Health, Safety and Environment Report 2011



## **QHSE 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 illness 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 subscaribes.

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

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Paolo Rocca Chief Executive Officer

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## Chairman's Letter

Safety and environmental performance is an important indicator of industrial efficiency and an essential basis for sustainable development. We operate in an industry where our customers demand from us the highest standards in our safety and environmental performance and, in the same way, we demand this of our suppliers.

This report, which is published annually, sets out, in a transparent manner, the results of our safety and environmental performance over the past five years and the principal actions we are taking to improve this performance in the coming years.

In 2011, we increased our production of steel pipe products by 11% compared to 2010. Similarly, we increased our production of crude steel by 6%. In particular, we increased our output of specialized, high-end products, which require more processing and handling than standard products.

Our safety indicators showed an average 15% improvement in 2011 compared to 2010, effectively reversing the deterioration in our indicators shown in 2010. We will continue to work to reduce accidents in our operations and are introducing a new Safe Hour program in all of our plants and yards around the world. I am optimistic that this new program will have an impact even during this current year and that our indicators will continue to improve.

Similarly, we are working to improve our environmental performance through reducing energy consumption and  $CO_2$  emissions per unit of production. We are active participants in a program promoted by the World Steel Association to disclose  $CO_2$  emissions data on an industry equivalent basis. Although our mix of products is becoming more complex, our environmental indicators showed a modest improvement in 2011. They reflect the progress we are making towards reducing our emissions and energy intensity as a result of an energy savings program we introduced two years ago.

Two years after Dalmine, our Italian mill, won an EU Motor Challenge Program award, our Silcotub mill in Romania won a similar award in 2011. This program recognizes industrial companies that have increased energy efficiency in their electric motor systems.

We pay close attention to finding opportunities to recycle the by-products of our operations. In 2011, after several years of close collaboration between the research, production and environmental management areas, we succeeded in having the electric arc furnace slag produced in our Dalmine mill classified under EU regulations not as waste but as a raw material that can be safely used as aggregate for road construction in lieu of sand and gravel. We are now marketing our Ecograin™ slag in European markets.

The quality and reliability of our products, and the efficiency with which we can integrate them with the operations of our customers, are at the core of our customer value proposition. Here, I would like to highlight the increasing recognition given to our Dopeless® technology, particularly in complex and environmentally sensitive oil and gas operating environments. This technology offers significant HSE and quantifiable cost benefits to customer operations. More than six million feet of pipe with Dopeless® connections have been installed worldwide. In 2011, sales of Dopeless® products increased by 45% compared to 2010 and we are confident that they will continue to grow strongly.

The health and safety of our employees and the protection of the environment are integrated priorities at Tenaris, along with the satisfaction of our customers and the development of the communities where we have our operations. I would like to thank our employees and contractors whose commitment and hard work have contributed to these results.

Sincerely,

Phulikory

Paolo Rocca



We are a leading supplier of tubes and related services for the world's energy industry. Our entire industrial network operates under a single Health, Safety and Environment management system.

## Company presentation

#### 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 seek to 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 a single Health, Safety and Environment (HSE) management system. Our Quality, Health, Safety and Environment Policy outlines our commitment to achieving the highest standards, and to continuously improving our performance.

DRI (Direct Reduction) mill
EAF (Electric Arc Furnace) steel shops
Seamless pipe rolling mills
Welded pipe mills
Heat treatment lines (29 in hot rolling mills)
Premium threading lines,

Our system 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.

#### Production

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

2010	2011
2800	2963
2399	2683
1002	1096
	1002

#### **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 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.

#### Our strategy in terms of Health, Safety and Environment

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, our management system follows the guidelines of international standards such as ISO 14000 and OHSAS 18000.

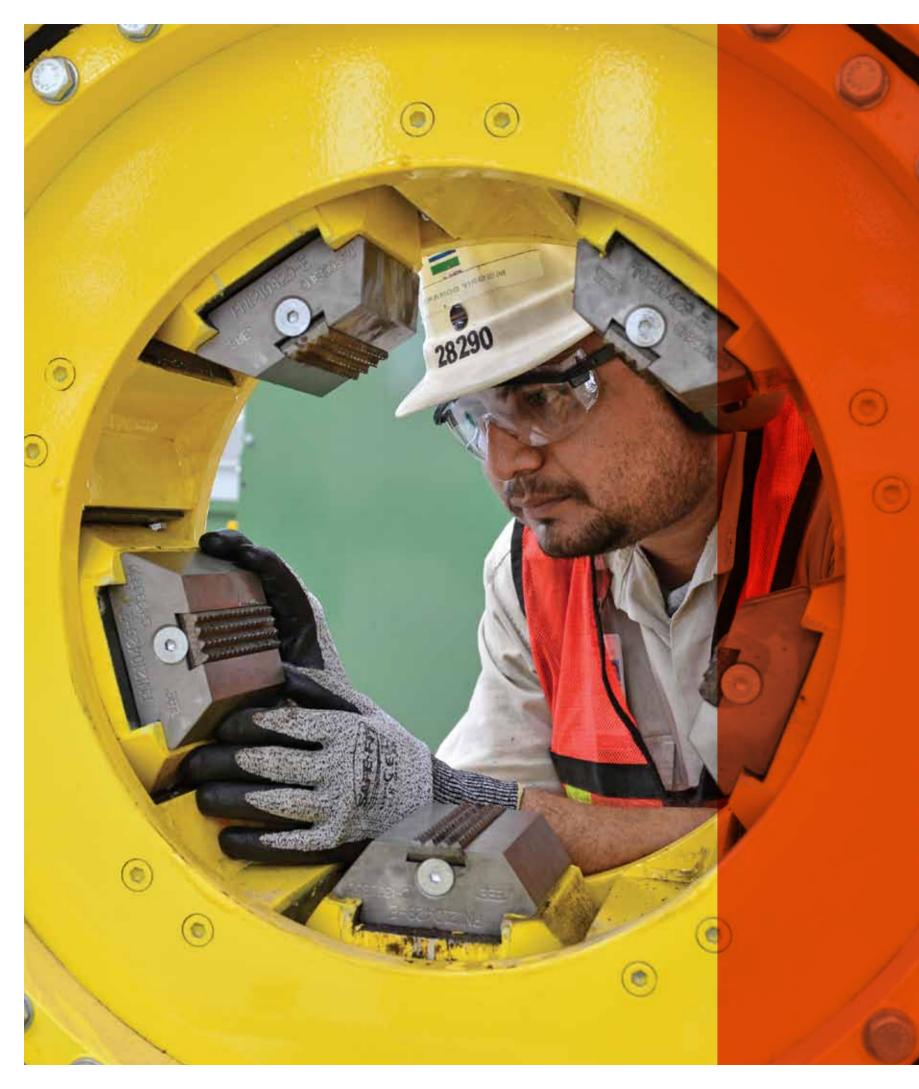
Our System is based on a set of corporate procedures providing the rules and guidelines for the implementation, maintenance and improvement of the HSE management system of our sites.

We have launched a program to certify all of our major sites with ISO 14001 and OH-SAS 18001 following the certification of the Health & Safety Management System that Italian sites already achieved. We aim to improve overall system performance across our value chain. Contractors and suppliers are engaged through different processes, including regional meetings to discuss objectives and action programs to implement. Cooperation is essential to achieving goals. We work closely with our customers to provide products and services specifically designed to satisfy increasing demands and we are convinced that our performance in this field is also key for differentiation.

This year we have introduced a number of safety initiatives to obtain a noticeable improvement in our performance. Most of them are intended to increase awareness, a positive attitude and a behavior change for achieving a safer work environment.

We are deeply engaged in multiple institutional activities at a local, regional and global level. Within the World Steel Association (worldsteel) Tenaris subscribed the Sustainability Policy and signed worldsteel's Sustainability Charter. We have also participated in the Climate Action Program, the most ambitious attempt by the entire steel industry to produce more sustainable steel in terms of  $CO_2$  emissions, since the beginning of the project. The company has been recognized for the third consecutive year within worldsteel's Climate Action Program for complying with the CO, emission reporting.

Our Energy Saving Project, launched in 2009, continues to advance with its implementation. Investments, process and equipment changes, training and communications programs and standardization practices are project activities, each one contributing to reach the objectives set. All this effort also resulted in the certification of the Energy Management System at Dalmine in Italy during 2010 within the UNI CEI EN 16000 standard.



Safety. Nothing is more important than the health and safety of everyone who works for us and uses our products. Our aim is to achieve a goal of zero accidents in all of our operations.

## Safety

#### Safety is our first priority

Our aim is to achieve a goal of zero accidents in all of our operations; we understand prevention is the tool for reaching our objective.

During this period our safety performance records have recovered the positive tendency we maintained until 2009 but we believe our improvement should be stronger. We have defined a safety plan for improving our safety performance over the next three years. We believe that the wide implementation of this agenda, covering different aspects of safety management, will help us to make more noticeable improvement in this field.

Our agenda for the coming years covers the completion of risk analysis and work instructions processes; the definition and dissemination of safety basic rules; the implementation of behavior-based safety programs which have already started in the USA; a "walk-around" program called "Safe Hour", launched by the end of 2011; the reinforcement of training for newcomers and workers rotating to other areas, which has shown a good result over the period; and deeper engagement of our subcontractors, among others. We are confident on the success of these measures, as they cover the whole process of safety management.

Twelve Basic Rules "to keep you on the safe side" were defined and a communication campaign was established for its dissemination across the entire company. These are universal rules for our activities, defined on the basis of the company's own experience in the field and the best practices identified in the industry. The implementation of a structured and standardized "On the Job" training for newcomers and rotating employees has showed very good results this year. During 2010, from all workers with less than one year of experience, 1.12 % had suffered an injury. That percentage was reduced by more than 30% in 2011 to stand at 0.77%.

The behavior-based safety program that was launched in August at Conroe, one of our main USA mills, to reduce human errors and correct wrong behavior is another of our key projects that has shown excellent results: since the project started, the injury frequency rate decreased by 56% and no lost time injuries have occurred. Siderca in Argentina is running the second pilot, which will allow us to verify its effectiveness over the next few months and plan the next steps.

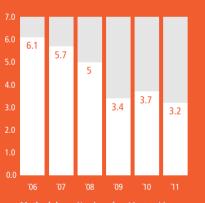
We seek to engage our suppliers to make them aware of the importance of safety management, our policies and the improvements we require from them. Tenaris is increasingly involved in a program of meetings covering every region. During 2011 we held such meetings in Argentina, Brazil, Colombia, Italy, Mexico and Romania. Around 700 people representing more than 250 companies participated in these meetings, which produced successful results shown both at the annual facility stops and during day-to-day work. Tenaris

### Indicators



and without lost days (not including First Aid) multiplied by 1,000,000 divided by man hours worked. Values refer to own personnel plus contractors from 2007 onwards.

Lost Time Injury Frequency rate



Methodology: Number of accidents with lost days multiplied by 1,000,000 divided by man hours worked. Values refer to own personnel plus contractors from 2007 onwards. The identification of unsafe situations is key to avoiding incidents. We continue to increase the number of sites that use our internal IT tool, and thus the number of observations detected, showing an increased awareness of the importance of issuing deviations as a way of preventing incidents.

Many of these observations have their origin in inspections performed by employees: line managers, supervisors, operators, etc. The number of inspections performed has increased significantly in recent years. For each finding identified, corrective and preventive actions are established. We continue to increase risky situations detected and inspections performed.

We register with satisfaction this year's improvement of our indicators. Both the Injury Frequency Rate and Lost Time Injury Frequency Rate decreased by 15% compared to 2010 results. Our Lost Time Injury Frequency Rate was even lower compared to 2009. The five-year trend shows a gradual improvement in both indicators.

The company suffered one fatality this year in Confab Equipamentos operations in Brazil. An employee died during the disassembly of a structure inside a customer's site. We deeply regret the loss of life of one of our collaborators.

We are profoundly convinced that we can do better in terms of improving our performance in safety, but we also believe that the measures we are taking will deliver the results we are expecting.

#### Health

The main objective of our occupational health program is to promote and maintain the physical and mental wellbeing of our employees. Besides legal obligations, we believe that keeping our workers healthy throughout their careers is first and foremost our duty, but also a value for the company.

Occupational health is the primary function of a healthcare program: most severe illnesses are revealed only after many years of hazard exposure. We are in the process of developing a stronger inter-relationship in the field of Occupational Hygiene by enhancing Industrial Hygiene. Based on accurate Risk Assessment, Industrial Hygiene processes can identify and measure health hazards and improve the necessary checks.

Periodical medical checks according to the specific risks at the workplace allow us to verify the effectiveness of the countermeasures in place and plan intervention when there is evidence of cumulative trauma or occupational illness. Periodical medical examinations can also inform us about the necessity to move workers to a task that is appropriate to their physical ability and mental state

In order to standardize the monitoring methodologies of workplace environments, define minimum requirements and achieve comparable data within all Tenaris sites, we have launched a two-year plan that includes some specific issues related to hazards such as noise, vibrations, chemicals, radiation and ergonomics.

### Indicators

**Observations evolution** 

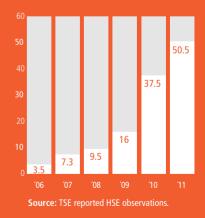
10<sup>3</sup> Observations



Source: TSE reported HSE observations. Our TSE software system was first introduced at Dalmine in 2003 and from then on its deployment has spread throughout the whole company. The software is used to manage most of the activities included in our management system. **TSE deployment at our facilities:** 2003 Dalmine | 2005 Sial | 2006 Confab 2007 AlgomaTubes, Siderca, Tamsa, Silcotub | 2008 TuboCaribe | 2009 all USA sites, Prudential, Metalmecánica | 2010 Some regional yards | 2011 Threading sites in Saudi Arabia and Scotland; Indonesia sites.

#### Inspections recorded evolution

10<sup>3</sup> Observations



### Tenaris Basic Safety Rules

Tenaris has launched these 12 Basic Safety Rules "to keep you on the safe side." They are universal rules for our activities, defined on the basis of our own experience in the field and the best practices identified in the industry.

**1** Make sure you are in an appropriate mental and physical condition when at work.

**2** Make sure you are adequately trained before performing any activity.

**3** Think about possible risks before starting any activity. Stop the work and seek your supervisor's advice if you notice an unforeseen or unacceptable risk.

**4** Follow the procedures and never take short-cuts.

**5** Wear the required PPE and never modify them.

**6** Use a fall protection system when working at height.

**7** Use correctly the appropriate tools and safety devices. Never modify or remove them.

**8** Use lock-outs and de-energize the machinery before working on equipment or entering restricted areas.

**9** Operate equipment and vehicles only if you hold the proper license and follow the traffic rules.

**10** Maintain a safe distance from moving vehicles.

**11** Never stand under or near a suspended load. When operating cranes, keep your eye on the load.

**12** Report all accidents, incidents, nearmisses and unsafe behavior/conditions.

### Safe Hour

Introduced by the end of 2011, the Safe Hour program consists of one-hour walks through the mills by middle and top management twice a week in order to engage in constructive conversations with the employees, identify safe and unsafe situations and raise awareness.



# **Environment.**

Our objective is to develop a business that is sustainable over the long term by minimizing the environmental impact of our operations and products, and by making the most efficient use of natural resources and energy.

## Environment

Our objective is to develop a sustainable business over the long term, as clearly stated in our QHSE Policy, through the minimization of the environmental impact of our operations and products, and by making the most efficient use of natural resources and energy.

One of our sites in USA, the Louisville Republic Conduit mill in Kentucky, received the 2011 Environmental Sustainability Award from the Kentucky Pollution Prevention center for ensuring the wellbeing of the company, employees and the community by identifying and implementing environmentrelated projects.

With regards to the new rolling mill operating in Mexico, we continue to work to obtain certification under the Leadership in Energy and Environmental Design (LEED) in the "New Construction" category under the United States Green Building Council (USGBC) standards.

#### **Energy management**

In 2009, Tenaris launched a global strategic project to increase its energy efficiency. The project, focusing on Tenaris's main mills, aims to achieve a 10% reduction in specific electricity consumption and 15% in specific natural gas, with respect to the July 2008-June 2009 baseline year.

Projects at each of our main sites include: assessment of energy consumption reduction possibilities; purchasing standardization; investment in energy efficiency and waste reduction; improvement of our processes using best available techniques; cultural change activities; and the implementation of a system called Tenaris Energy Monitor for tracking and controlling consumption of natural gas, electricity, water and compressed air. Many resources are invested to support the project through a dedicated local and corporate organizational structure. The assessments at the mills identified a number of improvement opportunities, which have been included in an investment Master Plan committing almost USD 85 million. By the end of 2011, this investment plan had advanced an estimated 25%, including projects related to furnaces revamping to increase efficiency, heat recovery, the use of high efficiency pumps, fans and compressors, electric arc and lighting changes, among others. New projects apply best available techniques to achieve high-energy efficiency, as implemented in the new mill in Tamsa.

A high-impact corporate training campaign is ongoing, including general and more detailed courses, with the objective of communicating the plan to all employees and promoting awareness in order to achieve the cultural change required. Up to now more than 3,100 training hours have been dedicated to this project in Argentina, Colombia, Brazil, Italy and Romania, together with 2,500 hours at the Dalmine mill alone, where the pilot project was launched.

This year we have changed our energy indicators to show an energy intensity indicator instead of electricity and natural gas consumption rates. Energy Intensity per ton of product is showing a decreasing rate in the last years. Tenaris

### Indicators

Energy Intensity Steel Mills GJ/tls 20 19.6 19.3 20.4 18.7 18.6



Methodology: measured in GJ/ ton steel worldsteel methodology. Boundaries: steel making mills, including all other processes on site. Facilities included: Siderca, Silcotub Steel Shop, Tamsa, Dalmine.

#### **Energy Intensity Tenaris sites**



**Methodology:** measured in GJ/ ton product based on electricity and gas consumption at each site.

production sites.

Sociation Sicola Siderca, Silcotub Steel Shop, Tamsa, Dalmine. Siat VA; Siat VC; Confab tubes, Hickman, Conroe, Republic Conduit, Algoma, Prudential, Tubocaribe, Nkk Tubes, Arcore, Costa Volpino, Sabbio, Piombino, Silcotub This indicator is sensitive to production mix and levels and to product type, so its value has to be analyzed considering production volumes. The 2009 global crisis had a negative impact on our production efficiency and thus on our environmental performance indicators. Activity increased during 2010, but with significant differences between our mills. The same pattern applies to 2011. For example, differing production mixes related to the amount of heat-treated pipes and activity levels had an influence on the energy intensity results at each site as well as on the whole Tenaris performance level.

Nevertheless, our energy intensity in the steel making sites more than reversed the 2009 increase and continues with a decreasing trend.

Dalmine hosted the first Tenaris Energy Convention in May 2011. The meeting served the goal of sharing experiences and best practices among the different mills in order to highlight opportunities and set targets for the coming periods. We believe that through cultural change and the adoption of common criteria throughout Tenaris, results will be achieved and consolidated

In 2011, Silcotub won the Motor Challenge Program Award for its Energy Efficiency Projects, an initiative promoted by the European Commission. Dalmine had obtained the same award two years earlier.

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#### **Climate Change**

We are committed to improving our performance and lowering our CO<sub>2</sub> emissions per ton, seeking any possible upgrade at every step of the process, both direct and indirect.

The worldsteel CO<sub>2</sub> emissions data collection program was launched in April 2008. A common methodology has been agreed to measure CO<sub>2</sub> per ton of steel. The program measures the current level of emissions from the production of steel worldwide. Tenaris actively participates in this initiative for the steel industry and has received recognition for the third consecutive year under the worldsteel Climate Action program for reporting the emissions of all our facilities covered by the scope of the program. Validation has already been carried out by an independent expert group within worldsteel. Tenaris is committed to continuing to participate and work to reduce its CO<sub>2</sub> emissions.

Our efforts to maximize energy, raw materials, waste and by-product efficiency contribute to minimizing our environmental footprint and particularly our CO, emission level.

All our Italian and Romanian sites operating under the EU-ETS scheme had lower CO<sub>2</sub> emissions than the quota granted. For this reason, they were not required to purchase additional quota or pay penalties, and we have already submitted our forecasts for the next phase to the local authorities, as required by applicable regulations. Tenaris tracks  $CO_2$  emissions from all its industrial sites, applying similar methodology it to all its tube-producing facilities.

During 2011, our  $CO_2$  emissions continued the decreasing trend we saw in 2010.

#### Air emissions

Steelmaking, seamless pipe hot rolling and heat treatment are processes that produce relevant emissions in terms of particulate material, nitrogen dioxides and a less relevant quantity of sulfur oxides. Also, finishing processes may involve volatile organic compounds (VOC) emissions when varnish is applied. Many of our coating lines use low solvent or water-based products to reduce emissions. Coating materials substitution at our biggest US site in 2011 led to a reduction of 7% in VOC emitted per ton of pipe and almost a 50% reduction in paint-related waste.

### Investments for improving our emissions in steel processes

In all of our steel mills, we are in the process of improving our dust emissions control systems. Tenaris standards, mills expansions and more stringent applicable legal requirements are the main drivers for these investments.

Siderca, our mill in Argentina, continues with its four-year plan for the improvement of the off-gas emissions treatment system. By February 2012 the new bag house for secondary emission control will be operating, completing a plan that involved an investment of USD 33 million.



In Tamsa, Mexico, a project is ongoing for expanding the capacity of the off-gas control system, following a production capacity expansion project. It should be ending by mid-2012, involving a budget of USD 28 million.

In Silcotub, Romania, an important investment for reducing diffuse emissions is already being executed as a first step. The whole project requires an investment around USD 11 million.

Dalmine, Italy, implemented a dioxins abatement system for primary dust emissions from the electric arc furnace. The methodology used is a powdered activated carbon injection system, leading to full compliance with European air emissions regulations and improving environmental performance.

#### **Recycling steel**

Tenaris steel production is based on arc furnaces raw material in combination with mineral-based metallic charge. One of our mills, Siderca in Argentina, also produces the direct-reduced iron then used in our steel mill. Both the electric arc furnace and the gas-based direct reduction processes are efficient ways of producing steel with lower rates of CO, emissions.

Scrap used in our mills is recycled from external and internal sources. Even though the amount of scrap we use varies annually for market reasons, it continues to represent over 60% of our total metallic charge since 2007. Scrap recycling is one of our ways to minimize the environmental footprint of our operations.

### Indicators

**CO<sub>2</sub> Emission steel mills** 



Methodology: measured in ton CO<sub>2</sub>/ ton steel worldsteel methodology. Direct emissions: CO<sub>2</sub> emissions related to steel production and other processes included

at the site.

related to electricity production, using a world average emission factor of CO<sub>2</sub>/MWh generated. Indirect emissions: other upstream CO<sub>2</sub> emissions related to production of raw materials and fuels.

Facilities included: Siderca, Silcotub Stee Shop, Tamsa, Dalmine.

#### Tenaris CO, emissions

ton CO<sub>2</sub> / ton product



Methodology: measured in ton CO<sub>2</sub>/ ton product. Direct emissions: CO2 emissions related to steel production and/or other processes included at the site

Purchased electricity: upstream CO2 emissions related to electricity production, using a world average emission factor of CO2/MWh generated. Boundaries: All tube and steel producing sites For sites without steel making processes, gas and electricity consumption contributes to the indicator Facilities included: Siderca, Silcotub Steel Shop, Tamsa, Dalmine. Siat VA; Siat VC; Confab tubes, Hickman, Conroe, Republic Conduit, Algoma, Prudential, Tubocaribe, Nkk Tubes, Arcore, Costa Volpino, Sabbio, Piombino, Silcotub

### **Climate Change**

• In 2009, we launched a global strategic project to increase our energy efficiency. The project, which was implemented at Tenaris's main mills, aims to achieve a 10% reduction in specific electricity consumption and 15% in specific natural gas, with respect to the July 2008-June 2009 baseline year.

• We actively participate in an initiative launched by the World Steel Association (worldsteel) in April 2008 to measure  $CO_2$  emissions per ton of steel under a common methodology. We have received recognition for the third consecutive year under the worldsteel Climate Action program for reporting the emissions of all our facilities.

• During 2011, our CO<sub>2</sub> emissions continued the decreasing trend of 2010.

#### Waste, by-product and materials 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 waste as possible, and to seek new ways of reducing the generation and disposal of waste. Recycling helps to reduce land disposal and CO<sub>2</sub> emissions, bringing about a more sustainable use of natural resources.

We are investing in Research & Development (R&D) projects to find new opportunities to recycle our by-products, as we understand that these issues will become even more critical in the near future.

Ecograin<sup>™</sup> is a successful example of this joint effort in Dalmine. After a three-year long project, Dalmine's EAF slag is no longer classified as waste, according to EU regulations, but assimilated to raw materials. Ecograin<sup>™</sup> can be safely used as aggregate for road construction, for concrete and for bituminous mixtures, replacing the use of natural sand and gravel.

Of all by-products, slag has by far the highest production volumes. Based on production levels, we then have steel scales from the hot rolling process that are mostly recycled in the cement industry or within the steel industry through sinter processes. Since 2009, we have maintained a waste recycling indicator at all sites, with the objective of encouraging this practice. Tenaris figures concerning the re-use of waste and by-products are high, and for 2011 in particular, there is an evident increase in rates for by-product recycling.

We also use the material efficiency indicator calculated using worldsteel methodology, which is applied to steelmaking sites. When considering these mills we can see that the recycling rate is very close to 100% as by-products in steelmaking processes are predominantly re-used or recycled in different processes. During 2010 and 2011 we have seen a slight improvement of material efficiency. Tamsa in Mexico continues with the deactivation of an internal landfill used as intermediate storage, sending a significant amount of waste to an external landfill.

Our facilities use significant quantities of lubricant and hydraulic oils. Specific consumption of these substances has been decreasing over recent years.

### Indicators

Water abstraction

in m<sup>3</sup> used from any source per ton of product produced. Mills considered may not be the same in all years. Siderca is not included **Facilities included**: Silcotub Steel Shop, Tamsa, Dalmine. Tubocaribe, Siat VA, Siat VC, Confab Tubos, NKK tubes, Algoma, Prudential, Hickman, Conroe, Republic Conduit, Silcotub.

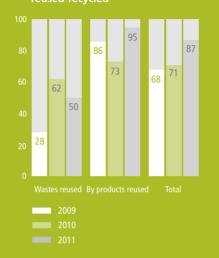
#### **Tenaris Recycled Steel Use**

% scrap charged



Methodology: Values are calculated as tons of scrap present in the metallic charge. Facilities included: Siderca, Silcotub Steel Shop, Tamsa, Dalmine.

## Wastes and By-products reused-recycled



Methodology: Waste: includes all waste pro duced at the site, including hazardous waste. For reused/recycled, we include any internal or external process for reusing or recycling the material.

the material. **By-products:** includes scale mill, slag, DRI fines and sludge and electric arc furnace dusts. Internal scrap is not included. All percentages are calculated comparing tons reused/ recycled to generated ones in the same categories and sites.

same categories and sites. Facilities included: Siderca, Silcotub Steel Shop, Tamsa, Dalmine Siat VA, Siat VC, Confab, Hickman, Conroe, Republic Conduit, Mc Carty, Texas Arai, Algoma, Prudential, Tubocaribe, NKKTubes.

#### **Tenaris Material Efficiency**



Methodology: (liquid steel produced+ by-products)/ (liquid steel produced+ byproducts+ waste). worldsteel methodology. Waste: all material sent to landfill and

By-product: all material sent to reuse or recycling processes. Boundaries: steel mill and other process on site including power plants. Facilities included: Siderca, Silcotub Steel

#### Water Management

In our steelmaking and seamless tube production facilities, water management is a significant issue in terms of intake and discharge. Water is mainly used for cooling processes in the steelmaking mills and seamless tube steel mills; welded pipe facilities have a much lower use of water.

Tenaris sites have different industrial water systems, which result in real differences in the amount of water abstracted per ton of product produced, absolute cubic meters consumed and also the source of the water used. The situation of each site depends on the amount and quality of water available and on local regulations.

We understand that water availability is a key issue and another of our challenges for the future. With this in mind, as well as the conviction that there is room for improvement regarding water management, by the end of 2011 we launched a survey within all of our sites, asking for an evaluation of internal water usage and quality, in order to identify improvement opportunities. Our main mill in Argentina has by far the largest abstraction of surface water since it was designed, based on local water availability, with an open water system for mainly cooling purposes in the steel and rolling processes. Water used is discharged after treatment to the Parana de las Palmas River. The mill is designing a program for improving its water circuits. In 2011 the average rate of water intake for our main mills excluding Siderca was 3.7 m<sup>3</sup> per ton of product produced. This value reaches an average of  $17 \text{ m}^3/\text{ ton}$ product if Siderca is included.

As another example of our activities in this field, our seamless pipes mill in Canada are implementing an upgrade of our water system, which will bring us a decrease in the mill's water discharge of about 50%.

### Our products and services, looking at the downstream with a life cycle approach

The quality and reliability of our products and the efficiency with which we can integrate them with the operations of our customers are at the core of our customer value proposition. We aim to develop products that can make a measurable difference to the operations of our customers through their performance in complex environments.

#### Top 100 most innovative company

In 2011, Tenaris was the only tube supplier for the Oil & Gas industry to be ranked on the list published by Forbes.

This recognition is a demonstration of Tenaris's commitment to research and development. We constantly look to anticipate customer needs and address the demands of the energy industry with outstanding products and services.

#### Dopeless® technology – an industry-leading solution with tangible HSE benefits for complex and environmentally sensitive oil and gas operations

Tenaris pioneered the manufacturing of dope-free connections when it introduced its Dopeless® technology in the North Sea in 2003. Since then, the HSE and operational benefits of this innovative technology have become increasingly apparent and relevant. Today, more than six million feet of pipes with Dopeless® technology have been installed worldwide and sales continue to grow rapidly. It is being used in many different operating environments, including offshore, arctic, jungle and desert areas and in operations where operating efficiency is critical. Dopeless® technology is a dry, multi-functional coating, which is applied in the controlled, industrial environment of our mills. As well as ensuring consistent quality, operational reliability and enhanced corrosion protection, the use of Dopeless® connections means that operators no longer have to carry out dope cleaning and application processes in the field. This provides significant HSE benefits, particularly in complex and environmentally sensitive operating environments.

With this solution, connections become rig-ready, avoiding the possibility of operational problems associated with over-running compound, providing ease of handling, preparation and installation to reduce risks and costs. It also guarantees the appropriate amount of lubricant and ensures the consistency of the coating and connection performance, lasting throughout the string's entire life cycle.

Supported by an integrated global network of field services, repair shops and technical support teams, Dopeless® technology is currently the leading dope-free solution for demanding onshore and offshore oil and gas operations. With more than eight years of field experience and successful performance in difficult operating environments all over the world, Dopeless® technology is set to make a difference to the industry we serve.

### Indicators

**Oil Consumption** 

Its / ton product



Methodology: Lubricant and Hydraulic oil used in liters per ton of product. Mills considered may not be the same in all years. Facilities included: Dalmine, Siderca, Silcotub steel mill, Tamsa Arcore, Sabbio, Costa Volpino, Piombino, Siat VA, Siat VC, Tubocaribe, Silcotub, Confab tubes, Prudential, Algoma, Conroe, Hickman, Republic Conduit

### **Product quality** and reliability

We aim to develop products that can make a measurable difference to the operations of our customers through their performance in complex environments.

Dopeless<sup>®</sup> technology is a dry, multifunctional coating that provides significant HSE benefits, particularly in complex and environmentally sensitive operating environments.

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