013. Its adoption marks the culmination of the integration of many companies acquired or created by Vallourec worldwide. The brand also provides a

new means of uniting Vallourec's 24,000 employees around its ambition, culture and common values, strengthening the company's ability to achieve its growth targets. ■

80%

Rate of employee participation in the global internal "Opinion" survey conducted in 2013.

85%

Percentage of employees who responded that they are proud to work for Vallourec.



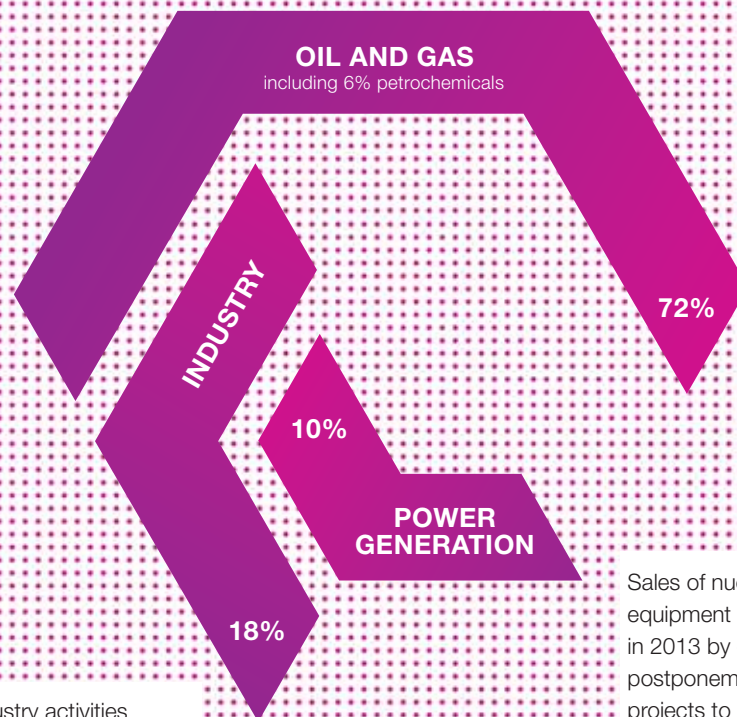


# OUR ACTIVITIES IN 2013



In 2013, Vallourec continued to expand its range of products and services for Oil and gas applications, strengthening its competitive position and increasing its volumes. This activity accounted for two-thirds of revenues, contributing to improved results. In contrast, the Power generation and Industry activities experienced a decline.

The significant increase in Oil and gas revenues in 2013 (+ 13.5% compared to 2012) is partly due to higher volumes in the U.S. as a result of the new rolling mill and to increased demand for the most sophisticated premium products in the Middle East.



In 2013, Vallourec's Industry activities in Europe were affected by price pressure and sluggishness in the mining sector. In Brazil, however, the company benefited from a recovery in the automotive and agricultural markets.

Sales of nuclear power plant equipment were affected in 2013 by customer postponements of certain projects to 2014. Price pressure and the absence of new power plant projects also continued to weigh on the market for conventional power plants.



# “Almost all of the net growth in total oil production in the next 20 years will come from unconventional oil.”

Fatih Birol,  
Chief Economist, International Energy Agency (IEA)

**The global energy system will be dominated by fossil fuels for many years to come.**

In her seminal report to the UN Secretary General 25 years ago, former Norwegian Prime Minister Brundtland stated that our ability to develop sustainably and avoid major environmental problems required that we reduce our reliance on fossil fuels. At the time, the share of oil, gas and coal in the global energy mix was 82%. Today, after 25 years of effort to reduce it, that share is still 82%. Despite the potential consequences, fossil fuels will continue to dominate global energy systems for years to come, with oil and gas playing a pivotal role. Drivers include the mobility needs and rising standard of living of emerging nations, increasing electrification and the replacement of coal by gas to reduce pollution.

**Oil and gas will come from more complex fields and both conventional and unconventional sources.** Volumes sourced from more complex fields means increased production costs and higher prices. The era of cheap oil is over and today's \$100/barrel prices are unlikely to drop significantly for a sustained period. Better technology and science, including geology, will enable the discovery of new oil and gas resources and high prices means more unconventional oil will come to market, including shale oil, oil sands and deepwater offshore deposits. Almost all of the net growth in total oil production in the next 20 years will come from unconventional oil.

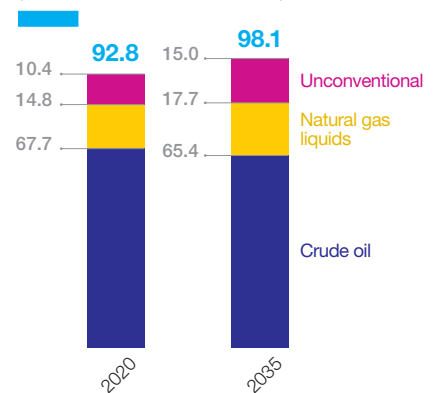
**Among the fossil fuels, natural gas has the brightest prospects.**

It is a natural fuel to replace coal in many countries. In developed countries, 60% of existing coal-fired power plants will be retired in the next 20 years. The key question will be the price of natural gas. If gas prices remain at very high levels, which is the case at present in Asia, and coal prices remain low, coal is likely to remain a very stubborn competitor. If prices for natural gas are at competitive levels, we could see its proportion of the energy mix increase to as much as one-quarter.

**Unconventional gas represents a huge energy resource base throughout the world.** Half of global gas resources are unconventional. In addition to North America, substantial resources exist in China, Ukraine, Poland, France, Germany and Australia. Replicating North America's success in developing these resources, however, will be neither easy nor quick. Production may be held back by several factors, including: unfavorable geology; concerns about the environmental impact of hydraulic fracturing; lack of access to resources and transportation infrastructure; absence of a local oil services industry; and unattractive investment options and regulatory frameworks. For these reasons, we expect more than half of the growth

in unconventional gas production between now and 2020 to come from the two main established producers, the U.S. and Canada. ■

**OIL PRODUCTION AND SUPPLY BY SOURCE**  
(IN MILLION BARRELS PER DAY)



Source: IEA, World Energy Outlook 2013, New Policies Scenario.

## MARKET CHALLENGES

- Growing energy demand.
- Encouraging investment in some countries.
- Relative cheapness of coal versus gas.
- Insufficient geologic data to rapidly develop unconventional sources in some countries.



# OIL AND GAS: PREMIUM SOLUTIONS FOR THE ENTIRE PRODUCTION LINE

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**With constantly rising global demand for oil and gas and increasingly difficult to access deposits, Vallourec is responding to the needs of the Oil and gas industry with a wide range of premium tubular solutions, seamless steel tubes, connections and related services.** In markets constantly seeking innovative products able to withstand increasingly extreme conditions and meet more stringent safety standards, the Group is developing premium products covering the entire hydrocarbon production chain, starting with Oil Country Tubular Goods (OCTG). These threaded seamless tubes are used in oil and gas well equipment, particularly for casing and tubing during the exploration and production phases. Vallourec also has a full range of products for

well drilling, including drill pipe, downhole tools and accessories for drill columns. In order to connect with each other, the seamless tubes are equipped with threaded connections that ensure perfect sealing of columns. For over 40 years, Vallourec has been designing and developing the leading VAM® premium connections brand. With research centers located in France (Aulnoye) and the U.S. (Houston), these products are constantly evolving to offer the best performance and adapt to changing user needs. The extension of qualification and testing capabilities for VAM® connections in the U.S. and Indonesia, and underway in France and Brazil, will meet the growing demand from customers closer to their needs. ■

## All the tubes, from wells to processing units

Vallourec also acts downstream of oil and gas drilling, supplying tubes and accessories needed to transport hydrocarbons onshore and offshore. For the offshore environment, for example, Vallourec provides risers and flowlines that enable hydrocarbons to be brought from the wellhead to the surface, then routed to processing units. Also for the specific subsea construction market (or SURF for Subsea Umbilicals, Risers and Flowlines), Vallourec provides super duplex stainless steel tubes to equip umbilicals, these "lines" consisting of small diameter tubes, cables and / or optical fibers, dedicated to the transport of fluids, energy supply and the transmission of information.

The Group's products also are used in hydrocarbon processing facilities, in the downstream chain. They equip, in particular, FPSO<sup>(1)</sup> processing units, FLNG<sup>(2)</sup> and floating production platforms, liquefaction and regasification terminals, refineries and petrochemical plants. Vallourec supplies a wide size range of carbon steel and alloy steel pipe for these applications, as well as hollows and fittings adapted to the specific needs of each project. ■



↑ Line pipes are welded at the Evanton (Scotland) spoolbase.

## VAM® premium connections, the benchmark reference for all applications

The VAM® premium connections line continues to expand for all unconventional applications that support the production of oil and gas, meeting with numerous successes in 2013, both technical and commercial. With the growth of shale hydrocarbons in the U.S., a Vallourec working group ("Customer Advisory Board") of oil operators, well design consultants and service companies has been meeting since 2010 to develop a vision throughout the entire chain and identify market needs for non-conventional hydrocarbons. Through these exchanges with sector professionals, an immediate need for premium connections for medium-length lateral well sections (2,000-5,000 feet) was identified, leading to the rapid development of the VAM® SG connection. Anticipation of a future need for adapted connections for longer lateral sections (up to 10,000 feet), which enable the number of wells to be limited, resulted in the development by Vallourec R&D teams of the VAM® EDGE SF connection, which was launched and qualified in 2013. This new high-end connection's technical features are perfectly adapted to this type of drilling, including higher resistance to tension and torque and a gas seal meeting the highest ISO standards. The first orders were received in the U.S. at the end of 2013.

Numerous orders were also received in 2013 for the VAM® BOLT integral premium connection for large diameter casings. Its mechanical integrity and sealing qualities are especially well-suited for high pressure-high temperature (HP / HT) wells located in the deep offshore waters of the Gulf of Mexico, off the coast of Brazil, the Gulf of Guinea, North Africa and Asia Pacific.

The VAM® 21 line continues its commercial development. Available in diameters from 5 to 14 inches - between 10 and 30 centimeters - the VAM® 21 connection is today recognized as a benchmark reference for the most demanding applications such as HP / HT wells as well as for more traditional wells. It is qualified to the latest approved standard for the most demanding applications (ISO CAL IV version 2011) and by major oil and gas companies. Its sealing performance and mechanical strength, equal to that of the tube itself, and its ability to withstand high temperature and pressure levels give it unmatched reliability. At the end of 2013, 10 million feet of VAM® 21 had been sold in 28 countries to 64 clients.

(1) Floating production storage and offloading.

(2) Floating liquefied natural gas.

Finally, Vallourec continued to develop its Cleanwell® solutions, to replace the storage and screw fastening greases used previously for OCTG connections. Available on lines such as VAM® TOP and VAM® 21, the Cleanwell® Dry version has been used successfully under real conditions in the North Sea, Russia and Africa. The product responds fully to customer expectations in terms of work site productivity gains and environmental protection. ■



↑ As of the end of 2013, 10 million feet of VAM® 21 connections had been sold to 64 customers in 28 countries.

## Facilitating drilling operations in extreme conditions

Vallourec launched two new grades of Sour Service drill pipe in 2013 adapted to drilling operations in extreme environments. The VM-120 DP S and VM-120 DP MS grades have strength and high resistance in corrosive and mildly corrosive environments. They also ensure the integrity of the drill strings in wells containing hydrogen sulfide, a gas that can cause drill pipe cracking. These products are particularly suitable for corrosive oil and gas deposits such as those being explored in Russia, the Middle East, China and North America.

Vallourec also launched a new generation line of drill strings in 2013 for the installation of casings or equipment in very deep waters, the CrushFree™ Landing String. The new equipment consists of a very tough, crush-proof pipe and thick walls that ensure the drill string, capable of lifting up to 1,100 metric tons, is not crushed when held by the jaws of the platform's rotational table.

For the shale hydrocarbon market, which has specific constraints, Vallourec has also developed an innovative drilling pipe. Its unique design optimizes drilling performance, including by accelerating the rate of progress of the tool and improving pipe guidance. In addition, it can drill vertically and horizontally, whereas different types of pipe were needed previously. Finally, this pipe can reduce costs and lengthen the life of the operating tubes. ■

### ENERGY EFFICIENCY Vallourec Bellshill plant certified ISO 50001

Vallourec's OCTG tube finishing plant in Bellshill, Scotland, was certified to ISO 50001 energy management standards in 2013. The application of this standard involves implementation and advancement of the entity's own energy management system that results in a significant increase in energy efficiency without additional investment. The objective is to limit the use of energy in the process, reduce production and purchased energy costs and, more generally, to make wise energy use everyone's business (sourcing, production,

processes, etc.). This certification demonstrates Vallourec's commitment to continuous improvement in the energy performance of its facilities. The Group continues its efforts to certify its largest sites ISO 50001 by 2016, in line with its GreenHouse program, which aims to reduce gas and electricity consumption 20% by 2020. Two other Group plants were certified ISO 50001 in 2013: the Saint-Saulve pipe mill in France and the Vallourec Tubos do Brasil plant in Brazil.







↑ The new rolling mill in Youngstown (United States) produces small diameter tubes capable of reaching unconventional deposits.

## New production facilities closer to customers

In recent years, Vallourec has located several production and finishing units closer to its customers and major energy production sites.

To support the development of shale hydrocarbons in the U.S., Vallourec invested over a billion dollars in a new latest generation facility in Youngstown, Ohio. The new unit, which employs 350 people, started up in late 2012 and ramped up throughout 2013. It includes a rolling mill capable of initially producing 350,000 metric tons of seamless small diameter tubes. Entering into commercial phase, it achieved record production in December 2013, confirming the new mill's excellent capabilities. These good results have been accompanied by the growth of finishing capabilities, namely heat treatment and threading. The Youngstown site now consists of a steel mill, a rolling mill specializing in medium diameter tubes and a new rolling mill specializing in small diameter tubes. It offers a full range of products and services necessary for the production of all hydrocarbons, including shale deposits. The Group has become the leading local producer and supplier of premium tubular solutions in North America.

Vallourec is also located closer to its customers in the Middle East, especially Saudi Aramco, the Saudi national oil company. The Group acquired a finishing plant in Dammam in 2011, upgrading its heat treatment and threading lines and supplementing them with another premium threading line and a coupling shop. Dedicated to the heat treatment of tubes and the range of VAM® premium connections, this

state of the art finishing plant has an annual capacity of 100,000 tons. Fully qualified in 2013, it entered its commercialization phase, enabling Vallourec to support its local clients in developing their oil and gas projects by providing not only the most advanced premium products but also more services through greater flexibility and shortened delivery times.

In China, Vallourec strengthened its integrated offering combining steel tubes produced by the Tianda Oil Pipe plant (in which the Group acquired a 20% stake in 2011) and VAM® TOP connections in the VAM® connections threading plant in Changzhou. This offer has shown its relevance and competitiveness in providing access to new domestic tenders. As of 2013, the first orders were delivered to two national oil companies for wells off the coast of China.

Finally, Serimax, a Vallourec subsidiary specializing in welding solutions, has opened an office this year in Perth to participate in the numerous offshore and onshore projects in Australia. This new office will enable the Group to provide greater customer proximity and local support services. ■



# +49.4%

Increase in sales in Asia and the Middle East (2013 vs 2012).

## Supporting growth markets worldwide

While the Group continues to strengthen its local presence, it also seeks to respond to growing markets worldwide.

In partnership with Japan's Nippon Steel & Sumitomo Metal Corporation, Vallourec built a new high-end industrial complex in Jeceaba, Brazil, with the objective of increasing Group tube production capacity by more than 10%. Dedicated primarily to exports, Vallourec & Sumitomo Tubos do Brasil (VSB) supplies semi-finished tubes to other Group plants in Africa, the Middle East and the U.S., where they are finished locally. The plant continued to ramp up in 2013 while completing the qualification process for premium products.

In Europe, the Group's center of excellence, Vallourec made several high-end industrial equipment investments to meet the growing demand for premium products for oil and gas operators worldwide. In France, installation of a new furnace in the Deville-les-Rouen plant increases heat treatment capacity and supports the growing range of casing products. Similarly, the finishing unit at Aulnoye has established a new line to increase its production capacity of VAM® premium connections while also starting to manufacture integral joints. Finally, in Germany, a new integral connections production line for large-diameter pipes started up in 2013 in Rath. ■



### Total chooses Vallourec for Xerelete offshore field in Brazil

At the beginning of 2013, Total selected Vallourec to equip the Xerelete offshore field, located in the Campos Basin 250 kilometers off the coast of Rio de Janeiro and 2,400 meters below sea level. The pipes and premium connections will be produced at the Vallourec Tubos do Brasil plant in Belo Horizonte, Minas Gerais, to equip wells dedicated to the exploration and evaluation of additional oil and gas resources. The plant successfully completed Total's thorough process of

qualification and is now one of its authorized suppliers for OCTG products. Vallourec will also provide several types of services, such as storage, preparation and monitoring of the tubes being installed and post-production inspection to ensure safety and improve execution speed. The choice of a local tubes producer is consistent with Total's strategy of working with local suppliers to enhance the country's available structures in this area. It also helps in accelerating the oil and gas operating processes, avoiding the delays linked to the importing of products.



← VSB production, dedicated for export.

# +10%

Increase in Group tube production capacity from the VSB plant (Jeceaba, Brazil).



← Serimax 09 welding equipment was used for the first time aboard the Seven Borealis, the Subsea 7 pipe laying vessel.

## CLOV: a wide range of premium solutions serving a demanding offshore project

In 2013, Vallourec provided a wide range of premium offshore solutions as part of a large deepwater project – from 1,100 to 1,400 meters deep – operated by Total E&P Angola and involving four oil and gas fields off the coast of Angola.

Vallourec equipped the 34 subsea wells with approximately 15,000 metric tons of OCTG tubes equipped with VAM® premium connections. The Group also delivered drill pipe and dedicated connections for two drilling rigs operating under the most difficult drilling conditions, such as highly deviated or extended reach wells. Over the past three years, it has also provided 28,500 metric tons of seamless line pipe (or 250 kilometers) and bends to Subsea 7, responsible for subsea construction, to ensure the transport of hydrocarbons to the floating production, storage and offloading (FPSO) unit. Vallourec has also delivered 2,400 metric tons of seamless tubes for the construction of columns by which hydrocarbons ascend to the surface (or risers).

In addition to this range of products, covering the entire supply chain, the Group has provided a wide range of services, such as the application of anticorrosive coating to around 150 kilometers of pipe and the provision of 700 hot induction bends. For seven months, Serimax used its new

Saturnax 09 equipment to perform 5,500 pipe welds, including sections sensitive to corrosion and fatigue (see Innovation box on page 43).

By successfully providing the most premium and safest solutions and needed services to its customers for the development of their complex projects, Vallourec has demonstrated its ability to perform as a key partner on the most challenging offshore projects. Production start-up of these wells should occur in 2014, providing a processing capacity of 160,000 barrels of oil per day and a storage capacity of approximately 1.8 million barrels. ■

# 15,000

Metric tons of OCTG tubes equipped with VAM® premium connections provided by Vallourec to equip 34 subsea wells on project CLOV.

# 28,500

Metric tons of seamless line pipe and bends provided to transport hydrocarbons to the FPSO.



# SUPPORTING CUSTOMERS WITH HIGH VALUE ADDED SOLUTIONS

**To maintain its leadership in highly competitive markets, Vallourec continues to develop its range of high added value services, to provide its expertise to customers in all phases of their projects.** In addition to its OCTG products, the Group's range of innovative "Vallourec Global Solutions" is designed to meet its customers' most complex needs, from the well's design to end of life. Among the services with particularly strong growth in 2013 is the provision of specific accessories or the "Field Service" offer, with nearly 200 engineers in 11 service centers around the world ready to intervene 24/7 on wells to assist customers during the descent of the tubes to the wells, inspecting connections and supervising pipe screwing. Provision of inventory management is also very popular with customers who increasingly seek to focus on their core business: Vallourec logistics engineers manage customer tubular product inventories and coordinate the

preparation of tubes for shipment to the platform. Vallourec also provides advice on well design, helping customers to choose the most suitable casing and production tubes (dimensions and steel grades) and the connections that best meet their drilling needs. This technical support is valuable given the increased complexity of projects. The same holds true for its "Tubular Essentials" training, in which Group experts share with operators the best practices in the use, handling and storage of tubes.

The "Vallourec Global Solutions" offer is part of the Group's approach of staying close to and anticipating the needs of customers. A key element of Vallourec's differentiation strategy, it enables customers to secure their operations, simplify management of their complex offshore projects and optimize their productivity. ■



← Vallourec is developing its on-site services offer for customers.



↑ Transporte e Serviços Ltda Vallourec, the company's new services base in Brazil.

## Brazil: new company completes local services offer

To execute service contracts signed with the Brazilian national oil company Petrobras (see box opposite), Vallourec acquired the assets of Lupatech's Tubular Services Rio das Ostras Transport and Services unit in 2013. The unit reinforces the Group's services base dedicated to the oil and gas market already established in this city in the state of Rio de Janeiro, close to Petrobras' Macae unit, located on the Atlantic coast facing the Campos, Santos and Espirito Santo fields. The expanded Vallourec Transporte e Serviços Ltda services unit enables the Group to develop its local offer of tubes inspection, maintenance and coating through a range of equipment, with a 280-member team providing the full range of services as part of Vallourec Global Solutions. ■

## Integrated solutions for subsea construction

The Group also provides its customers with a range of integrated solutions for the specific subsea construction market. Beyond the provision of line pipe, Vallourec offers value-added services such as welding, coating, insulation and logistics. In 2013, Vallourec won several con-

tracts integrating all of these services. One of them relates to an ultra-deepwater project off the coast of Ghana, in which Vallourec, in association with a thermal insulation specialist, will provide production lines using "pipe-in-pipe" technology in which tubing is coated with a high performance insulating material, then slid into another tube. This technology maintains hydrocarbons at a suitable temperature, ensuring proper flow during transport from wellhead to the production platform. After previously preparing subassemblies ashore in France, Vallourec will also provide offshore welding via Serimax, its welding services subsidiary specializing in the Oil and gas market. ■



### Two new service contracts to support Petrobras in its complex offshore projects

Inspection and repair of tubes, on-site service, preparation of drilling operations, coordination of equipment procurement according to the well drilling program... these are some of the services to be provided by Vallourec as part of two new five-year contracts signed with the Brazilian national oil company. In addition, other services include organization of the supply chain in all ports from

which Petrobras supplies its offshore drilling platforms, managing traceability of tubes with RFID (Radio Frequency Identification) technology, provision of engineering and rental of special accessories. This range of high value added services, the largest ever provided to Petrobras, confirms the value of Vallourec's expertise and the relevance of its local on-site services offering, further strengthening its long-term partnership with Petrobras. The two service contracts complement the wide range of tubular products Vallourec provides to its main Brazilian customer through a five-year framework contract that was renewed in late 2012.

## Vallourec expands its range of services in the Middle East



Vallourec inaugurated its first interior well drill pipe coating line in 2013 in Abu Dhabi, near its drill pipe manufacturing plant. The plastic coating applied in the unit can extend the lifetime of the pipe in providing corrosion protection

and strengthen the effectiveness of the hydraulic drill string. Through the integration of this previously outsourced finishing process, the Group is able to offer ready-to-use premium products locally.

15

"Tubular Essentials" technical training sessions provided during 2013. They are intended to provide oil and gas company drilling engineers with best practices for optimal use of Vallourec tubes.

## A new office for on-site assistance in the U.S.

Vallourec has expanded its service network in the U.S. with the opening of a fifth service assistance site, located in Pittsburgh, Pennsylvania. It will provide services dedicated to

preparing platforms, including assistance to operators for the use of tubes and VAM® connections in the Northeastern United States.

## INNOVATION Saturnax 09, new generation welding

Serimax, the Vallourec subsidiary specializing in integrated welding solutions for offshore projects, develops latest generation automatic welding equipment in record time. Saturnax 09 can weld new alloys and adjust tube thickness, thus meeting the new corrosion and fatigue resistance requirements. The equipment was also designed to allow customers to improve productivity through analysis of the value chain. By performing a higher number of joints in less time and ensuring better quality welds and faster application of coatings, Saturnax 09 allows the customer to achieve significant savings. Its HSE<sup>(1)</sup> characteristics have been the focus of special

attention, beginning with the equipment's design phase. It is equipped with a fume extraction system and benefits from improved ergonomics to minimize operator fatigue. Qualified in January 2013, Saturnax 09 was used for the first time aboard the Seven Borealis, Subsea 7's new pipe laying vessel, as part of the CLOV project in Angola. In seven months, it performed 5,500 pipe welds including sections sensitive to corrosion and fatigue, with a productivity gain in welding of more than 15%. The new technology, included in Vallourec's services offer, is part of its strategy of listening to customers and creating value.

(1) Health, Safety and Environment





# “Developing countries will account for 80% of the growth in global demand for electricity.”

Colette Lewiner,  
Energy and Utilities Advisor to the Chairman of Capgemini

## World electricity demand should grow by 70% between 2010 and 2035.

Developing countries, including China and India, will account for 80% of this growth. This is due to the population growth of these countries and the rising standard of living of their people. Recall that 1.6 billion people worldwide do not have access to electricity today, a figure that will hopefully be reduced in the future. In developed countries, demand is stagnant. Industrial consumption, which represents about a third of electricity demand, decreased as a result of the economic crisis and the relocation of industrial production. European electricity consumption has yet to return to pre-crisis levels and will not achieve its past annual growth level of about 2% per year even after it returns to a positive economic cycle, due particularly to energy control measures.

## Various factors are affecting the evolution of the electricity mix.

The first is government policies, including strict measures in Europe to limit CO<sub>2</sub> emissions and subsidies in certain countries for a particular form of energy. The competitiveness of energy sources also influences the mix. For example, low gas prices in the U.S. have changed the mix in favor of gas. The same holds true for the future lowering of costs for renewable energies, which are expected to increase their share of the electricity mix. Available energy

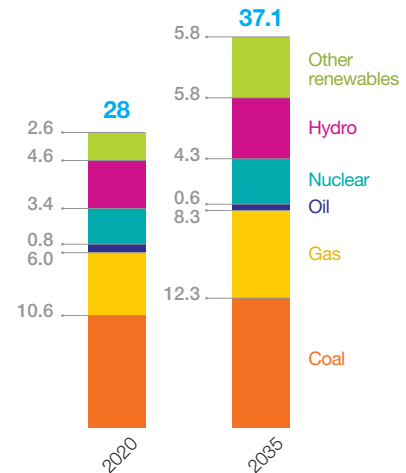
resources are also a factor. With the discovery of shale gas in recent years, gas reserves have increased from 60 to 250 years of consumption and gas is no longer considered a “transitional energy.” The exploitation of shale oil will enable the U.S. to become energy self-sufficient, altering geostrategic perspectives.

## Coal today is the primary source of electricity production.

Over the past decade, the growth of coal-generated electricity equaled the combined growth of nuclear, wind and hydro power. With regard to the global energy mix, the International Energy Agency estimates that by 2035, the growth of gas consumption will be much higher than that of coal and oil. But this assumes that all countries implement measures to restrict CO<sub>2</sub> emissions, which remains to be confirmed. Oil and coal will remain dominant, followed by renewables. As for nuclear energy, contrary to the very pessimistic forecasts following the Fukushima accident, it continues to grow although the pace of new plant construction has slowed. Growth in this area is mainly occurring in Asia - China has 28 plants under construction - and in new countries, such as the Gulf states. Many countries are extending the life of their plants, such as in France where an extensive refurbishment is being undertaken by EDF (Électricité de France). Nuclear energy has a future because it is not possible to reduce emissions

of greenhouse gases without this source of power generation. ■

**POWER GENERATION BY SOURCE IN 2020 AND 2035 (IN THOUSANDS OF TWH)**



Source: IEA, World Energy Outlook 2013, New Policies Scenario.

## MARKET CHALLENGES

• Control of electricity consumption in developed countries.

• Security of supply.

• Meeting the fast growing needs of developing countries.

• Control of CO<sub>2</sub> emissions.

# POWER GENERATION: A COMPLETE OFFER FOR POWER PLANTS

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**With the world's broadest portfolio of tubes required for the operations of conventional and nuclear power plants, Vallourec focused on ramping up its new plants in 2013, particularly in China.** The Group's offer includes all of the seamless tubes needed in water wall panels, superheaters, headers and piping system as well as welded tubes for condensers, feedwater heaters and MSR. Through its subsidiary Valinox Nucléaire, Vallourec provides products for the nuclear environment and seamless tubes for steam generators. The Group covers all of its clients' needs through a full range of premium tubes, in terms of both dimensions and grades, ranging from carbon

steel to high-alloy steels, to titanium, stainless steel and special nickel alloys.

For the new generation of ultra-supercritical coal plants being built mainly in China today, the challenge is to produce tubes capable of withstanding very high temperatures of up to 620 degrees, extreme pressure conditions, on the order of 220 bars, and corrosion. Targets for the next generation of "advanced ultra-supercritical" plants are 700 degrees and 350 bars. The rise of renewable energies in the electricity mix, especially in developed countries, also imposes a requirement that conventional thermal power plants are able to stop and



restart frequently and rapidly, with tubes able to withstand significant temperature changes. To obtain the highest yields with the lowest possible fuel consumption while limiting the environmental impact, electricity producers worldwide demand increasingly premium products capable of responding to stringent chemical and mechanical characteristics. ■



↑ Vallourec offers a wide size range of tubes to energy customers.

## Responding to our customers' technological challenges with cutting-edge innovation

To help its customers meet these challenges, Vallourec works constantly to develop new steels and alloys in its research and development center in Düsseldorf, Germany (see box on Innovation on page 49). The center's teams are developing new grades of steel that can withstand high temperatures for very long periods, such as the VM12-SHC (Super High Corrosion Resistance) ferritic steel grade used to improve yields in latest generation thermal power plants. This 12% chromium-alloyed steel grade patented by Vallourec achieves performance unmatched in its class in terms of resistance to creep and steam oxidation. At the end of 2013, the steel grade was certified by the American Society of Mechanical Engineers (ASME), an internationally recognized certification body, opening new business opportunities in the U.S., the Middle East and Asia. ■

## New facilities closer to growth markets

Chinese nuclear operating capacity is projected to increase from 15 GW in 2013 to 58 GW in 2020<sup>(1)</sup>. Vallourec is reinforcing its position to support this growing market, in which it currently supplies steam generator tubes for 80% of China's nuclear power plants already operating or soon coming on line. In June 2013, Vallourec subsidiary Valinox Nucléaire, specializing in tubes for nuclear power plants, inaugurated its new plant in Nansha, a district of Guangzhou, in southeastern China. From its cold rolling to its finishing lines, the Nansha plant uses the same manufacturing process as Valinox Nucléaire's Montbard plant in France.

The new 55 million euros site will eventually employ 200 people and increases by 2,000 kilometers the company's annual production capacity of long seamless U-bent tubes in nickel alloys for steam generators. In five years, Vallourec will have quadrupled total annual production capacity for these tubes to 7,000 kilometers. The new factory produced its first tube in October 2013 and is now focused on being qualified by customers and certification bodies. Environmental performance was a major issue during the new plant's design phase and it is equipped with an ultra-sophisticated industrial wastewater management system (see box on Eco-design on page 47). The Valinox Nucléaire plant is Vallourec's eighth site in China, providing the company with full coverage of the country's markets and needs.

Among other Vallourec plants in China, the Changzhou site produces premium large diameter seamless steel tubes for supercritical and ultra-supercritical power plants. Commissioned in 2006, the plant was expanded in 2012 with the installation of a new forge. The ramp-up of this new industrial and commercial capacity proceeded successfully in 2013. Through this plant, Vallourec is able to produce and finish tubes locally for the large conventional power plant market. According to the International Energy Agency, Chinese coal-fired electricity production is expected to surpass 5,500 TWh in 2035<sup>(2)</sup>, equivalent to the combined current electricity production in the U.S. and Japan from all sources, including conventional, nuclear and renewables. ■

(1) Nuclear Power in China, World Nuclear Association, November 27, 2013.

(2) IEA, World Energy Outlook 2013.

# 7,000 km/year

Vallourec production capacity of steam generators tubes.



## A wide range of services for power utilities

In an increasingly competitive electrical energy market, Vallourec differentiates itself from its competitors by constantly delivering more value to its customers. Since 2012, the company has added numerous services to its supply of premium tubes, with its teams now able to provide coordination of tube production, packaging, storage and associated logistics. These offers, managed as a dedicated project, met with resounding success with customers in 2013.

Vallourec teams introduced the market's first services not linked to product supply, aimed at both major global boiler manufacturers and national power utilities. In 2012, Vallourec won an EDF (Électricité de France) tender for its La Maxe power plant near Metz, France, to identify water wall panel tubes on the boiler susceptible to wear as part



↑ Vallourec's Changzhou (China) plant produces large diameter forged tubes for supercritical and ultra-supercritical power plants.

## ECO-DESIGN Effective wastewater management to protect the environment

Reducing the impact of its activities on the environment and waste management is a major Vallourec commitment. This is particularly the case for industrial wastewater treatment. As part of an eco-design approach for its new Chinese factory specializing in tubes for nuclear power plants, Vallourec invested €2.1 million to install an ultra-sophisticated water treatment system in partnership with a leading company in its market. The system consists of an evaporator, a filtration system and resin batteries to obtain high-quality water that meets customer requirements and complies with increasingly stringent Chinese environmental standards. The equipment separates a lubricant used during cold rolling and a degreaser used for cleaning tubes, which are then recovered



through a dedicated circuit. The equipment makes the Valinox Nucléaire plant a virtually closed circuit, greatly reducing its water intake. This system also reduces consumption of the degreaser, which is recovered for

reuse following separation. Finally, the concentration of the lubricant (up to 98%) limits waste volumes and, thus, the impact on the environment and the costs of destruction.

of a preventive maintenance process. In 2013, this “Boiler Field Service” was deployed at two EDF-operated power plants in France, again at La Maxe and also at Porcheville. A select team of experts from several Vallourec sites conducted non-destructive ultrasonic testing of the tubes during a scheduled plant shutdown. The diagnostic method, qualified by EDF, was applied to more than 11 kilometers of tubes, enabling the most damaged areas to be mapped, which was then used by EDF to analyze and respond to risks.

Services provided by Vallourec also include customized training, covering Group products and services as well as standards. In 2013, several “Tubular Essentials” training sessions were held for 100 people from Vallourec customers in France, the UK and Germany. ■

## 6

Contracts won out of a total of eight for the renovation of France's nuclear infrastructure.



### A sixth contract for renovation of France's nuclear infrastructure

In July 2013, Valinox Nucléaire was awarded a new contract for the manufacture of tubes for four steam generators of an EDF reactor. This brings to six the number of contracts won, out of a total of eight for the renovation of France's nuclear infrastructure. In mid-December, the subsidiary specialist in nuclear power plant tubes exceeded the 40,000 kilometers threshold of tubes delivered since its creation in 1974, the equivalent of the circumference of the Earth.



↑ Welded tubes for heat exchangers are used in power generation, desalination and process applications.



## Qatar: titanium tubes for a desalination plant



Vallourec's subsidiary specializing in the manufacture of tubes for heat exchangers has provided 700 metric tons of welded titanium tubes – or 2,500 kilometers of tubing – for a seawater desalination facility in Ras Abu Fontas, Qatar. Vallourec designed the

technically challenging welded titanium tubes with a particularly high and critical diameter-thickness ratio to enable its client to improve heat exchange and, thus, the installation's efficiency.

## Saudi Arabia: 14,000 metric tons of tubes for two supercritical thermal power plants



In 2013, Vallourec won two successive orders to deliver 14,000 metric tons of tubes for two supercritical steam plants located at Shuqaiq and Jeddah, Saudi Arabia. Vallourec's responsiveness, abil-

ity to deliver tubes in optimum time and customer-focused "project mode" organization were instrumental in winning these contracts.

## INNOVATION A new research center in Germany

In October 2013, Vallourec opened a new research center in Düsseldorf, Germany, dedicated to the design and development of power plant steel tubes and oil and gas pipelines. The new 4,000-m<sup>2</sup> center is equipped with the most modern facilities and houses several laboratories, including a laboratory to test creep resistance, with more than 100 machines for testing steel strength at high temperatures. Each year, research databases are enriched by more than 100 years of additional testing, recognizing that a creep test can last more than 10 years! A laboratory dedicated to high temperature steam corrosion is used to characterize and adapt alloys to the most

extreme conditions. A welding lab allows analysis of product behavior under conditions following customer implementation in boilers and oil and gas pipelines. The facility also includes a materials simulation laboratory as well as workshops and laboratories for metallography and electronic microscopy, mechanical testing, heat treatment and chemical analysis. The research center will soon number 40 engineers and researchers working on the same goal of pushing the boundaries for ever safer and more efficient steel applications.





# “Emerging markets will continue to drive global growth, as has been the case for several years.”

Dr. Ralph Wiechers,  
Chief economist of the German Federation of Mechanical Engineering (VDMA)

**In 2013, global demand for capital goods grew more slowly than expected.** Global sales in the mechanical engineering sector grew only 1% according to estimates. Growth was above average in China and the U.S., where the investment environment was more dynamic. In Europe, however, the crisis in the euro zone slowed investments for the fifth consecutive year: sales declined 2% for European companies in the mechanical engineering sector. It was a particularly disappointing year for the mining equipment industry. While the supply of raw materials increased with the expansion and renewal of operations, prices for major raw materials, including coal, declined due to economic conditions. As a result, mines around the world have been forced to review their financial and investment plans with a number of projects postponed or canceled. The construction machinery and engines business did not achieve the desired results in 2013. Asia did not play its role as an engine for growth and demand fell. Once again, economic vitality was limited to emerging countries.

**A recovery is expected in 2014 for the mechanical engineering sector, with sales growth worldwide possibly reaching 5%.** China and Japan are expected to post above-average growth. Other countries where the mechanical engineering industry plays an important role also should return to growth, according to forecasts. In Germany, for example, production is expected

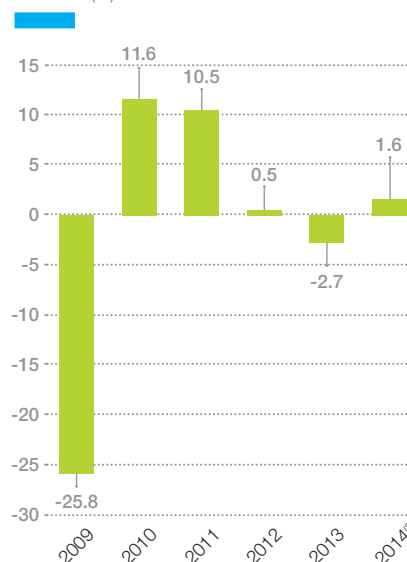
to increase 3% to support a resumption of moderate but noticeable demand during the year. These perspectives can be explained by a necessary compensation for the relatively low level of investment of the past few years, which should benefit the sector in 2014 and beyond. The financial situation of companies has also been more positive and borrowing rates remain low. However, a number of obstacles remain: the adaptation and restructuring initiatives in Europe, Asia and even in North America limit global economic growth. Disruptive events, such as the crisis in Crimea, are a source of concern for investors and constitute a threat to investment

and, therefore, the mechanical engineering sector.

**Emerging markets will continue to drive global growth, as has been the case for several years.**

In these countries, the middle class will continue to grow in the years to come. Private consumption will be sustained, with strong demand for durable consumer goods and high added value products. In addition, the rising cost of labor in emerging markets is boosting productivity and, therefore, the increased use of machinery and equipment, a development that will benefit companies in the mechanical engineering sector. ■

**ANNUAL CHANGE, MECHANICAL SECTOR GROSS PRODUCTION IN THE EUROPEAN UNION<sup>(1)</sup> (%)**



Source: IHS Global Insight, January 2014.  
(1) EU - 15, excluding Luxembourg.  
(2) Estimate.

## MARKET CHALLENGES

- Reasonable use of resources.
- Reducing carbon dioxide emissions.
- Implementation of the industry 4.0 concept (more flexible and efficient smart factories).
- Demand for services associated with products.

# INDUSTRY: LIGHT AND RESISTANT TUBES FOR TECHNICAL APPLICATIONS

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← Equipped with Vallourec tubes, Maracanã stadium in Rio de Janeiro (Brazil) will host the final of the 2014 soccer World Cup.

**Mechanical engineering, automotive, construction and energy: Vallourec has a range of hollow bars, hollow sections and tubes for a wide range of industrial applications.**

In the field of mechanical engineering, tubes and rings produced by the Group are used to construct diverse equipment such as cranes, hydraulic cylinders and agricultural machinery. In the automotive sector, Vallourec supplies tubes and axles for light and heavy vehicles. In construction, numerous bridges, airports, stadiums, buildings and other innovative architectural projects rely on the exceptional strength and lightness of Vallourec's tubular solutions. Examples are found in some of the Brazilian stadiums

that will host the 2014 soccer World Cup and the 124-meter antenna that, since April 2013, has risen from the top of One World Trade Center in New York. Vallourec also puts its expertise at the service of the Oil and gas industry, with structural tubes for the construction of offshore platforms and specific mechanical parts for oil and gas exploitation.

In all of these industrial applications, Vallourec has developed products featuring a wide range of dimensions and steel grades. Six special steel grades have recently been renamed to make explicit reference to their mechanical characteristics. Among them, the highly resistant



Forterior® is well-suited for construction of agricultural machinery components. The FineXcell® range includes fine grained steel tubes with exceptional elasticity. Their extreme resistance, excellent resilience and weldability are well adapted for use in construction cranes and hydraulic cylinders. These tubes also enable the reduction of weight in certain transportation applications, addressing an issue crucial to reducing fuel consumption. ■

## Innovative tubular solutions for the energy market

World leader in premium tubular solutions for energy markets, Vallourec develops a wide range of products for this strategic market, including solutions for infrastructure construction. Innovations developed by Group R&D teams include PREON® marine, a patented tubular solution for easier, quieter and more environmentally friendly installation of offshore wind turbine foundations. The lighter and leaner anchoring system can be installed at depths of 20 meters, compared to 60 meters for pile-anchored structures. The area required for PREON® marine's installation is also significantly smaller than that required for concrete structures, which are as large as football fields. Finally, the noise generated by the

installation of PREON® marine is significantly reduced, minimizing the disturbance to marine life. According to projections by the European Wind Energy Association (EWEA), between 5,000 and 7,000 offshore wind turbines will be installed in Europe by 2030.

In addition to their widespread use in equipping onshore infrastructure, Vallourec structural tubes are also used in the construction of offshore oil platforms. Launched in 2013, the Oceanfit® steel grade, resistant to weight and corrosion, has been specially developed by Vallourec teams for this application. Its excellent mechanical properties, high resilience and weldability, even at temperatures well below freezing, enable constructors of offshore platforms, among others, to save time on welding and thus reduce costs. During the year, the Group won several orders for platforms in Southeast Asia. The market for the construction of offshore platforms is growing rapidly, driven by the continued increase in global energy demand.

Mechanical parts for the manufacture of accessories for the Oil and gas industry is another segment with growing demand, as a result in particular of shale hydrocarbon development in the U.S. Vallourec R&D teams expanded their product portfolio, adapting existing steel grades to meet growing customer needs in the areas of safety and extreme operating environments. The Avadur® grade is characterized by its exceptional hardenability: its hardness, elasticity and tensile strength can be adjusted through targeted heat treatment. ■

## Cutting-edge manufacturing processes

In combining for the first time a forge with hot piercing technology, the pipe mill in Aulnoye (France) has implemented a manufacturing process unique in the world, which allows the working of steels more highly alloyed and more resistant to corrosion. This method responds to the growing OCTG accessories market for which thicker and higher strength tubes are required. It also allows the manufacture of structural tubes used to construct the legs of self-elevating offshore platforms, which are increasingly long and massive and subject to increasingly severe conditions. The forge is also an economic and ecological production process: its continual range of diameter and thickness dimensions enables customized solutions to be offered, thus limiting use of machining and raw materials.

In 2013, the Group's first induction heat treatment line was introduced at the Montbard (France) plant. This new furnace, combined with the specific hot rolling mill, features more flexibility and responsiveness to customer needs, offering customized products and shorter lead times. This new capability is particularly well-adapted for premium applications







↑ The forge: a flexible, economical and ecological production process.

in the fields of mechanical specialties and oil and gas accessories. On its La Charité-sur-Loire (France) site, Vallourec qualified new cold rolling equipment in 2013 for rings 200 to 500 millimeters in diameter. This unique process for diameters of this size opens new opportunities

in the field of bearings for heavy industry, windmills and rail. It has many advantages over the methods used by its competitors. Faster and more economical, it is also more efficient in terms of material balance, requiring 20-50% less raw material and reducing the energy consumption and waste generation linked to machining.

At the end of 2013, a new forge was commissioned in Brazil and began producing forgings for the automotive industry, especially for heavy vehicles (trucks, buses and semi-trailers). Capable of producing 1,000 pieces per day, the new forge will enable the Group to increase its productivity and strengthen its new product offerings in an increasingly competitive market. ■

#### HUMANITARIAN ACTION

## A donation of tubes to build bridges in Africa

In many developing regions, bridges play a vital role in ensuring access to food, medical care, education and work. At the end of 2013, Vallourec donated hollow sections (MSH) to the humanitarian organization "Engineers Without Borders" for the construction of bridges in rural Africa. With this material donation of tube structures, which are easy to handle and can be used for large spans, Vallourec is providing direct technical assistance. The Group also transported goods from the production site to the destination port.





# OUR COMMIT- MENT TO CORPORATE SOCIAL RESPONSI- BILITY



Vallourec contributes to the challenge of managing and exploiting the planet's energy resources, while reducing the environmental footprint of its industrial activities.

The company is also committed to treating all partners fairly and creating a work environment consistent with the values and principles of its Code of Ethics.

Knowing that its success depends on the skills and commitment of its employees, Vallourec has developed an ambitious human resources policy for developing talent and recognizing expertise while supporting the motivation and commitment of each individual.

### **SOCIAL RESPONSIBILITY**

Vallourec develops enduring trust-based relationships with its host communities worldwide. The company also applies a rigorous procurement policy that supports local economies while ensuring reliance on dependable and responsible suppliers.

### **CIVIC RESPONSIBILITY**

### **ENVIRONMENTAL RESPONSIBILITY**

Vallourec has set an objective of significantly reducing the impact of its activities on the environment, improving the conservation of natural resources and minimizing pollution of all kinds. This year, the company adopted new approaches to measure its environmental footprint.



“Vallourec is seen by a large majority of its employees as respectful of the environment and its stakeholders.”

**JEAN-LOUIS MERVEILLE**

Vice President, Sustainable Development

Vallourec's sustainable development policy finds tangible expression through its Charter. It identifies our goals in this area, defines our focus areas for improvement and underlines the importance of communication with our stakeholders. Maintaining enduring relationships based on trust with stakeholders helps us to better manage certain risks. We thus increase our intangible assets, creating value for the company and strengthening our competitive advantage and long-term profitability.

This can be seen with our customers, most of whom have an active commitment to sustainable development. They are increasingly attentive to value chain responsibility. This reinforces our actions to verify the level of commitment to corporate social responsibility by our suppliers. Audits that we have conducted to date show satisfactory results.

We are of course also very attentive to our employees. In 2013, the Group launched the “Opinion” survey, the first internal survey of all of our employees worldwide to determine their perception and expectations of the company. We are very pleased, first, with the 80% participation rate. The survey reveals significant similarity in employee opinions, regardless of their country. This confirms the existence of a strong corporate culture. Looking in further detail, it appears that three out of four employees have high motivation and a strong sense of belonging, are satisfied with their work, agree that the Group has a good reputation and express loyalty toward the company.



Like all companies positioned as “premium,” we are engaged in a process of social and environmental responsibility that leads us to anticipate the needs of our customers. In this context, we conducted for the first time an analysis of the life cycle of tubes in the petroleum industry. It appears that the impact of our products under several factual criteria related to the environment and health is very moderate.

As part of our focus on better understanding and minimizing our global footprint, we conducted a detailed analysis of all resources Vallourec needs for its production. This approach refines the knowledge of our environmental footprint and reinforces our actions to reduce our energy and water consumption, waste production and carbon emissions.

We are continuing our GreenHouse program to improve the energy efficiency of our

processes and reduce our CO<sub>2</sub> emissions. In 2013, three of our sites, in France, the UK and Brazil, were certified ISO 50001. For these sites, the issues of energy consumption is everyone's business, involving both operational and functional teams. With its significant role in the energy sector, Vallourec must be exemplary in this regard.

In support of these advances, it should be noted that the ratings by non-financial rating agencies also increased. ■

**50%**  
Steel produced by Vallourec from recycled scrap.



Vallourec became a signatory to the Global Compact in 2010.



# OUR APPROACH TO SUSTAINABLE DEVELOPMENT

Through its Sustainable Development Charter, Vallourec is committed to conducting its business in a responsible manner, consistent with three principles of action: ensuring the sustainability of its business with competitive and innovative products, maintaining sustainable relations with stakeholders and protecting the environment and using resources wisely. This strategy has attracted the support and recognition of employees who widely con-

sider their company to be responsible toward the environment and stakeholders<sup>(1)</sup>. Echoing this assessment made by its own employees was the award received by Vallourec in 2013 from the economic and financial media company Agefi, in the Corporate Social Responsibility category at the Corporate Governance Awards. The award recognizes the company's implementation of Corporate Social Responsibility (CSR) principles and requirements in its governance, in-

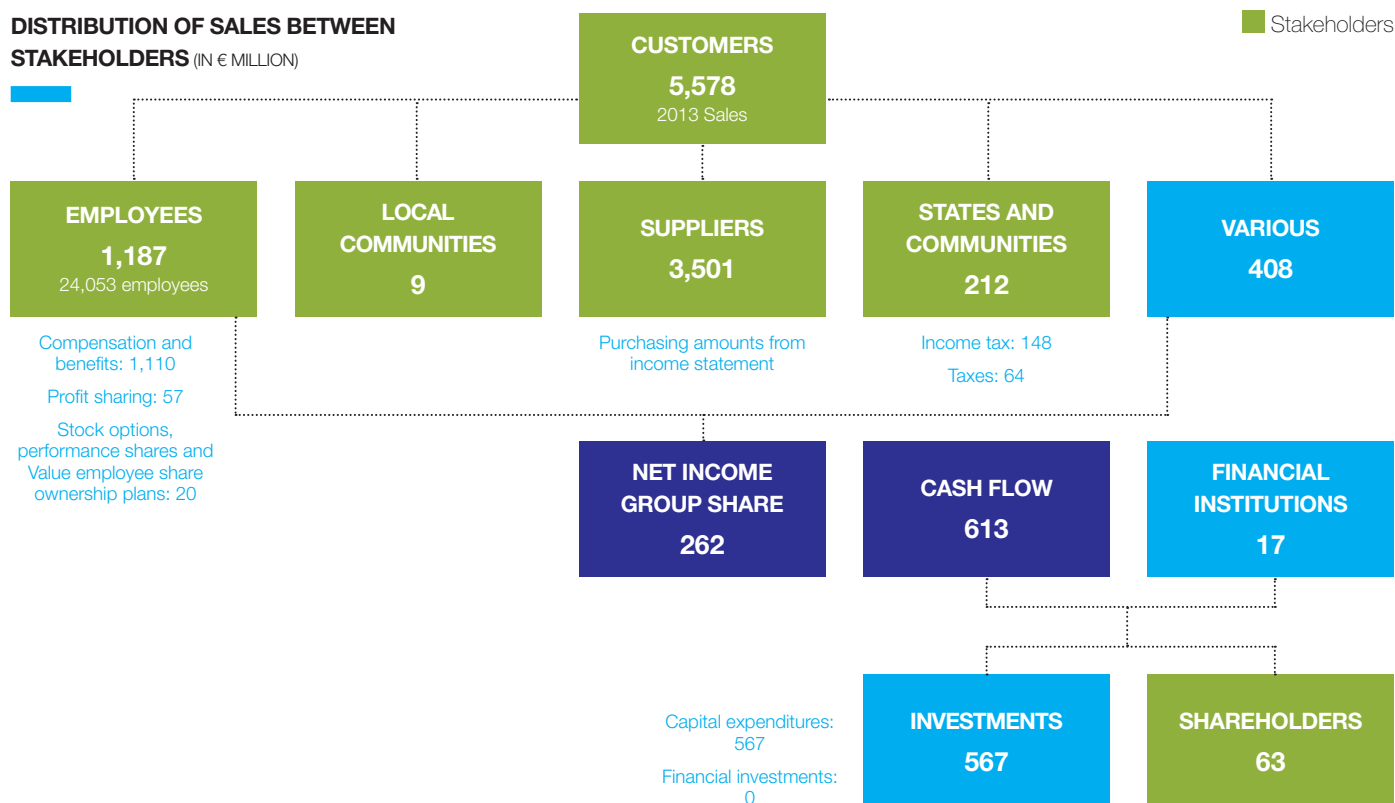
cluding employee shareholding and human resources management, its environmental performance in the running of its business activities and its attentiveness to stakeholder expectations, including customers and suppliers. ■

(1) According to the internal survey conducted in 2013 with 21,000 Vallourec employees.



To learn more, consult Vallourec's Sustainable Development Charter on [www.vallourec.com](http://www.vallourec.com)

## DISTRIBUTION OF SALES BETWEEN STAKEHOLDERS (IN € MILLION)



# EMPLOYEE RELATIONS BASED ON TRUST



← Vallourec is continuing a program to increase the presence of women in operations.

Employees are Vallourec's greatest asset. At the end of 2013, the company employed 24,053 people under permanent and temporary contracts, working at 50 production and services sites worldwide, compared with 23,177 employees at the end of 2012. The 3.6% increase is primarily a reflection of the company's growth in the U.S. and China and its reinforced local presence in the Middle East.

## **A COMMITMENT TO GENDER EQUALITY**

As of December 31, 2013, the number of women with permanent contracts totaled 2,562, an increase of 5% compared to the end of 2012 and representing 11% of the total permanent workforce. Most women are in commercial, administrative and professional function positions with few employed as plant workers. The company

continued its program to reinforce female representation in operational businesses and to encourage their accession to senior management positions, with indicators put in place to monitor the actions. Regularly conducted compensation surveys show no difference in treatment between men and women.

## **A PRIORITY ON SOCIAL DIALOGUE AROUND THE WORLD**

Vallourec has placed a priority on social dialogue throughout its operations. More than 19,000 employees in 20 countries, representing approximately 82% of the workforce, are covered by collective company or subsidiary agreements. In each country, social dialogue between employers and employees is organized in accordance with local regulations. At the European level, a committee

composed of 30 French, German and British representatives meets annually with the senior management following publication of Vallourec's results and is kept informed of the company's activities, results and strategy in Europe and the world. In France, Germany, Brazil and the U.S., social relations are governed by specific agreements providing for the regular informing of and consultation with employee representatives. In 2013, the company conducted an internal survey at all sites, which showed a high level of satisfaction among employees (see page 31).

## **TOOLS FOR MANAGING TALENT**

Vallourec supports its employees throughout their careers in identifying and developing their talent. Its "Talent 360" HR information system continued to be expanded internationally in 2013 and has been extended to





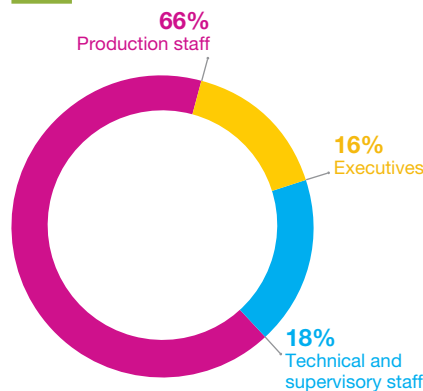
← Through apprenticeships, Vallourec is training younger generations in its professions.

non-managerial employees. Wherever the system has been put in place, the interview completion rate is over 95%. This system is well-aligned with Vallourec University, a place of excellence where employees from around the world come together to enrich their knowledge and exchange on company priority issues. In 2013, 256 employees participated in international programs and 4,844 employees in regional programs. Vallourec University also introduced an e-learning course in which 1,193 employees participated. In addition, the company's Learning Management System (LMS) offers employees simplified and direct access to training and enables rigorous monitoring of training time and budgets.

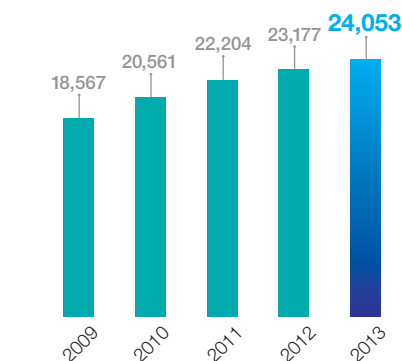
#### TRANSMITTING KNOWLEDGE TO YOUNGER GENERATIONS

To optimize the transfer and improvement of skills and accommodate a larger number of employees with training tailored to business needs, the company maintains a dynamic learning program. In Europe, with its unbalanced pyramid, 299 apprentices were working in Germany at the end of 2013 and 213 in France, an increase of + 33% compared to 2012. Brazil had 144 apprentices and the United Kingdom 31 as of the end of 2013. ■

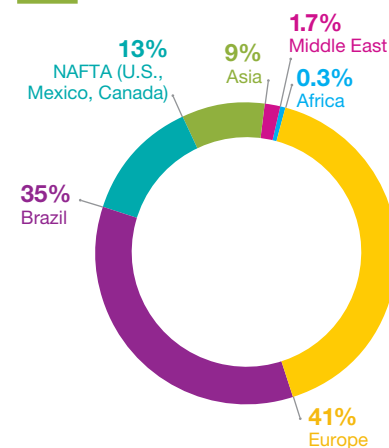
#### WORKFORCE DISTRIBUTION BY PROFESSIONAL CATEGORY



#### GROUP EMPLOYEES (PERMANENT AND TEMPORARY CONTRACTS)



#### WORKFORCE DISTRIBUTION BY GEOGRAPHICAL AREA



95%

Portion of executives who received a performance review.

582,000

Training hours.

# SAFETY AND HEALTH, OUR HIGHEST PRIORITY

Safety is integral to Vallourec's culture and remains its number one priority. In 2013, the Group continued to make significant progress through its ambitious "CAPTEN + Safe" safety improvement program. The total number of accidents (with or without lost time) per million hours worked (TRIR) for employees and temporary staff improved to 5.51 in 2013 (see chart opposite below).

The "CAPTEN + Safe" program includes deployment of steering committees at all Group sites, workplace safety inspections, continuous improvement teams focused on safety, risk assessments and preventive actions. Awareness campaigns are also conducted, such as a global "Safety Day" for the fourth consecutive year, involving all Group employees. At the end of 2013, almost all Group sites had been OHSAS 18001 certified, attesting to the quality of the health and safety approach.

## FOCUSED ATTENTION ON SERIOUS ACCIDENTS

Unfortunately, 2013 was marked by three fatal accidents, underlining that the work of improving safety is never finished. Rejecting the idea that an employee can be injured or killed due to lack of attention, Vallourec developed a specific action plan to prevent serious accidents. In particular, it deployed two company-wide initiatives through Continuous Improvement Teams (CITs). Under the first CIT, a full audit of the immediate environment around machines was conducted in 2013 to identify risk areas for operators. Vallourec also decided to invest in the installation of physical protection on machines such as gates or doors to provide additional protection to the operator. The second CIT strengthened safe-



↑ Regular safety visits are part of all operations.

ty procedures for machine maintenance. For example, additional controls were put in place to inform employees that machinery and electrical systems have been completely turned off, thus avoiding any risk during maintenance or when the machine is restarted.

# 367

Number of Continuous Improvement Teams focused on safety.



↑ In 2013, Vallourec continued its campaign of emotional communication launched last year to educate its employees about the importance of safety rules. The slogan is simple and universal: "A parent cannot be replaced: be vigilant and follow the rules of safety." Translated into seven languages, it is displayed in all Group plants worldwide.



## HEALTH PREVENTIVE ACTIONS AT EVERY LEVEL

Employee health is a key concern for Vallourec, which targets the main risks associated with its activities: deafness, musculoskeletal disorders and lung diseases. The Group conducts prevention activities on its sites, with 12,000 hours of health-related training provided to 2,560 employees in 2013. Reducing the strain at work by integrating ergonomics in the design and layout of workstations is another focus area. In addition, Vallourec works to prevent psycho-social risks with the help of Group occupational physicians and, where appropriate, specialists.

Chemical risk prevention is also a priority for Vallourec. The database of products and chemicals is updated regularly to ensure rigorous monitoring and prevent adverse effects. Any product or substance entering Group production facilities is monitored and checked by HSE managers. In collaboration with R&D teams and suppliers, they also develop programs to test and qualify alternatives to substances deemed critical. As of the end of 2013, over 57% (compared with 40% in 2012) of 357 substances identified as CMR (carcinogenic, mutagenic and toxic for reproduction) had been replaced.

Finally, four programs are being implemented across the company: replacement of refractory ceramic fibers, substitution of lead-based greases on connections with non-toxic greases; research on an alternative to chrome for rolling mandrels and replacing nickel salts for phosphate treatment of threads. ■

# 34,000

Number of workplace safety inspections  
Group-wide.

## St. Saulve steel mill: working together to prevent severe accidents

### CÉDRIC SCHELCHER,

Safety coordinator  
St. Saulve steel mill

"In recent years, our steel mill has been profoundly marked by two fatal accidents. These tragedies have sparked heightened awareness at all levels of the plant. In this context, we mobilized everyone

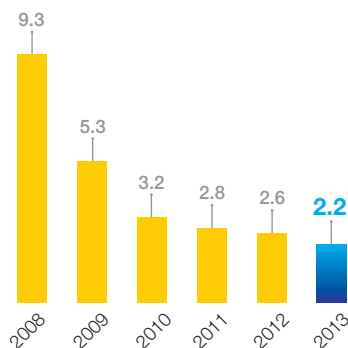
around a very clear plan of action called "Never again." The objectives are to unite teams in combating serious accidents. We first set up a Continuous Improvement Team to adapt the Group's golden rules to our facility. Manager schedules have been revised to enable management to devote more time to interacting with colleagues on safety issues. Finally, we conducted works to make machines safer, including

installation of physical barriers.

The implementation of this action plan has enabled us to halve the number of accidents between 2012 and 2013. I think we owe our progress particularly to the fact that everyone has truly embraced and personalized these golden rules at our steel mill and everyone, without exception, is fully mobilized."

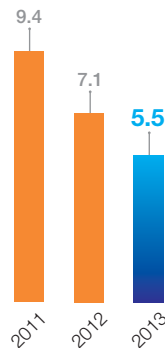


LTIR <sup>(1)</sup>



Objective 2013: 2.35  
(1) LTIR (Lost Time Injury Rate) number of accidents with lost time per million hours worked, including temporary and permanent employees.

TRIR <sup>(2)</sup>



Objective 2013: 6.5  
(2) TRIR (Total Recordable Injury Rate): total number of accidents per million hours worked.

# A RESPONSIBLE APPROACH TO LOCAL COMMUNITIES



← In Indonesia, Vallourec's commitment to education in action.

Vallourec works to develop enduring trust-based relationships with its host communities worldwide. The Sustainable Development Committee has established guidelines for initiatives with local stakeholders while providing sites with autonomy to decide specific actions. Vallourec supports local economic and cultural initiatives in the areas of education, health and local development. In addition, priority is given to actions supported by employees. In 2013, 8.7 million euros were devoted to these types of actions, an increase over the 7.9 million euros invested in 2012.

## **DECENTRALIZED ACTIONS TO BETTER RESPOND TO LOCAL DEVELOPMENT NEEDS**

Actions to benefit local stakeholders are conducted mainly in countries with the highest expectations on the part of local populations

and where social systems are less developed than in Western countries. At Belo Horizonte, in Brazil's Minas Gerais region, Vallourec has worked closely with local authorities for several years in offering educational programs, job search assistance and events to promote social cohesion to benefit neighboring populations of the Barreiro site, particularly among poor populations, farmers and artisans living near Vallourec Florestal's farms or the mine operated by Vallourec Mineração. In 2013, Vallourec completed a unique project to rehabilitate a historic theater in the downtown, converting it into an artistic and cultural center (see box opposite).

In Indonesia, subsidiary PT Citra Tubindo TBK continued its health and education actions in 2013, including providing scholarships and expanding schools, nutritional support and cultural and sports investments, such as creating a stadium that meets international

standards. It also acts to protect the environment, such as through the regeneration of mangroves and creation of a tree nursery.

In Europe and the U.S., initiatives involve more limited investment due to the high level of development and quality of the social infrastructure. Most often, initiatives involve support for educational, cultural and sports projects, financing social and charitable work or participating in local economic development. In France, for example, Vallourec is a partner of the Valenciennes theater, the Phoenix, which is built on one of the company's former sites and has become an attraction for the city's downtown. It also supports Alizé (intercompany local actions in employment zones), a public-private partnership that provides support to SMEs and micro-enterprises. Vallourec managers and technicians volunteer their skills to the SMEs, helping them organize and carry out develop-





↑ Vallourec promotes sports and musical activities in Brazil.

ment projects. This support for economic activity is extended in the Grand Hainaut (North) and Montbard (Côte-d'Or) municipal areas.

Sites newly established by Vallourec around the world to be closer to its customers also work to create local jobs, integrate local value into their operations and create local partnerships through licensing. ■

€8.7 million  
devoted to local community activities.

## A new cultural center for all

**ALBERTO CAMISSASSA,**  
CEO, Fundação Sidertube  
and President of the Cine  
Theatro Brasil Vallourec  
Association

“Cine Theatro is an essential venue for Belo Horizonte! The building, designed in an art deco style in 1920 by architect Alberto Murgel, is famous for its iconic facade. Opened in 1932, the theater ceased operations in 1999

and was forced to close when the building began to deteriorate. Our company foundation, Fundação Sidertube, acquired it in 2006 and began work to make it a cultural center offering city residents direct access to culture and the arts. We undertook the restoration and renovated the building structure using the Group's tubular solutions. The new complex, which extends over 8,300 m<sup>2</sup> and seven floors, comprises two theaters with a total of 1,200 seats, two floors

dedicated to art exhibitions, meeting rooms with capacity for 650 people, a restaurant, a cafe and a bookstore. In total, Vallourec invested 17 million euros in the site's rehabilitation. The reopening of the Cine Theatro Brasil, with an exhibition by the famous Brazilian artist Portinari, entitled “War and Peace”, was a huge success: between early October and late November 2013, nearly 90,000 visitors visited the exhibition!”



# A RIGOROUS AND RESPONSIBLE PURCHASING POLICY

Vallourec purchases totaled 3,792 million euros in 2013. Local purchases, which contribute directly to local economies, accounted for approximately 45% of this amount. Located close to Vallourec sites, the companies involved were primarily suppliers of scrap metal, subcontractors for maintenance and routine services and suppliers of consumable products.

Vallourec's Purchasing function was completely reorganized in 2013 to enable the company to speak to all suppliers with one voice. The introduction of stronger and more centralized governance, the creation of a supplier performance and quality department and deployment of common tools and processes throughout the Group are already delivering results. The supply chain has been reinforced based on purchase-specific expertise, a formal contract award process and supplier performance evaluations and risk assessments. These new processes systematically integrate sustainability issues, including social and environmental responsibility, safety and ethics criteria. Teams are guided by the Group Ethics Charter, which presents the fundamental values that underlie company business practices. In October 2013, Vallourec's 60 largest suppliers met for the first Suppliers' Day at which the company reiterated its expectations regarding responsible performance, particularly as regards observance of business integrity and eco-design principles.



↑ Scrap metal purchased by Vallourec for use in steel-making is subject to strict quality control.

## SYSTEMATIZED AUDITS AND SUPPLIER RISK ANALYSES

Vallourec conducted more than 700 audits and supplier risk analyses at its sites in 2013. Using a specialized firm, it also assessed the social and environmental responsibility commitment of 315 of its largest suppliers. The findings showed that 70% publish a formal report on their energy consumption and greenhouse gas emissions, 81% publish a report on HSE indicators and 59% are ISO 14001 certified.

In compliance with new American regulations, Vallourec committed to determining whether any raw materials, known as "Conflict minerals," were being sourced from the Republic of Congo. The investigation in 2013, with a

special focus on those delivering to the Group's U.S. plants, found no cases of non-compliance. The investigation will be extended in the first half of 2014 to cover suppliers of relevant materials worldwide. ■

## 315

Supplier assessments according to Corporate Social Responsibility criteria conducted in 2013.



# PRESERVING RESOURCES, REDUCING DISTURBANCES

Consistent with its commitments in its Sustainable Development Charter, Vallourec works to reduce the impact of its activities on the environment. For years, sustainable development has been an integral factor in the company's investments. In 2013, 8.4 million euros was invested to promote the rational use of natural resources and counteract the effects of climate change. During the year, Vallourec established a five-year environmental roadmap for its three large industrial divisions. Intended as an extension of their strategic plans, the roadmap sets priorities and objectives and defines necessary resources, including investments. The Environment Department, part of the Sustainable Development Department, coordi-

nates environmental actions through a network of 110 environmental managers located at production sites and responsible for deploying and communicating Vallourec's policy.

## NEW APPROACHES TO MEASURING ENVIRONMENTAL IMPACT

In 2013, Vallourec formalized its analysis of the resources required to produce its tubes. The results showed that 13.8 million tons of inputs – 64% water – were used to produce 2.16 million tons of tubes. But as 85% of these resources are renewable, the analysis demonstrates that Vallourec's environmental impact is limited.

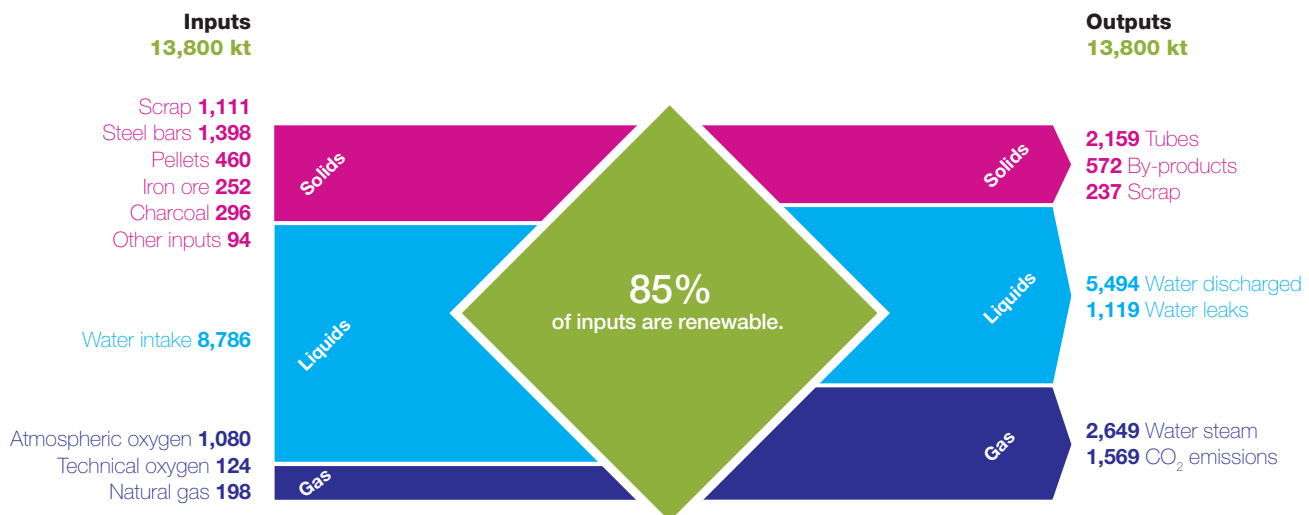
During the year, Vallourec also performed its first life cycle analysis of two representative oil

and gas products: it evaluated nine major environmental impacts generated by these products throughout their life cycle (CO<sub>2</sub> emissions, energy and water consumption, resource depletion, toxicity, etc.). The analysis, which will be published in 2014, revealed a moderate impact, with 90% coming from the production phase and 10% from customer operations. ■

## 96%

The percentage of Vallourec production from ISO 14001-certified sites (decrease due to the integration of VSB in the perimeter).

## VALLOUREC MATERIAL FOOTPRINT\* (kt)



\* Not including plantation and mine.

Water represents 60% of raw materials used

## ENERGY CONSUMPTION STEADILY DECREASING

As part of its GreenHouse project, Vallourec has set an objective to reduce gas and electricity consumption 20% by 2020. Between 2008, the program's base year, and 2013, the company has improved its energy performance 14%. This improvement takes into account the company's level of activity, its scope and the increasing share of premium products (60% of products were heat treated in 2013 compared with 44% in 2008). In 2013, the Group's energy consumption per ton treated (including Vallourec & Sumitomo Tubos do Brasil and the new U.S. pipe mill in Youngstown) amounted to 981 kWh/t, equivalent to 794 kWh/t compared with 2008 conditions, for a reference value of 923 kWh/t in 2008.

The company's strong commitment to reducing energy consumption was also demonstrated through the ISO 50001 certification of three of its sites in 2013. Most Vallourec production units are involved in this process. A system of real-time measurement of energy consumption (Advanced Metering Management) has also been implemented at a number of sites in France, Germany, Scotland, Brazil and the



← In Brazil, Vallourec uses biomass as an energy source for its blast furnaces.

U.S. In Brazil, application of the new measurement system to the steel mill furnace has helped reduce consumption by 5%.

## MITIGATING CLIMATE CHANGE BY COMBATING GREENHOUSE GAS EMISSIONS

Controlling greenhouse gas emissions is one of the objectives of Vallourec, which continues to define the components of its carbon footprint. Vallourec's emissions levels of 207 kg/CO<sub>2</sub> per metric ton treated and 202 g/CO<sub>2</sub> per euro of revenues are low compared with other manufacturers of comparable size.

Its three electric steel mills in Saint-Saulve (France), Youngstown (United States) and Jeceaba (Brazil), are low emitters of CO<sub>2</sub>. In Brazil, the Group uses biomass as an energy source for its blast furnaces. Its 237,000 hectares of eucalyptus plantations are used to produce charcoal. The CO<sub>2</sub> emitted by the combustion of coal in the manufacture of cast iron is then reabsorbed by the growing forest. For three years, Vallourec has been working with academic and institutional experts to study the carbon cycle of its forests in order to identify the quantities involved over the long term. Brazilian teams are also responsible for two "Clean Development Mechanism" (CDM) projects, corresponding to close to 300,000 metric tons of carbon credit, confirming their commitment to reducing emissions. The first, which addresses the

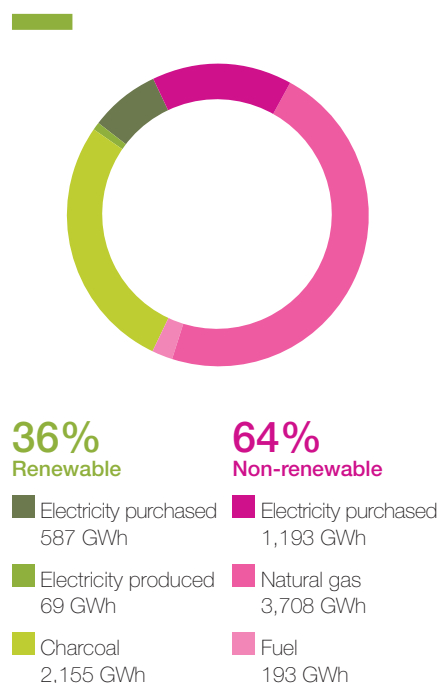
generation of electricity from blast furnace gas, was renewed by UN bodies. The second, approved in 2013, involves reduction of methane emissions in the wood carbonization process at Vallourec Florestal.

Since 2013, in addition to the mill at Saint-Saulve, French and German pipe mills and the Vallourec Drilling Products site at Aulnoye, have been involved in the European trading program for greenhouse gas emissions quotas (ETS). The allowance for these sites in 2013 exceeds emissions, which total nearly 350,000 metric tons.

Vallourec advanced in its ranking in the "Carbon Disclosure Project," an organization that publishes the impact on climate change by the largest global companies. Between 2012-2013, Vallourec's rating increased from 63 to 85 out of 100 on transparency and from D to B for performance.

Vallourec also works to anticipate the risks linked to the consequences of climate change. It launched an annual analysis in 2014 to identify new risks that the Group may have to face, which will lead to new adaptation plans, if necessary.

## VALLOUREC'S ENERGY MIX IN 2013 (GWh)





## VALLOUREC CARBON FOOTPRINT (METRIC TONS OF CO<sub>2</sub>)

TYPE OF EMISSIONS	COMPONENTS	2011	2012	2013
Direct emissions	Combustion of natural gas (furnaces)	656,332	612,360	695,743
	Methane emissions (carbonization of wood)	270,933	271,663	306,811
	Emissions due to production of steel	81,680	85,078	75,489
	Internal transport and storage	41,833	38,866	49,549
	<b>TOTAL</b>	<b>1,050,778</b>	<b>1,007,967</b>	<b>1,127,592</b>
Indirect emissions (electricity)	Electricity purchased	462,931	507,754	580,311
	<b>TOTAL</b>	<b>462,931</b>	<b>507,754</b>	<b>580,311</b>
Indirect emissions (other)	Purchases of raw materials and services	1,836,270	1,764,027	1,918,842
	External transport	625,999	601,897	659,952
	Waste treatment	239,225	242,652	224,417
	Losses related to energy transport (gas and electricity)	148,433	142,691	160,716
	Emissions related to intangible assets (equipment in our plants)	115,872	137,942	157,322
	Transport of personnel	68,688	74,026	73,764
	<b>TOTAL</b>	<b>3,034,487</b>	<b>2,963,235</b>	<b>3,195,013</b>
<b>TOTAL CARBON FOOTPRINT (COVERING THE THREE TYPES OF EMISSIONS)</b>		<b>4,548,196</b>	<b>4,478,956</b>	<b>4,902,916</b>
<b>CARBON FOOTPRINT (KG CO<sub>2</sub>/METRIC TON OF TUBES PROCESSED)</b>		<b>879</b>	<b>903</b>	<b>899</b>

### REDUCING WATER CONSUMPTION AND IMPROVING THE QUALITY OF DISCHARGED WATER

Water is an essential resource in the tube manufacturing process. In particular, it is used to cool hot machinery and tubes following heat treatment. To preserve this resource, Vallourec established the project "Act4water" in 2012, with a threefold objective: reduce water withdrawals, minimize the impact on the environment by improving the quality of water discharges and decrease production costs.

By increasing internal recirculation of process water, Vallourec has reduced its water withdrawals from 10.6 million m<sup>3</sup> in 2003 to 8.79 million m<sup>3</sup> in 2013, despite increased production. In four years, the quality of water discharged has also improved significantly. At most sites, industrial water passes through internal treatment plants before being discharged into municipal systems or the environment. In 2013, Vallourec invested in a water treatment facility next to its new pipe mill in Youngstown (United States). Fully au-



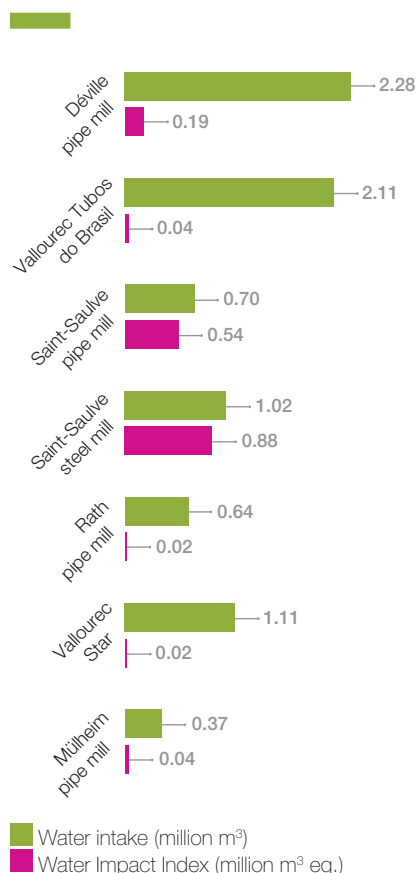
↑ Wastewater treatment unit at the Youngstown (United States) site.

tomated, it produces water of consistent quality, comparable to drinking water, with a recirculation rate of 99%. The system is capable of clarifying 10,000 m<sup>3</sup>/hour.

## “WATER IMPACT INDEX”: MEASURING THE WATER FOOTPRINT

To assess as accurately as possible its water footprint, Vallourec uses the “Water Impact Index” (WII), an indicator that summarizes the impact of its activities on water resources. In 2012, the company conducted an analysis at seven sites of water volumes withdrawn and discharged, the quality level of withdrawals and discharges, and water stress (water scarcity and hydrologic context). The company was able to use the data to establish a value for the indicator and demonstrate that the most critical sites are not necessarily those with the largest withdrawals. The study, which provides a better understanding of the water footprint and the ability to better prioritize actions and investments, will be expanded and deepened in 2014.

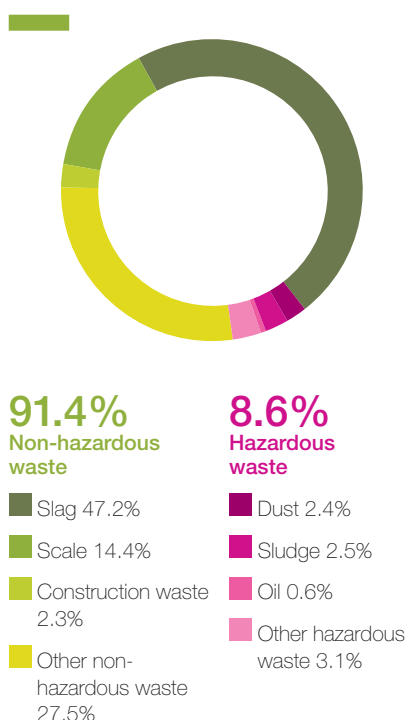
## WATER IMPACT INDEX



## RECYCLED AND RECOVERED WASTES

Like any industrial activity, tube manufacturing generates waste. Waste management is both an economic and ecological issue. Wastes are mainly slag from blast furnaces and steel mills, sludge from rolling operations and surface treatment, metal residues, mill scale and dust. Considered by Vallourec as a resource, these wastes are managed and processed in compliance with local regulations, with a priority for recycling or, as a default, energy recovery. They become valuable by-products able to generate operating profit (see box opposite). In addition, their use helps to reduce the environmental impact of the activities of the company and its partners by decreasing the use of raw materials and reducing pollution levels.

## DISTRIBUTION OF WASTE GENERATED IN 2013 (FROM A TOTAL OF 626,406 METRIC TONS)



**92.5%**  
Waste recovery rate in 2013.

In 2013, the Group generated 626,406 metric tons of waste, a 4.3% decrease compared to 2012, despite the increased level of activity. Through the actions taken, the recovery rate stood at 92.5% in 2013 (compared with 91% in 2012). Vallourec has set an objective of achieving a recovery rate of 95% in 2015.

## COMBATING NOISE

The manufacture of tubes inevitably generates noise: steel furnaces, cutting and storage of steel bars, the banging together of tubes and rolling operations. To protect employees against noise and improve integration with its surroundings, Vallourec deployed an action plan in 2013 to establish “noise maps” on the most critical sites. The methodology was used to analyze the noise levels in the various workshops and measure the exposure of employees. The company was then able to define the necessary means to improve working conditions consistent with its policy.

At the end of 2013, 80% of sites had been mapped, with 50% of them having implemented an action plan to reduce noise at the source, the approach that has proven the most effective. Some mills have replaced pneumatic controls with hydraulic controls for movements while others have placed rubber between tubes to avoid direct impact noise. Soundproofing systems also have been installed, including barriers, containment equipment and anti-noise walls. For example, significant work was performed in the production





facilities at the Rath (Germany) site in 2013. Altogether, 600 m<sup>2</sup> of roofing and 1,100 m<sup>2</sup> of surfaces covered with plastic sheeting have been replaced by laminated glass surfaces. In addition, installation of automatic lubrication of rail lines enabled noise to be reduced from 2 to 5 decibels around the site periphery. Employees are also provided with and required to wear suitable ear plugs in work areas. On-going medical surveillance is conducted systematically in order to detect risk of hearing loss.

#### IMPROVING AIR QUALITY

To preserve the quality of air around its plants, Vallourec systematically measures and implements solutions to reduce air emissions, where necessary. To reduce nitrogen oxide (NOx) emissions, billet heating furnaces and heat-treating tubes are fueled with low emissions natural gas and old burners are replaced each year with "low NOx" burners. In 2013, emissions were estimated at 702 metric tons of NOx, 0.13 grams per metric ton produced, close to the 2012 level. Pipe mills and finishing plants emitted an estimated 464 metric tons of volatile organic compounds (VOCs) in 2013, a decrease from 2012 (526 metric tons). Vallourec is also continuing its efforts to reduce particulate emissions from its steel mills.

#### CONTINUOUS SOIL MONITORING

Due to the age of certain sites, Vallourec has taken the initiative to monitor soil and groundwater. In general, the investigations indicated no real risk posed at any of the sites. When pollution is detected, the company undertakes all measures to stop the contamination and clean up the environment. For example, in connection with an investment that required machinery to be moved at the Cosne-sur-Loire site in France, a soil characterization analysis in 2013 identified hydrocarbon contamination, with 70 metric tons of polluted soil sent to a treatment facility.

#### TANGIBLE MEASURES TO PRESERVE BIODIVERSITY

With some of its activities directly related to biodiversity, Vallourec has been involved for several years in the protection of fauna and flora. In Brazil, Vallourec Tubos do Brasil SA

## Brazil: a second life for blast furnace sludge

### RICARDO FIGUEIREDO,

Manager of By-products project at Vallourec Tubos do Brasil

"On the integrated site of Barreiro, we have found a new use for the sludge produced by the cleaning of the gas furnaces. At Vallourec Tubos do Brasil,

40 employees took part in a collaborative research project that resulted in tests being successfully carried out, under the supervision of academic experts and environmental authorities. As a result, we are now able to use the blast furnace sludge to prepare and fertilize the soil of our eucalyptus plantations. As the eucalyptus is used to produce charcoal that feeds

the steel mill furnaces, the sludge has become an integral part of the production cycle. Use of this by-product as fertilizer also strengthens our self-sufficiency. Instead of using non-renewable resources to increase the productivity of our plantation, we recycle a material that would otherwise have been disposed. It's a virtuous circle!"



runs a 20-hectare environmental education center in Barreiro, which includes three ecosystems: the "cerrado" (savanna), the "Mata Atlantica" (Atlantic forest) and transition vegetation.

Its subsidiary, Vallourec Florestal, which manages the company's Brazilian logging operations, monitors flora and fauna in collaboration with the universities of Minas Gerais and Lavras. It measures the impact of activities on the natural environment and takes the necessary initiatives for the preservation and balance of biodiversity, including the maintenance of ecological corridors to facilitate the

free movement of animals. In Brumadinho, Vallourec Mineração, which conducts mining activities, monitors biodiversity on its site and in the neighboring regions. A 200-hectare reserve of Atlantic forest enables the conservation of a number of animal species, including 148 species of birds that have been identified.

In France, as part of the proposed extension of the Aulnoye research center, Vallourec conducted a study in 2013 on the local fauna and flora with an expert firm. The study is enabling Vallourec to undertake the project while fully preserving the ecosystem. ■

# ATTENTIVE TO SHAREHOLDER EXPECTATIONS

Through regular meetings, Vallourec maintains relationships with shareholders based on trust and proximity. The General Shareholders Meeting, held May 30, 2013 at the Palais Brongniart, marked a key moment in the dialogue that the company seeks to foster. This dialogue continued throughout the year through meetings and conference calls with investors and individual shareholders. Regular visits to sites are organized to enable shareholders to deepen their knowledge of Vallourec's business activities and expertise. In June 2013, shareholders visited the Valinox Nucléaire site in Montbard, France. The Investor Relations and Financial Communications team participated in panel discussions in Paris and Marseilles for individual shareholders with other companies in the oil services industry. Vallourec also participated in socially responsible investment (SRI) events with several funds, which contributed to the company's sustainable development progress.

In addition, the Investor Relations and Financial Communications team issues clear and accessible information to shareholders throughout the year, communicated through a variety of media, including a shareholders' letter, a shareholders' guide and the Investors section of Vallourec's Internet site.

Meetings with nearly  
funds and institutional investors  
in 14 financial centers.

400



## Portion of employee share ownership continues to grow

Since 2008, Vallourec has offered annual employee share plans around the world. In 2013, nearly 15,000 employees in nine countries (Brazil, Canada, China, France, Germany, Mexico, UAE, the UK and the U.S.) participated in Vallourec's global employee share ownership plan, "Value 13." The share of capital held by employee shareholders now stands at 7.37%. By subscribing massively year after year, employees have expressed their confidence in Vallourec's strategy and long-term performance and built a significant stable shareholder base in the company.

## INVESTOR DAY, A MAJOR EVENT WITH THE FINANCIAL COMMUNITY

Investor Day, accessible to all via a video broadcast on Vallourec's website, enables investors and analysts to further exchange with the company's senior management and operational managers on a variety of topics, outside results announcement periods. In 2013, Vallourec held its Investor Day in the U.S. The meeting provided an opportunity to present the various markets in which Vallourec operates, the products and services it provides, its activities in the area of innovation and sustainable development and the company's growth prospects and strategy for value creation. The meeting also included a visit to the new plant in Youngstown and workshops dedicated to the Oil and gas market, covering issues such as drilling, construction and equipment for onshore and offshore wells. ■

2

meetings with individual shareholders, in Paris and Marseilles.

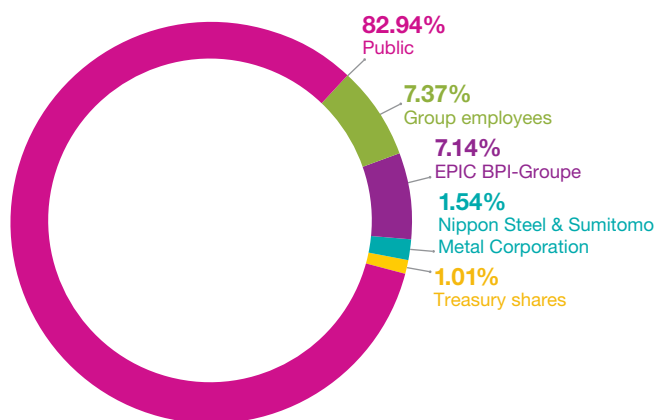
3

visits to Group production sites.

4

days of conferences on the Oil and gas industry.

## SHAREHOLDING STRUCTURE AT DECEMBER 31, 2013



7.37%

Portion of Vallourec's capital held by employees at December 31, 2013.

## VALLOUREC SHARE DATA

Listed on Euronext Paris Eurolist (compartment A)

Admitted to the Deferred Settlement Service

ISIN share code: FR0000120354 (ticker: VK)

ISIN ADR share code: US 92023R2094

(ticker: VLOWY)

Indices: CAC 40, Euronext 100, SBF 120, MSCI World Index, Euronext Vigeo France 20, Euronext Vigeo Europe 120, Euronext Vigeo World 120

Market capitalization at March 31, 2014: €5.1 billion

## DIVIDEND POLICY

Vallourec's long-term dividend policy, approved by the Supervisory Board, aims to distribute to shareholders an average rate of 33% of consolidated Group net income. The dividend proposed to the General Shareholders Meeting of May 28, 2014 for fiscal year 2013 is €0.81 per share, an increase of 17.4% compared to the previous year, in line with the increase in Group net income. This dividend corresponds to a payout ratio<sup>(1)</sup> of 39.6% of consolidated Group net income.

## EARNINGS PER SHARE AND DIVIDEND IN EUROS

	2011	2012	2013
NET EARNINGS PER SHARE	€3.40	€1.80	€2.10
DIVIDEND PER SHARE	€1.30	€0.69	€0.81
DISTRIBUTION RATE <sup>(1)</sup>	39.3%	39.7%	39.6%

(1) The payout rate calculation is based on the number of shares as at December 31.

## DIVIDEND DISTRIBUTION KEY DATES

- **JUNE 3, 2014**  
Record date
- **JUNE 4, 2014**  
Share quoted ex-dividend
- **JUNE 4-17, 2014**  
Option period: shareholders elect to receive the dividend in cash or shares and return the instructions to their financial institution
- **JUNE 25, 2014**  
Dividend payment



# ENVIRONMENTAL PERFORMANCE INDICATORS

Vallourec is committed to tracking and reporting the results of its social and environmental responsibility efforts. Chapter 4 of its 2013 Registration Document, "Corporate social responsibility", includes 42 topics listed in article R. 225-105-1 of the French Commercial Code on which information was collected worldwide. These indicators and the consistency with the described policies have been audited by the Group's external auditors with a moderate level of assurance and are the subject of a report contained in appendix 2 of chapter 4 of the 2013 Registration Document.

Indicators	Unit	2009	2010	2011	2012	2013
<b>PRODUCTION</b>						
	Metric tons processed	3,273,973	4,642,266	5,175,558	4,959,229	5,456,271
	Metric tons shipped	1,503,000	1,888,000	2,251,000	2,092,000	2,159,000
<b>WATER INTAKE</b>						
	m <sup>3</sup> /year	7,326,310	8,078,804	8,628,862	8,360,710	8,786,030
	m <sup>3</sup> /metric ton processed	2.2	1.74	1.67	1.69	1.61
	m <sup>3</sup> /metric ton shipped	4.9	4.28	3.83	3.99	4.07
<b>WATER DISCHARGED</b>						
	m <sup>3</sup> /year	4,830,400	4,903,721	5,257,296	5,596,360	5,494,232
	m <sup>3</sup> /metric ton processed	1.5	1.06	1.02	1.13	1.01
	m <sup>3</sup> /metric ton shipped	3.2	2.6	2.34	2.68	2.54
	Total metals mg/l. rejected	1.14	1.14	1.11	0.86	0.81
<b>WASTE</b>						
Non-hazardous waste	Metric tons/year	465,047	588,614	616,828	604,425	572,669
Hazardous waste	Metric tons/year	47,745	59,904	48,985	50,544	53,737
Recovered waste	%	ND	86	89	91	93
Total waste <sup>(1)</sup>	Metric tons/year	512,793	628,518	665,813	654,969	626,406
	kg/metric ton processed	157	135	129	132	115
	kg/metric ton shipped	341	333	296	313	290
<b>ENERGY</b>						
Natural gas	GWh/year	2,652	3,238	3,496	3,257	3,708
	kWh/metric ton processed	810	697	675	657	680
	kWh/metric ton shipped	1,764	1,715	1,553	1,557	1,717
Electricity	GWh/year	1,197	1,521	1,598	1,603	1,812
	kWh/metric ton processed	366	328	309	323	332
	kWh/metric ton shipped	796	806	710	766	839
<b>CO<sub>2</sub><sup>(2)</sup></b>						
Total emissions	Metric tons/year	739,807	961,264	1,050,778	1,007,967	1,127,592
	kg CO <sub>2</sub> eq./metric ton processed	226	207	203	203	207
	kg CO <sub>2</sub> eq./metric ton shipped	492	509	467	482	522
<b>STEEL PRODUCTION IN 2013 (metric tons)</b>						
<b>PLANT</b>	<b>Blast furnaces</b>			<b>Electric arc furnaces</b>		<b>Steel mills</b>
	Ore	Pellets	Charcoal	Scrap	% internally recycled	Scrap and cast iron
Vallourec Tubos do Brasil – Barreiro	251,643	460,300	296,033	69,068	100	489,467
Vallourec Tubes France – Saint-Saulve				335,941	29	335,941
Vallourec Star – Youngstown				705,920	10	735,117
<b>TOTAL</b>	<b>251,643</b>	<b>460,300</b>	<b>296,033</b>	<b>1,110,929</b>	<b>27</b>	<b>1,560,525</b>

(1) Not consolidated in total special waste from previous years: in 2010, 26,057 tons of special hazardous waste (Barreiro: 26,050 metric tons / Mülheim: 7 metric tons).

(2) Note that the emission factor for methane was revised in line with the official values beginning in 2010.

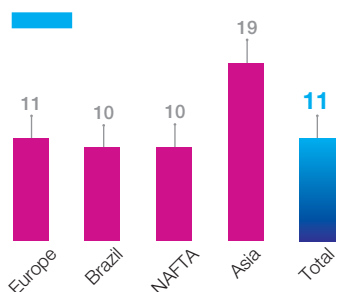
# SOCIAL PERFORMANCE INDICATORS

Indicators	2009	2010	2011	2012	2013
<b>EMPLOYEES</b>	18,567	20,561	22,204	23,177	24,053
<b>TURNOVER (%)</b>	9	7	8	10	9

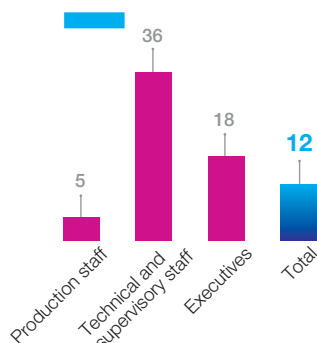
EMPLOYEES BY REGION	2012	2013	Change	2012 distribution	2013 distribution
Europe	9,904	9,891	- 0.13%	43%	41%
Brazil	8,151	8,429	3.41%	35%	35%
NAFTA	2,859	3,154	10.32%	12%	13%
Asia	1,922	2,098	9.16%	9%	9%
Middle East	272	412	51.47%	1%	2%
Africa	69	69	0%	0%	0%
<b>TOTAL</b>	<b>23,177</b>	<b>24,053</b>	<b>3.78%</b>	<b>100%</b>	<b>100%</b>

HIRES AND TRANSFERS IN 2013	Production staff		Technical and supervisory staff		Executives		TOTAL	
	Number	%	Number	%	Number	%	Number	%
Europe	468	58	121	15	224	28	813	28
Brazil	807	77	120	11	125	12	1,052	36
NAFTA	423	67	94	15	112	18	629	21
Asia	152	55	77	28	45	16	274	9
Others	143	88	15	9	4	2	162	5
<b>TOTAL</b>	<b>1,993</b>	<b>68</b>	<b>427</b>	<b>15</b>	<b>510</b>	<b>17</b>	<b>2,930</b>	<b>100</b>

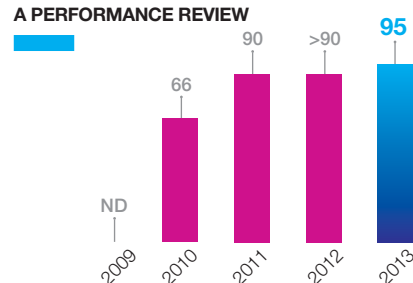
% WOMEN IN 2013 PERMANENT WORKFORCE



% OF WOMEN 2013 NEW HIRES



% OF EXECUTIVES HAVING A PERFORMANCE REVIEW



	2009	2010	2011	2012	2013
<b>SAFETY</b>					
LTIR <sup>(1)</sup>	5.27	3.16	2.79	2.6	2.26
TRIR <sup>(2)</sup>	18.6	12.8	9.4	7.1	5.51
Severity rate	0.33	0.2	0.11	0.11	0.12
<b>TRAINING</b>					
Number of employees trained	ND	12,691	16,027	15,942	14,912
Number of training hours	520,000	650,346	677,931	597,379	582,000
	Europe	Brazil	United States	Asia	TOTAL
% of employees in at least one day of training in 2013	53	70	71	46	62
Average number of hours of training in 2013	24	28	19	17	25

(1) LTIR (Lost Time Injury Rate): number of accidents with lost time per million hours worked. (2) TRIR (Total Recordable Injury Rate): total number of accidents per million hours worked.

# SUMMARY CONSOLIDATED BALANCE SHEET

<i>In € million</i>	31/12/2012 <sup>(1)</sup>	31/12/2013
<b>NON-CURRENT ASSETS</b>		
Net intangible assets	224	206
Goodwill	511	495
Net property, plant and equipment	4,320	4,151
Biological assets	196	178
Investments in equity affiliates	162	173
Other non-current assets	408	437
Deferred tax assets	213	187
<b>TOTAL</b>	<b>6,034</b>	<b>5,827</b>
<b>CURRENT ASSETS</b>		
Inventories and work-in-progress	1,430	1,423
Trade and other receivables	969	1,099
Derivatives - assets	59	92
Other current assets	203	297
Cash and cash equivalents	546	563
<b>TOTAL</b>	<b>3,207</b>	<b>3,474</b>
<b>TOTAL ASSETS</b>	<b>9,241</b>	<b>9,301</b>
<b>EQUITY</b>		
Equity, Group share	4,729	4,601
Non-controlling interests	415	385
<b>TOTAL EQUITY</b>	<b>5,144</b>	<b>4,986</b>
<b>NON-CURRENT LIABILITIES</b>		
Bank loans and other borrowings	1,410	1,379
Employee benefits	215	182
Deferred tax liabilities	190	209
Other long-term liabilities	210	225
<b>TOTAL</b>	<b>2,025</b>	<b>1,995</b>
<b>CURRENT LIABILITIES</b>		
Provisions	153	138
Overdrafts and other short-term borrowings	750	815
Trade payables	678	833
Derivatives - liabilities	15	24
Other current liabilities	476	510
<b>TOTAL</b>	<b>2,072</b>	<b>2,320</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>9,241</b>	<b>9,301</b>

(1) Figures for the 2012 period have been restated with the impact of the change in method of accounting for actuarial gains and losses on employee benefits (revised standard IAS 19).



# SUMMARY CONSOLIDATED INCOME STATEMENT



<i>In € million</i>	31/12/2012 <sup>(1)</sup>	31/12/2013
Sales	5,326	5,578
Cost of sales <sup>(2)</sup>	-3,938	-4,035
Administrative, selling and research costs <sup>(2)</sup>	-576	-560
Other <sup>(2)</sup>	-24	-63
<b>EBITDA</b>	<b>788</b>	<b>920</b>
Depreciation of industrial assets	-238	-270
Other (amortization, exceptional items, impairment & restructuring)	-74	-116
<b>OPERATING PROFIT</b>	<b>476</b>	<b>534</b>
<b>FINANCIAL INCOME / LOSS</b>	<b>-93</b>	<b>-91</b>
<b>PROFIT BEFORE TAX</b>	<b>383</b>	<b>443</b>
Income tax	-115	-148
Net profit of equity affiliates	7	4
<b>NET INCOME FOR THE CONSOLIDATED ENTITY</b>	<b>275</b>	<b>299</b>
Non-controlling interests	-54	-37
<b>NET INCOME, GROUP SHARE</b>	<b>221</b>	<b>262</b>

(1) Figures for the 2012 period have been restated with the impact of the change in method of accounting for actuarial gains and losses on employee benefits (revised standard IAS 19).

(2) Before depreciation and amortization.

# METHODOLOGY NOTE

Intended to inform shareholders and the general public on the sustainable development activities undertaken by Vallourec, this report is based on data gathered from global systems deployed at each participating site.

It conforms to the Grenelle 2 law of July 12, 2010 and its article 225. The information integrated in chapter 4 "Corporate social responsibility" of the Registration Document was verified with a limited level of assurance by the company's statutory auditors.

## INDICATOR SYSTEM

Vallourec has defined its indicators based on the recommendations of the Global Reporting Initiative (GRI), version 3, which sets forth the goal of developing directives that will provide a comprehensive assessment of economic, environmental and social performance by companies.

**Environmental and safety indicators** are provided through the ERMIT reporting system, which allows these factors to be monitored and consolidated monthly. These are included in a glossary available in the Group's four main working languages (French, English, German and Brazilian Portuguese), distributed by the Sustainable Development Department to its network of contacts.

**Indicators on employment conditions** also have precise definitions that have been standardized for the entire Group and incorporated into a procedure. Each site collates these indicators in an Excel spreadsheet on a monthly basis.

The data is then consolidated by country by the local HR contact, followed by the Human Resources Department at the company level.

## REPORTING SCOPE

The scope of Environment and Safety reports is determined in accordance with the rules put in place by Vallourec's Sustainable Development Department. The scope includes:

1. Sites carrying out industrial activities. Therefore, the following are excluded from Environment reports: the Europe IT Center at Saint-Saulve, the administrative offices and headquarters, as well as all sales offices. Research centers are also excluded, with the exception of the Vallourec Research Center France, whose activity is more varied. As for consolidation of the Safety indicators, all sites are included with the exception of small sales offices.
2. Sites that have belonged to Vallourec for over six months. This rule needs to be considered when an acquisition or disposal is under way.
3. Sites that conduct effective industrial activity throughout the financial year. This therefore excludes sites under construction that have not hosted a minimum of six months of activity (as was the case in 2013 for Valinox Nucléaire in Guangzhou, China).
4. Sites for which Vallourec holds over 50% of voting rights. Conversely, the sites for which Vallourec has a non-controlling interest are not incorporated into the scope. An example of this is the HKM steel mill, in which the Group has a 20% stake.

5. Due to its size, the VSB site, 56% held, is consolidated at this same percentage for its environmental data.

6. The social reporting scope includes all companies that fall within the scope of financial reporting; their employees are consolidated at 100%.

## CONSOLIDATION PRINCIPLES

1. Companies and sites that fall within the scope in accordance with the rules described above are not treated using the equity method, but are all placed on the same baseline at the moment of consolidation, i.e., as if they were all wholly owned by the Group.
2. The prudence concept: consolidation is based on cautious evaluations so as to avoid transfer and reputation risks.
3. Accruals concept: financial years are all independent of each other.

## CONSOLIDATION AND VERIFICATION

Environment indicators are consolidated and verified every month by the Sustainable Development Department, which checks that the information provided is accurate, complete and on-time. If there is any doubt or incoherence, the corresponding sites are questioned and required to provide explanations demonstrating whether the reported indicators have been properly understood and whether the year's objectives have been met. This stage is crucial for the quality of reporting and for guaranteeing that indicators are monitored and that an approach of continuous progress is followed. Furthermore, in order to verify and compare data, the Sustainable Development Department publishes a quarterly summary, which is communicated to the management and all sites.

Safety indicators are released monthly, following verification, to senior management, Divisions and all sites.

Each month, the Human Resources Department verifies the social data collected and then distributes a summary on this data to Vallourec's Executive Committee.

A description is included in the Registration Document of any exceptions and special cases.

## PRODUCTION CALCULATIONS

**Per metric ton processed**, Vallourec defines this as the metric ton of output from each plant (number of units produced by the plant), whether this is steel, hot tubes or fully finished cold tubes. Production from each plant is added together to obtain Vallourec's total production in metric tons processed.

For integrated sites, such as Vallourec Star in Youngstown, Vallourec Tubos do Brasil in Belo Horizonte and VSB, total production is the sum of steel and tube production.

The production of iron ore at Vallourec Mineração, along with the production of charcoal at Vallourec Florestal, is not taken into account when calculating Vallourec's total production.

**Per metric ton shipped**, we mean tons shipped to our clients during the year: this is the official production figure published in the Group's results. Environmental data is systematically expressed in absolute and relative values, both graphically and in results tables.

Relative values are calculated either over production in metric tons processed, which allows for a degree of benchmarking between different sites, or production in shipped tubes, which enables us to measure the environmental footprint of tubes shipped to our clients.

A digital version of the  
**2013 ACTIVITY AND SUSTAINABLE DEVELOPMENT REPORT**  
is available at [www.vallourec-RA2013.com/en](http://www.vallourec-RA2013.com/en)



For more information on Vallourec



**2013 REGISTRATION DOCUMENT**  
and annual financial report



**VALLOUREC AT A GLANCE**

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