Health, Safety and Environment Report 2009







#### Quality, Health, Safety and Environment Policy

Tenaris aims to achieve the highest standards of Quality, Health, Safety and Environment, incorporating the principles of sustainable development throughout its operations.

Nothing is more important than the health and safety of everyone who works for us and uses our products

All injuries and work-related illnesses can and must be prevented Management is responsible and accountable for health and safety performance Employee engagement and training is essential Working safely is a condition of employment Excellence in health and safety supports excellent business results Health and safety must be integrated in all business management processes

Quality is our main competitive advantage
The requirements and expectations of our customers must be satisfied
Quality management is integrated in all business processes
Management is responsible and accountable for quality performance
Quality performance must be assured throughout the supply chain system
Excellence in quality management is necessary for successful business results

We are committed to developing a long-term sustainable business
Minimizing the environmental impact of our operations
Making the most efficient use of natural resources and energy
Integrating environmental management in all business processes
Holding employees committed and responsible for environmental performance
Establishing an open and transparent dialogue with related stakeholders

Tenaris identifies the health and safety of its personnel, the satisfaction of its customers, the protection of the environment and the development of the communities with which it interacts as an absolute and integrated priority; the entire organization is oriented toward achieving these goals openly and transparently.

Tenaris strengthens its management through constant training and updating of professional and management skills, paying attention to the evaluation and motivation of its employees, adherence to the ethical principles established in its Code of Conduct and the maintenance of an adequate balance between their quality of life and its business needs.

Tenaris recognizes the importance of implementing this policy through its Quality, Health, Safety and Environment management systems, covering the entire supply chain from suppliers to customers and the proper and efficient use of its products in accordance with their agreed specifications. Tenaris commits to comply with applicable legal requirements and all other requirements relating to quality, health, safety and environment matters to which it subscribes.

Tenaris communicates this policy throughout its organization, engages and trains its employees in the appropriate use of its Quality, Health, Safety and Environment management systems and involves them in the regular setting, measuring and revision of objectives.

Tenaris undertakes to keep this policy updated, to implement and maintain its management system, and continuously improve its Quality, Health, Safety and Environment performance.

October 2008

Paolo Rocca

Chief Executive Officer

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# Chairman's letter

As a long-term industrial project, we are committed to pursuing and achieving the highest standards in securing the health and safety of our employees, satisfying our customers through the quality and reliability of our products and services, minimizing our environmental impact and sustaining the development and wellbeing of the communities where we have our operations. This is a constant and transparent commitment that we have also outlined in our Quality, Health, Safety and Environment Policy.

We are equally committed to creating a work environment that retains and attracts the managerial and skilled personnel essential for the continuing development of our company as a leading supplier of goods and services to the world's energy industry. We have established a corporate university to align knowledge across our operations. We oversee training and management development activities as a key part of this effort to sustain our position in the years to come.

Today, HSE performance is more critical than ever to our competitiveness. We must provide a safe and attractive work environment for our employees and reduce our costs and environmental impact through more efficient use of energy and natural resources. This is also important for our customers, who expect us to perform according to their standards. We work with them and our suppliers in an integrated approach to minimize the risk of accidents and the environmental impact of our operations throughout the supply chain up to the point of use of our products. This includes, in some instances, the design of products and services.

The data in this report show that we have made steady progress during the past five years, but that much remains to be done. During this period, Tenaris has grown significantly. We have integrated new pipe manufacturing operations in North America, Colombia and Romania and further extended our worldwide industrial presence with additional pipe threading facilities in Nigeria, China, Indonesia and the UK. Our employee base is now more diverse in terms of nationalities and cultures. We view these changes as a source of strength and opportunity.

We manage our industrial system as an integrated whole to maximize its efficiency in supplying our customers' needs in their operations throughout the world. We use competitive benchmarking among facilities to standardize operational practices throughout the system. Recently, we launched a series of company-wide initiatives to achieve a qualitative improvement in our industrial performance, which we expect to impact favorably on our HSE performance in the coming years.

Paolo Rocca

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# Company presentation

Our global industrial system includes:

2 DRI (Direct Reduced Iron) plants

4 EAF (Electric Arc Furnace) steel shops

15 Seamless pipe rolling mills

32 Welded pipe mills

30 Heat treatment lines

80 Premium threading lines,

#### A global industrial system

Tenaris is a leading supplier of tubes and related services for the world's energy industry and other industrial applications. Our mission is to deliver value to our customers through product development, manufacturing excellence, and supply chain management. We minimize risk for our customers and help them reduce costs, increase flexibility and improve time-to-market. Tenaris employees around the world are committed to continuous improvement by sharing knowledge across a single global organization.

We operate an integrated industrial system with manufacturing and service facilities around the world. Our entire industrial system operates under a single quality management system and we are in the process of implementing a single HSE management system. We recently combined our quality and HSE policies into a single Quality, Health, Safety and Environment Policy, which outlines our commitment to achieving the highest standards, and to continuously improving our performance.

and comprises numerous sites around the world as indicated in the Tenaris' industrial map. All locations named in the map are manufacturing facilities; unnamed sites are service yards and threading facilities.

#### **Production**

The following table shows our production of steel bars, seamless pipes and welded pipes during the past five years.

	2004	2005	2006	2007	2008
STEEL BARS	2,663	2,881	3,107	2,985	3,085
SEAMLESS PIPES	2,631	2,842	3,013	2,836	3,005
WELDED PIPES	366	476	642	1,408	1,547

Unit: thousand metric tons

#### **Our products**

Our principal finished products are seamless and welded steel casing and tubing, line pipe and various other mechanical and structural steel pipes for different uses. Casing and tubing are also known as Oil Country Tubular Goods or OCTG. We also produce large diameter welded steel pipes for oil and gas pipelines. We manufacture our steel pipe products in a wide range of specifications, which vary in diameter, length, thickness, finishing, steel grades, threading and coupling.

*Casing:* Steel casing is used to sustain the walls of oil and gas wells during and after drilling.

*Tubing:* Steel tubing is used to conduct crude oil and natural gas to the surface after drilling has been completed.

*Line pipe:* Steel line pipe is used to transport crude oil and natural gas from wells to refineries, storage tanks and loading and distribution centers.

Mechanical and structural pipes: Mechanical and structural pipes are used by general industry for various applications, with focus on segments such as automotive components, hydraulic cylinders, gas cylinders and architectural structures.

Cold-drawn pipe: The cold-drawing process permits the production of pipes with the diameter and wall thickness required for use in boilers, superheaters, condensers, heat exchangers, automobile production and several other industrial applications.

Premium joints and couplings: Premium joints and couplings are specially designed connections used to join lengths of steel casing and tubing for use in high temperature or high pressure environments. A significant portion of our steel casing and tubing products are supplied with premium joints and couplings.

*Coiled tubing:* Coiled tubing is used for oil and gas drilling and well workovers and for subsea pipelines.

Other products: We also manufacture sucker rods used in oil extraction activities, industrial equipment of various specifications and applications, including liquid and gas storage equipment, and welded steel pipes for electric conduits used in the construction industry. Additionally, we sell raw materials, such as HBI, that exceed our internal requirements.

#### **HSE** management system

Tenaris is committed to the continuous improvement of its health, safety and environmental performance. To achieve this goal, the company relies on the implementation and improvement of an integrated Health, Safety and Environment (HSE) management system.

Based on the principles of sustainable development, the management system follows the guidelines of international standards such as ISO 14000 and OHSAS 18000. These guidelines apply eco-efficiency and integral safety concepts to the whole system, from product design and industrial investment to operational and logistics planning and execution. The HSE management system is currently operational at many of our sites and we expect to

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reach full deployment and use at all our manufacturing sites by the end of 2010.

As a core part of our management system, we continue working to identify and evaluate risks and environmental aspects at each site. We are developing programs and procedures for establishing standard practices. Our methods have been developed internally and are standard for every Tenaris facility, helping to define and follow up improvement plans at all our sites.

We have defined a set of HSE performance indicators that take into account the company's global objectives, common processes, risks and environmental aspects. These indicators are routinely reported to corporate areas allowing benchmarking between different facilities, tracking of performance and improvement through the definition of corrective and - especially - preventive plans.

We have developed an IT tool, called Tenaris Safety and Environment (TSE), to standardize the management of health, safety and environmental issues. TSE allows the recording and tracking not only of accidents, incidents, observations and related corrective and preventive actions, but also the evaluation of health and safety risks and environmental aspects, the development of HSE related improvement programs and the results of HSE tours and inspections. The system also establishes performance objectives and facilitates follow up of related indicators. TSE has already been implemented in many of our facilities and we expect it to be fully operational in all of our manufacturing sites by 2010.

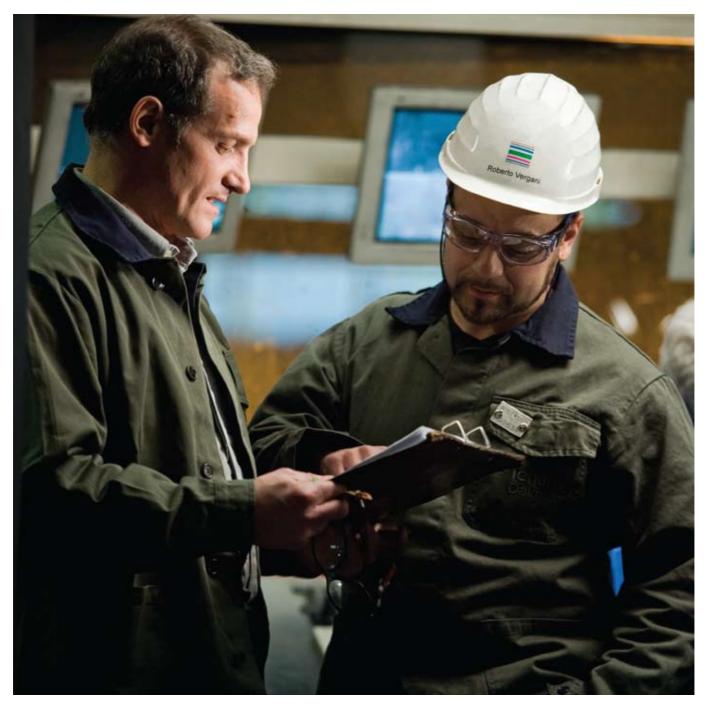
#### **Employee training**

We have established a corporate university, TenarisUniversity (www.tenarisuniversity.com), to integrate, align and disseminate knowledge across the company. With an annual operating budget of around US\$30 million, this represents a significant investment in the training and future development of our employees. TenarisUniversity offers a variety of courses that mix e-learning and on-site classroom teaching with off-site training, through agreements with universities and providers. Training is administered through a new state-of-the-art Learning Management System, through which courses can also be made available to customers, suppliers and third parties.

E-learning and training courses on HSE topics have been and will continue to be developed in order to instill and reinforce common values and disseminate knowledge of the company's HSE policies. A general HSE course is taught with other e-learning courses completed during an employee's initial period with the company. This ensures that every employee, regardless of job description, location or everyday responsibility, is familiar with the company's HSE policies and activities.

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TenarisUniversity also offers specialized HSE training for certain positions. Employees who supply products and services to oil and gas drilling operations, for example, must take an e-learning course called HSE Rig Pass, certified by the International Association for Drilling Contractors. This training program covers issues such as the correct use of tools, safe driving, load transportation, correct behavior for avoiding accidents and environmental protection.



Based on the principles of sustainable development, our management system follows the guidelines of international standards such as ISO 14000 and OHSAS 18000.

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# Safety and health

#### Safety

We adhere to the Safety and Health principles of the World Steel Association (worldsteel) and share its goal of an injury-free, healthy workplace.

The first principle states: all injuries and work-related illness can and must be prevented. To achieve this goal, we have put in place a number of actions including, among others, hazard identification and risk assessment, technological improvements, safe practices implementation, training and awareness. During weekly meetings with managers, health and safety staff and workers at each site discuss incidents; decide on actions to implement and share experiences to improve safety.

During 2007, a team of internal experts and external consultants carried out safety assessments at our larger mills to evaluate safety management and identify the best practices throughout our industrial system. This best practices assessment covered many different but related parts of health and safety management. In 2008 a team developed projects focused on reducing risks and the frequency of accidents through improvement of the work environment,

reinforcement of employee knowledge and awareness of safety issues, and the involvement of employees in implementing safety practices. Evaluation of these projects' results is helping to define the company-wide implementation of these practices.

#### **Prevention in safety**

We recognize that the detection of unsafe situations related to individuals' behavior and external conditions is fundamental to avoid accidents and incidents. Therefore, we encourage our personnel to identify and report unsafe situations and safety procedure violations, and to carry out the necessary corrective and preventive actions.

As illustrated in the graph 1.3, the number of reported observations has increased since we introduced the system. This is due to increased employee commitment to using the TSE software, as well as its progressive deployment throughout our facilities. We expect observations to continue increasing, and then, in a second phase, to level off to reflect the outcome of prevention programs and practices.

Our TSE software system was first introduced at Dalmine in 2003 since when we have begun to deploy it through the whole company. The software is used to manage most of the activities included in our management system.

#### **Continuous improvement: lower accident rates**

The injury frequency rate (the number of all accidents without First Aid per million man hours worked) has decreased by 30% since 2004; however, recent progress has been slow, mainly due to the absorption of newly acquired facilities where more rigorous health and safety standards are being introduced. See graph 1.1.

A similar result can also be seen in the graph 1.2, charting the evolution of the lost time injury frequency rate (accidents with lost time per million man hours worked). It shows that the value has decreased by 40% since 2004 but the rate of decrease was slower during 2006 and 2007, years in which we integrated major acquisitions.

Despite these improvements, we suffered seven fatalities over the past five years with three of them occurring in 2008. We deeply regret the loss of these lives.

Of the three fatalities that occurred in 2008, one was related to pipe handling at one of our U.S. operations, a second occurred during an intervention in an automatic production line in Colombia and the third happened in Italy when an employee was hit by a pipe funnel guide that fell during an ordinary start-up activity of a pre-heating furnace. The previous fatalities involved a fall from height during a maintenance operation in Romania, the fall of a metal structure which hit one of our employees at one of our Brazilian facilities and a transportation accident on an internal road at one of our Italian operations.

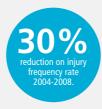
We believe that a strong management commitment, the process of risk evaluation as a way to increase employee knowledge and awareness of risk in their activities, discipline and training focused on new and relocated employees' induction are key factors for continuous improvement and for achieving our ultimate goal of zero accidents in the workplace.

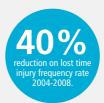
#### Safety campaigns

Our communication campaigns focus on creating a safety culture with a long-term impact, in which each person learns to be careful at work. They are part of the joint commitment between the management, the people in charge of safety and our mill workers.

In turn, each plant's communication team works with their local safety teams and emmployees. In Mexico, since 2007, we implemented a new methodology with focus groups organized to analyze the clarity of a campaign's message before launch. Following the campaign, they gauge its success by asking specific questions about the campaign to follow closely its influence.

Our first safety campaign in the U.S. displayed a series of leisure activities that can be done with the hands outside the work environment, such as barbecues and card games. A simple tagline admonished employees to protect their hands "for the good life". The 2008 campaign features the faces of employees from our U.S. location on billboards, banners and posters alongside strong, simple reminders to "work wisely", "work alert" and "work safely".





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In our most recent safety campaign at our Siderca plant in Argentina, called "Five basic rules to prevent serious accidents" we illustrate standards that come from a study regarding the most serious accidents that have occurred in the facility during the last 35 years. To verify compliance with these safety rules, inspections have been implemented and indicators have been defined. Compliance and improvements are analyzed weekly during safety meetings chaired by the plant's operations director to define and implement corrective actions.

#### Health

Tenaris seeks to provide a good quality working environment and to promote awareness of healthy practices among its employees.

Medical services at our facilities carry out various activities related to employee health. These include not only medical checks as required by local regulations, but also additional clinical tests aimed at early detection and prevention of different types of illness, such as skin and other types of cancer, diabetes, hypertension, etc. We carry out cardiovascular tests at many of our facilities, and perform special controls for people occupying certain jobs, such as crane and forklift operators. In some countries, we implement vaccination campaigns and carry out certain medical checks for employees' families. We also periodically conduct health awareness campaigns.

At the mills, we conduct hygiene monitoring campaigns to control different working conditions and risk factors such as ventilation, temperature and sound levels, the presence of vapors, particulate material, etc. Depending on the risks identified and evaluated at each workplace,

workers are obligated to use the defined personal protective equipment for the activity in question.

First Aid groups are organized at different mills. Volunteers periodically train for first aid action to maintain an adequate trained workforce for immediate emergency response.

We encourage sports and physical exercise among our employees. Sport activities such as gym classes, football, tennis, ice hockey, baseball matches, and annual marathons are organized on a local basis. We also encourage employees to have a balanced and healthy diet. At our larger facilities where we have lunchrooms, employees can find balanced menus including low calorie and low fat meals.

#### Safety behavior program in Tamsa

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This program started in 2006, focusing on behavioral observations of specially trained workers (50 up to now) in order to define action plans.

The focus of observations has been on: use of protective personal equipment; housekeeping; line-of-fire; and Lock out / Tag out.

Results of the program can be summarized as follows: increased reporting of unsafe situations; increased and more efficient communication among workers, supervisors and safety assistans; reduction of around 30% in accident rates in the areas where the program has been implemented.

# Safety indicators

## 1.1 Injury frequency rate



Methodology: Number of accidents with and without lost days (not including First Aid) multiplied by 1,000,000 divided by man hours worked.

Values consider own personnel until 2006 year.

Since 2007 figures refer to own personnel plus contractors.

#### 1.2 Lost time injury frequency rate

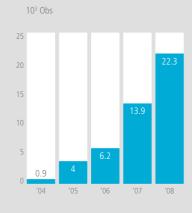


**Methodology:** Number of accidents with lost days multiplied by 1,000,000 divided by man hours worked.

Values consider own personnel until 2006 year.

Since 2007 figures refer to own personnel plus contractors.

#### 1.3 Observations evolution



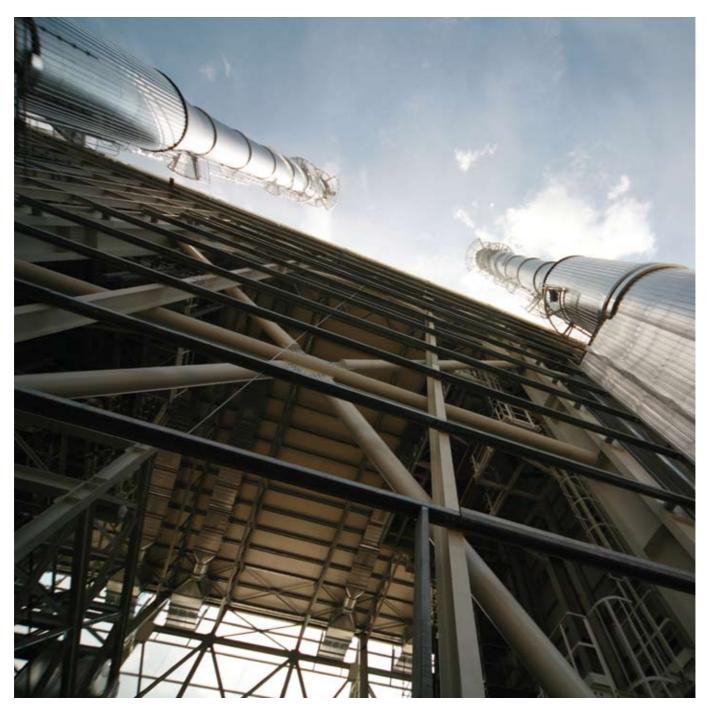
**Source:** TSE reported observations.

### TSE deployment at our facilities:

2003 Dalmine | 2005 Siat | 2006 Confab | 2007 AlgomaTubes, Siderca, Tamsa, Silcotub | 2008 TuboCaribe

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We believe that a strong management commitment, the process of risk evaluation as a way to increase employee knowledge and awareness of risk in their activities, discipline and training focused on new and relocated employees' induction are key factors for continuous improvement and for achieving our ultimate goal of zero accidents in the workplace.



We integrate care for the environment in all business management processes: from the beginning of our production process until the delivery of products and services to our customers.

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# Environment

Tenaris is committed to developing a long-term sustainable business by minimizing the environmental impact of our operations and by making the most efficient use of natural resources and energy. As the data in this report show, we have made a steady improvement over the past five years in an expansionary environment. Actions taken this year to adjust production to lower demand levels will make further improvement in some indicators more challenging, but our commitment remains.

We integrate care for the environment in all business management processes: from the beginning of our production process until the delivery of products and services to our customers.

#### Our production process and the environment

We produce the majority of the steel used in our seamless pipe products and we purchase the steel used in our welded pipes.

We produce all our steel through the electric arc furnace (EAF) route, using recycled steel (scrap) as a raw material in combination with mineral-based metallic charge. The use of recycled steel scrap saves natural resources and energy and therefore results in low emissions of CO<sub>2</sub>.

We produce around 65% of our mineral-based metallic charge requirements through gas-based direct reduction processes, which have lower  $CO_2$  emissions than coal-based processes. We purchase the rest of our mineral-based metallic charge, i.e. direct reduced iron where we do not produce it and pig iron.

The actual percentage of scrap we use annually varies according to availability and market conditions at the different sites. Overall, it has remained around 60% of our total metallic charge during the past five years. This compares favorably with the global average: according to worldsteel statistics, recycled steel made up around 40% of the global production of steel in 2006. See graph 2.1.

We operate power generation plants within our steel making facilities in Argentina and Italy. Using natural gas, and also fuel oil as needed, the power plant at Siderca produces 37 MW for internal consumption. We also operate a second, offsite power generation plant in Argentina - a modern gas turbine 160 MW facility. Our power generation plant at Dalmine is a 120 MW combined cycle plant that began operating in 2007 and provides electric power for internal consumption at Dalmine with excess power available for sale to the Italian national grid. The plant also provides hot water to the local community through a teleheating system, which was a commitment assumed as part of the plant's approval process. The teleheating system improves process efficiency and CO<sub>2</sub> emissions by replacing multiple higher emitting boilers with one efficient plant.

#### **Efficient use of electricity**

We use electricity primarily to melt the metallic charge in the EAFs and to power the rolling, welding and finishing machinery.

We decreased electricity consumption per ton of product by 22% since 2004. At the beginning of this period, electricity consumed in our seamless facilities accounted for 98-99% of total electricity consumption. In 2006, we acquired additional welded pipe facilities in the U.S., Canada and Colombia, and the proportion of electricity consumed in our seamless pipe facilities fell to 90% of the total in 2008. This change in the product mix has tended to reduce electricity consumption per ton produced, as the welded pipe process is less energy intensive. However, electricity efficiency in our seamless facilities has also continued to improve, as shown in the graphs 2.2 and 2.3.

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#### Reducing energy consumption

In 2009 we introduced an energy saving program, which aims to reduce energy consumption and, consequently,  $\mathrm{CO}_2$  emissions. This program includes consumption monitoring, efficiency analysis and benchmarking of our processes and facilities to identify energy saving opportunities. Several investments and actions have been carried out, for example: reuse of steam in certain processes, installation of regenerative burners in some furnaces, and numerous improvements to decrease electricity consumption. Other investments will be implemented in coming years as groups of experts at each facility continue to seek improvement opportunities.

#### Gas

We use natural gas primarily in the iron oxide direct reduction process, in the steel shop, as well as in rolling mill reheating furnaces and heat treatments.

Between 2004 and 2008, specific consumption of natural gas, measured in thousand cubic meters (km³) per ton of product, decreased by 20% from 0.24 to 0.19. Almost all our natural gas consumption takes place in our seamless pipe facilities: in 2008 our welded pipe facilities accounted for only 5% of our total natural gas consumption. This result has been achieved despite a significant increase in demand for products that are heat treated. See graph 2.4.

To reduce  $\mathrm{CO}_2$  emissions, we are implementing energy saving programs in our facilities, and carrying out investments to increase the energy efficiency of our processes. In the following indicator we can see the energy intensity per ton of steel for our sites including steel mills, which are the most energy intensive ones, measured in accordance with the methodology suggested by the worldsteel. See graph 2.5.

#### Climate change

According to the Intergovernmental Panel on Climate Change, the steel industry worldwide accounts for roughly 3-4% of total greenhouse gas emissions.

Worldsteel estimates that an average of 1.7 tons of  $\mathrm{CO}_2$  is emitted for every ton of steel produced (2008 World Steel Association Sustainability Report). This average includes emissions from both blast furnace and electric arc furnace (EAF) steel making methods; the latter is known to have lower emissions of  $\mathrm{CO}_2$  than the blast furnace route.

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We are committed to improving our performance and lowering our CO<sub>2</sub> emissions per ton produced notwithstanding the fact that the EAF steel making route in our facilities and the rate of recycled steel used represent important ways to reduce steel making emissions.

One of our steel making plants is fully integrated which means that iron ore lumps or pellets are turned into sponge iron through gas-based direct reduction before smelting in the EAF together with other metallic charge such as scrap. Apart from direct CO<sub>2</sub> emissions associated with the use of natural gas, we compute CO<sub>2</sub> emissions associated with the use of electricity in the smelting, rolling and other processes and indirect emissions associated with the purchase of raw materials and fuels from third parties. In these computations, we adhere to the CO<sub>2</sub> data collection methodology of worldsteel.

In accordance with the adopted methodology, we compute emissions from on-site power plants. As our power plant at Dalmine started operations in 2007, direct  $\mathrm{CO}_2$  emissions have increased since 2007, even though overall emissions have fallen. See graph 2.6.

The worldsteel methodology applies only to facilities where steel is produced. However, we produce some of our seamless and all of our welded pipes in facilities which do not include the steel making process. Emissions associated with these facilities are thus not counted in the above figures. When considering our tube producing facilities, direct emissions of CO<sub>2</sub> calculated using the same methodology account for an average of 0.49 tn CO<sub>2</sub> per ton of product.

Indirect emissions related to electric power consumed in those same facilities account for 0.25 ton of CO<sub>2</sub> per ton of product, making a total of 0.74 ton CO<sub>2</sub> per ton of product for 2008. Talking about absolute figures, total direct emissions amounted to approximately 2.3 million tons of CO<sub>2</sub> and indirect emissions relating to purchased electric power to approximately 1.2 million tons of CO<sub>2</sub>.

We are cooperating with worldsteel to develop an industry-wide sectoral approach to address the post-Kyoto Climate Change challenge. We have already submitted the emission information for years 2007 and 2008 for all of our sites under worldsteel methodology scope.

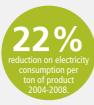
### A global sectoral approach to reduce CO<sub>2</sub> emissions

Worldsteel members have committed to reduce CO<sub>2</sub> emissions per ton of steel produced worldwide.

They will deliver a steel sectoral approach that:

- Involves collection and reporting of intensity-based (per ton of steel) CO<sub>2</sub> emissions data by steel plants in all major steel producing countries.
- Requires reporting and targets-setting for improvements in CO<sub>2</sub> emissions on a national and regional basis for implementation during the post- Kyoto period.

At the same time, worldsteel is working to transfer the best available steelmaking technologies to developing countries.







The aim of the steel industry's new approach to climate change is a global improvement in carbon dioxide emissions for every unit of steel produced. By including all the major steel producing countries, worldwide competition will no longer be harmed in an industry where over 40% of products are traded internationally.

#### Air emissions

Steelmaking, seamless pipe rolling and heat treatment are processes which produce relevant emissions in terms of particulate material, nitrogen and sulphur oxides. Steel shops emit most of the particulate material, while reheating furnaces emit nitrogen and sulphur oxides due to the combustion of natural gas. Average 2007 emissions of particulate material amounted to 0.2 kg per ton of product, while nitrogen oxides emissions amounted to 0.8 kg per ton of product and sulphur dioxides to 0.3 kg per ton of product. These values have been calculated considering emissions from our steel making and seamless pipe facilities at Dalmine, Siderca, Tamsa, Silcotub Steel Shop, Silcotub and Algoma Tubes. Our facilities at NKK Tubes and Tavsa have not been included as they do not report emissions separately being part of wider steel complexes.

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In many of our facilities, significant investments have been made to lower emissions of NOx and particulate material. Examples include the changing of burners in many Dalmine reheating furnaces and improvements in the collection and treatment system of Tamsa's and Siderca's steel shop emissions. Siderca has started a long term project to improve collection and treatment of steel shop emission. New investments are being planned to reduce air emissions at Algoma Tubes, and Dalmine.

#### Waste and by-product management

The steel industry produces large amounts of waste and by-products. Our goal is to recycle internally or externally as much of our by-products and wastes as possible, and to seek new ways to reduce the generation and disposal of waste.

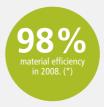
Among by-products of the steelmaking process, slag is the most important in terms of volume produced, and is usually reused for road construction. Scale, another relevant by-product in terms of volume, is used as a raw material in the cement industry and in the steel industry in the blast furnace route. In some cases, depending on the country and the quality of wastes, dust from steel mills can also be reused or recycled mainly for metal recovery.

Wastes are managed according to local legal requirements and disposed of or treated by means of available technologies and procedures at each location site.

One measure of the quantity of waste and by-products and their management is the material efficiency indicator, which compares the weight of production and by-products with the weight of total outputs: products, by-products and wastes that need to be disposed of. See graph 2.7.

#### Water management

In our steel making and seamless tube production facilities, water management is a significant issue in terms of



(\*) Facilities included: Siderca, Silcotub Steel Shop, Tamsa and Dalmine.

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intake and discharge. Water is mainly used for cooling processes in the seamless tube steel mills; welded pipes facilities have a much lower consumption of water.

Depending on the facility's location and the availability of resources, water intake can be of surface or subsurface origin. We aim to use less valuable water sources and encourage recycling whenever feasible. Accordingly, minimizing ground water extraction when alternative sources are available is a significant objective; indeed most water we use comes from surface sources. In recent years, consumption of surface water has increased compared to subsurface water; however, this tendency reversed in 2006 when we acquired a number of facilities with different water availability.

Some of our facilities have partially closed water systems in which water is used, treated and recycled, with a low rate of discharge. For steel mill facilities with closed systems, water use is between 6–8 m³ per ton of product. The Campana facility in Argentina, which is located on the shores of the Parana River, has an open circuit, where water is returned to the river after treatment.

Regarding discharge standards, we not only comply with local regulations but also set strict internal objectives for what we consider the most relevant factors related to our operations, such as total hydrocarbon and soluble iron levels.

#### Use of chemical substances

Significant efforts are made to minimize, or eliminate when possible, the use of chemical substances hazardous for the environment. As an example, few of our sites still use chlorofluorocarbons (CFC) products. Their use is

mainly confined to air conditioning installations and fire fighting systems. Those facilities that still use these products have established programs to change equipment and phase out their use.

Our facilities use lubricant and hydraulic oils, which are significant in terms of quantity consumed. As shown in the graph 2.8, specific consumption of these substances has decreased since 2005.

#### Noise

In steel making and in tube production, noise issues are relevant, not only for personnel and subcontractors working at our sites but also for our neighbors.

While significant efforts have been made at many of our sites to decrease noise levels, we recognize that there is still room for improvement.

Noise regulations are local issues that cannot be managed globally, as they depend on each facility's location and the presence of neighbors. At recently acquired facilities we still have to perform analyses to evaluate noise disturbances.

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Investments have been implemented to lower the noise impact of our operations. In the AlgomaTubes and Dalmine facilities these investments have been most important, particularly in the latter, where relevant actions are planned for the next years. Siderca is currently evaluating the different improvement alternatives already identified. Other facilities are starting to study their noise situation in a comprehensive way.

#### **Products and services for a cleaner environment**

Our global industrial structure supports a worldwide research and development (R&D) organization. We have more than 200 scientists and engineers staffing the research facilities and nearly half hold Master or Doctoral Degrees.

Our R&D facilities develop in-house scientific advances in the fields of steel metallurgy, alloy design, corrosion-resistant materials, computational mechanics, fracture mechanics, surface and coatings chemistry, as well as technology for automotive components and mechanical pipe applications. They also conduct full-scale testing of premium connections, line pipe and OCTG, and support and develop projects related to environment and energy efficiency.

Our research efforts have contributed to the development of products and technology used in some of the most environmentally sensitive oil and gas projects worldwide.

#### **Dope-free premium connections**

We have developed a dry, dope-free coating, called Dopeless<sup>®</sup>, which eliminates the need to use dope products in storing and running premium connections.

Dope-free connections eliminate the need storage and running dope, as well as the need to clean protectors and dispose of the associated waste. Also maintains clean rig floors that are less slippery, thereby enhancing safety and environmental conditions for the customer.

Snøhvit Project was the first offshore development worldwide where all casing and tubing was dope-free to help meet the stringent environmental standards established by the Norwegian government in the Barents Sea. Tenaris provided carbon and corrosion-resistant alloy tubing and casing with TenarisHydril Blue™ Dopeless® premium connections to this offshore development.

#### **Recycling of thread protectors**

Pipes are often supplied with plastic thread protectors to prevent thread damage during transportation and storage. Plastic protectors are removed when the pipes are used onsite. In some places where we operate, we have developed programs for recycling protectors, thus helping to reduce waste.

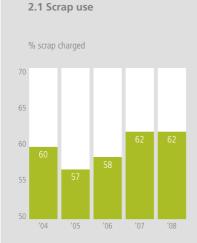
Some of our mills have facilities for producing plastic thread protectors. We send recovered protectors there to be cleaned and reused if possible, or shredded after cleaning and then recycled for producing new protectors. Sometimes we also look for third party companies for helping in the recycling of plastics and metals.

#### **Rig Ready**

Rig Ready is a new service that we offer, through which we deliver connections directly to the customer in a clean condition and ready for use. This service, which entails the cleaning of the connections, takes place in our service yards. This guarantees that all grease waste is correctly managed, in a center equipped specially for this task.

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# **Environment indicators**



Methodology: Values are calculated as this of scrap present in the metallic charge.

Facilities included: Siderca, Silcotub Steel Shop, Tamsa,

# 2.2 Electricity consumption

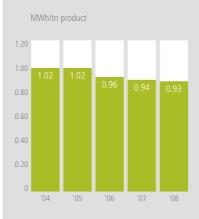


Methodology: measured in MWh/tn produced, calculated as electric power consumed in the site per ton of product.

Facilities included: For recently acquired facilities, the year identifies when they started to contribute to the indicator:

Dalmine, Arcore, Costa Volpino, Sabbio, Piombino | Siderca, Siat VA | Tamsa |
Tawsa | Confab Tubes | AlgomaTubes |
NKKTubes | Siat VC- 2006 | Silcotub
Steel Shop- 2006, Silcotub- 2005 |
TuboCaribe- 2006 | Hickman, Conroe, Coiled Tubes — Subsea Center, Counce, Louisville and Cedar Springs- 2007.

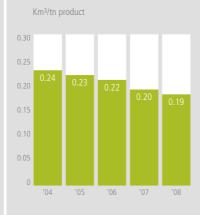
#### 2.3 Seamless facilities electricty consumption



Facilities included: For recently acquired facilities, the year identifies when they started to contribute to

Dalmine, Arcore, Costa Volpino, Sabbio, Piombino | Siderca | Tamsa | Tavsa | AlgomaTubes | NKKTubes | Silcotub Steel Shop- 2006, Silcotub-

#### 2.4 Gas consumption

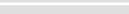


Methodology: measured in Km<sup>3</sup>/tn product. Calculated as m<sup>3</sup> of gas consumed for industrial purposes per ton of product. Gas consumed in power plants is not included.

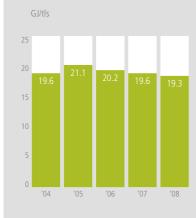
Facilities included: For recently acquired facilities, the year indicates when they were included:

Dalmine, Arcore, Costa Volpino, Sabbio, Piombino | Siderca | Tamsa | Tavsa | Confab Tubes | AlgomaTubes | NKKTubes | Siat VC - 2006 | Silcotub Steel Shop - 2006, Silcotub - 2005 | TuboCaribe - 2006 | Louisville, Cedar Springs - 2007.

# **Environment indicators**



2.5 Energy intensity



Methodology: measured in GJ/tn steel worldsteel Sectoral Approach methodology.

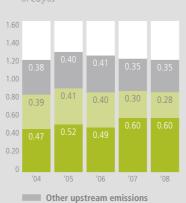
Boundaries: steel mill and other process on site including power

### Facilities included:

Siderca, Silcotub Steel Shop, Tamsa, Dalmine.

#### 2.6 CO<sub>2</sub> emissions





Methodology: measured in tn CO<sub>2</sub>/tn steel worldsteel Sectoral Approach methodology, including:

#### Direct emissions

Energy related upstream

### Other upstream emissions

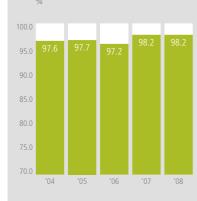
**Boundaries:** steel mill and other process on site including power plants.

#### Facilities included:

Siderca, Silcotub Steel Shop, Tamsa,

#### 2.7 Material efficiency

## %



Methodology: (liquid steel produced+ byproducts)/ (liquid steel produced+ byproducts+ waste). World Steel Association methodology

Waste: all material sent to landfill and incineration.

Byproduct: all material sent to reuse or recycling processes.

Boundaries: steel mill and other process on site including power

#### Facilities included:

Siderca, Silcotub Steel Shop, Tamsa, Dalmine.

#### 2.8 Lubricant and hydraulic oil use

Energy upstream emissions

Direct emissions



**Methodology:** measured as liters of oil consumed per tn of product. Hydraulic and lubricant oil use is

### Facilities included:

Dalmine, Arcore, Sabbio, Piombino | Siderca, Siat VC, Siat VA | Tamsa | TuboCaribe | Tavsa | Silcotub Steel Shop, Silcotub | Confab Tubes | Qingdao | AlgomaTubes | Conroe, Hickman, Counce and Louisville.

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b	We are committed to developing a long-term sustainable business by minimizing the environmental impact of our operations and by making the most efficient use of natural resources and energy.				

