

# 2011 ENVIRONMENTAL REPORT



## GENERAL INFORMATION

- 7 Letter to stakeholders
- 8 Mission Vision Values
- 9 Approach to sustainable development
- 10 Cementir Group at a glance
- 11 Key indicators
- 13 Introduction

## INTRODUCTION TO THE GROUP

- 17 The Cementir Group
- 21 Governance
- 26 Highlights
- 29 2011 Results

## ENVIRONMENTAL PERFORMANCE

- 32 The cement production cycle and environmental impact
- 41 The ready-mixed concrete production cycle and environmental impact

## PEOPLE, ENVIRONMENT AND COMMUNITIES

- 46 Health and safety
- 51 People, environment and communities

54 Glossary



# 1

## GENERAL INFORMATION

- 7 Letter to stakeholders
- 8 Mission Vision Values
- 9 Approach to sustainable development
- 10 Cementir Group at a glance
- 11 Key indicators
- 13 Introduction



#### LETTER TO STAKEHOLDERS

Cementir Holding's 2011 Environmental Report describes the activities and efforts related to the environment, energy resources, health and safety in the management of our business, through an analysis of the data from countries where we operate in the world. The reporting process also sheds light on specific projects that the Group companies are developing in areas where they operate, which play an important role in both the communities and with our stakeholders.

The relationship with the territory is one of the crucial aspects of our work, because our business has an inevitable impact on the areas where we are located. And that's why we, at Cementir, pay particular attention to issues related to climate change and to emissions into the atmosphere. During 2011 we participated for the first time to the "Carbon Disclosure Project", involving more than 550 institutional investors with over EUR 50 billion of capitalization. The aim of the project is to encourage companies to monitor and report back on their emissions performance and, consequently, to evaluate their impact on climate change.

In December 2011, at the UN Conference of Durban, representatives of more than 190 countries reached an agreement to drastically reduce CO<sub>2</sub> emissions by 2015. On the other hand, the action plan for climate and renewable resources in the European Union had already identified the fundamental goal of mitigating climate change through the implementation of sustainable energy policies. The identified goal is to reduce CO<sub>2</sub> emissions by 20% within 2020, thanks to a 20% increase in energy efficiency and the availability of renewable energy sources.

The Cementir Group has been moving in this direction for quite some time now: a concrete example is our Taranto plant in the Puglia region, which in coming years will undergo minor technological revolution to streamline the production process and significantly improve energetic and environmental performance.

Also regarding energy performance, in 2011, in the Aalborg plant in Denmark, we conducted a series of interventions and investments that reduced energy consumption during the production process by 4,058 MWh, corresponding to the annual electricity consumption of 1000 households. Furthermore, the data presented in this report demonstrate how, compared to the previous year, we have increased the use of alternative fuels, consequently helping to reduce the exploitation of fossil fuels.

In terms of health and safety of the people working for the Cementir Group, the data from the 2011 report demonstrate a significant decrease of both the total number of workplace accidents and their average duration and severity. These positive indicators testify the efforts and investments we have made, and will continue to make, to ensure the health and safety of workers.

We at Cementir believe that knowing how to manage emissions, protect our business from the impact caused by climate change and protect the health and safety of workers are business strategies that create value for shareholders over the long term. Combining our work with the territory and with sustainable business models is the kind of future we are striving for.

**Francesco Caltagirone Jr.**  
Chairman of the Board of Directors

## MISSION VISION VALUES

### MISSION

We aspire to be agents of integrated and sustainable growth in order to become leaders in the markets where we currently operate and to access new businesses/markets leveraging on our expertise, our Clients and environmental care.

### VISION

To be a dynamic and accountable Company which creates value for Stockholders, Clients and Employees, increasing our role in the emerging markets as an integrated Company respectful of local peculiarities.

### VALUES

#### Grow with passion for effectiveness

We have passion for our business and work to drive our Group, leveraging on continuous effective improvement, for a growth that is sustainable in the long term and able to guarantee profitable returns on invested capitals.

#### Integrated diversity

We are an integrated Group that leverages and increases the value of our local peculiarities where people constantly support their colleagues.

#### Act concrete simplicity

We want to simplify the “day by day” activities through the “operation excellence” approach based on facts, in order to avoid organizational constraints and to simplify the whole problem solving process.

#### Rigorous flexibility

We are able to use professional discipline and lead change management to face business challenges.

#### Accountability for the future

We feel to be part and contributor of a global project and have the competencies of decision making, delivery and accountability which are able to support individual and Group growth and the value generated for our Customers.

## APPROACH TO SUSTAINABLE DEVELOPMENT

For our Group environmental performance is a crucial aspect of our business, which allows us to evaluate the way and quality with which we operate.

This is why Cementir places considerable attention on research, innovation and the introduction of an organizational approach that makes sustainable development one of its main points of interest.

In fact, the Group’s management is well aware that in order to continue operating in this industry, we must deal with the fact that we live in a world of limited resources, where an ethically-sustainable approach is required.

### VISION

Cementir Holding seeks to achieve sustainable development by continually improving its financial, environmental and social performance.

### GUIDELINES

Cementir Holding is committed to achieving financial, social and environmental development by:

- complying with applicable legislation and local regulatory standards;
- respecting human resources by ensuring a healthy, safe workplace;
- promoting and adopting clean technologies;
- reducing the environmental impact of individual products;
- developing eco-sustainable products;
- setting improvement targets;
- involving and continually training employees to achieve targets;
- increasing transparency and promoting a dialogue with customers, suppliers, employees, local communities and shareholders.

To achieve the goals stated in the above guidelines, Cementir Holding is committed to:

- developing, implementing and maintaining an environmental management system in all the Group’s manufacturing plants;
- sharing its sustainable development policy, objectives and action plans by publishing a periodic Report;
- formulating and using environmental performance indicators to monitor the extent to which the set targets have been achieved;
- improving the environmental performance of plants through:
  - controlling and reducing all types of emissions;
  - controlling energy consumption;
  - engaging in technological research focusing on the use of alternative fuels in manufacturing, thus reducing the consumption of fossil fuels;
  - controlling and reducing the consumption of water and controlling the drainage of waste water;
  - controlling noise emissions;
  - preventing and responding to emergencies that have an environmental impact.
- preventing accidents and injuries through workplace studies and verification, health and safety surveys and action plans.



**CEMENTIR GROUP AT A GLANCE**

Cementir is an international group that produces grey cement, white cement, ready-mixed concrete and aggregates. The Company is listed on the Italian Stock Exchange in the Star segment and is controlled by the Caltagirone Group. The Group owns facilities in Italy, Turkey, Denmark, Egypt, Malaysia, China and the United States, and cement distribution centres in Denmark, Italy, USA, Iceland, Norway, Poland, the Netherlands, UK and Germany.

|   |  |
|---|--|
| <p><b>Denmark</b><br/>Grey cement sales: 1.31 million t<br/>White cement sales: 0.51 million t<br/>Ready-mixed concrete sales: 0.99 million m<sup>3</sup><br/>Aggregates sales: 0.91 million t<br/>Cement plants: 1 (7 kilns)<br/>Ready-mixed concrete plants: 42<br/>Distribution centres: 9</p> | <p><b>USA</b><br/>Cement plants: 2<br/>(in Joint Venture at 24.5% with Heidelberg and Cemex)<br/>Cement products plants: 1<br/>Distribution centres: 1</p> |
| <p><b>Norway</b><br/>Ready-mixed concrete sales: 0.85 million m<sup>3</sup><br/>Ready-mixed concrete plants: 30<br/>Distribution centres: 1</p>   | <p><b>Malaysia</b><br/>White cement sales: 0.2 million t<br/>Cement plants: 1</p>  |
| <p><b>Sweden</b><br/>Ready-mixed concrete sales: 0.2 million m<sup>3</sup><br/>Aggregates sales: 3.04 million t<br/>Ready-mixed concrete plants: 10</p>   | <p><b>China</b><br/>White cement sales: 0.45 million t<br/>Cement plants: 1</p>  |
| <p><b>Turkey</b><br/>Grey cement sales: 4.7 million t<br/>Ready-mixed concrete sales: 1.5 million m<sup>3</sup><br/>Cement plants: 4<br/>Ready-mixed concrete plants: 15</p>  | <p><b>Portugal</b><br/>Cement products plants: 5<br/>(in Joint Venture at 50% with Secil)</p>  |
| <p><b>Italy</b><br/>Grey cement sales: 2.4 million t<br/>Ready-mixed concrete sales: 0.26 million m<sup>3</sup><br/>Cement plants: 4<br/>Ready-mixed concrete plants: 18<br/>Distribution centres: 3</p>  | <p><b>UK</b><br/>Distribution centres: 1</p>   |
| <p><b>Egypt</b><br/>White cement sales: 0.84 million t<br/>Cement plants: 1</p>   | <p><b>Germany</b><br/>Distribution centres: 1</p>  |
|   | <p><b>Iceland</b><br/>Distribution centres: 1</p>  |
|   | <p><b>Poland</b><br/>Distribution centres: 1</p>   |
|   | <p><b>Netherlands</b><br/>Distribution centres: 1</p>  |

**KEY INDICATORS**

| Cementir Group  | 2011   | 2010   | 2009  | Unit of measurement      |
|---|--------|--------|-------|--------------------------|
| <b>Indicators</b>   |        |        |       |                          |
| Grey and white cement produced  | 10,468 | 10,013 | 9,641 | metric tons/thousands    |
| Ready-mixed concrete sold   | 3,843  | 3,185  | 3,100 | m <sup>3</sup> thousands |
| Revenues  | 933    | 842    | 822   | eur/millions             |
| Net profit  | 3      | 9      | 30    | eur/millions             |
| Capital expenditure of property, plants and equipment and intangible assets | 79     | 63     | 98    | eur/millions             |
| Workforce   | 3,200  | 3,289  | 3,439 | number                   |

**CEMENT PRODUCTION FACILITIES IN ITALY, DENMARK, TURKEY, EGYPT, MALAYSIA AND CHINA**

| Environment  | 2011  | 2010  | 2009  | Unit of measurement |
|--|-------|-------|-------|---------------------|
| CO <sub>2</sub> emissions per metric ton of Total Cement Equivalent (t/tTCE) | 0.74  | 0.70  | 0.68  | t/tTCE              |
| Alternative raw materials  | 6.51  | 6.27  | 6.20  | %                   |
| Electricity consumed   | 4,515 | 4,260 | 4,245 | TJ                  |
| Direct energy consumed from alternative sources                              | 6.13  | 5.28  | 6.43  | %                   |
| ISO 14001 Certifications   | 8     | 6     | 6     | number              |

**READY-MIXED CONCRETE FACILITIES IN DENMARK, NORWAY, TURKEY AND ITALY**

| Environment                 | 2011    | 2010    | 2009    | Unit of measurement |
|-----------------------------|---------|---------|---------|---------------------|
| Raw materials               | 7.8     | 6.3     | 6.0     | tons/million        |
| % Alternative raw materials | 1.6     | 1.5     | 1.6     | %                   |
| Water consumption           | 588,051 | 549,471 | 629,667 | m <sup>3</sup>      |
| % Recycled water            | 22.9    | 13.0    | 11.2    | %                   |

| Cementir Group                     | 2011 | 2010 | 2009 | Unit of measurement |
|------------------------------------|------|------|------|---------------------|
| <b>Health &amp; Safety</b>         |      |      |      |                     |
| Frequency rate                     | 17.6 | 18.9 | 19.8 |                     |
| Severity rate                      | 0.31 | 0.37 | 0.47 |                     |
| Fatal accidents                    | 0    | 0    | 0    | number              |
| Hours of HSE training per employee | 5.2  | 6.8  | 8.0  | hours/employee      |
| HSE investments                    | 12.3 | 12.6 | 8.2  | eur/millions        |
| OHSAS 18001 Certifications         | 5    | 4    | 4    | number              |



## INTRODUCTION

Through this Environmental Report, the Cementir Group seeks to provide a clear, transparent and immediate useful overview of its most important environmental and social initiatives pursued, and an analysis of the environmental impact of its operations performed over the course of 2011.

The document is addressed to all stakeholders that directly or indirectly interact with the Group.

The report is divided into three parts:

- Introduction to the Group: contains a profile of the Group, its governance, institutional structure and economic performance for the year.
- Environmental performance: this section contains the assessment of the primary environmental impact of the activities carried out, as well as the precise measurement of the main performance indicators for all the cement production facilities in Italy, Turkey, Denmark, Egypt, Malaysia and China and for all the ready-mixed concrete production facilities in Italy, Turkey, Denmark and Norway.
- Activities for the environment and safety: presentations of projects and activities undertaken for the environment, safety and for the community where the Cementir Group operates.

Specific projects undertaken by the Cementir Holding Group in order to improve its environmental and health and safety performances are included in each of the three parts of the report.





# 2

## INTRODUCTION TO THE GROUP

- 17 The Cementir Group
- 21 Governance
- 26 Highlights
- 29 2011 Results



THE CEMENTIR GROUP

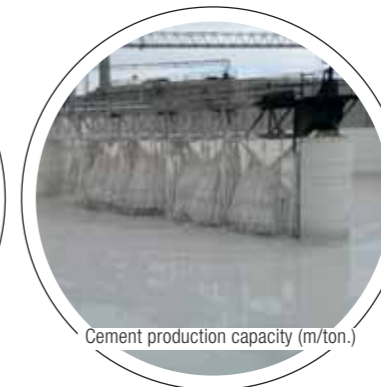
Cementir Holding manufactures and distributes white and grey cement, aggregates, ready-mixed concrete and concrete products in many countries worldwide. With operations in 15 countries and a work force of 3,200 employees, Cementir Holding is a world leader in the manufacture of white cement; it is the first Danish grey cement producer, the second producer in Scandinavia, the third in Turkey and the fourth in Italy, besides being the leading ready-mixed producer in Scandinavia.

14



Cement plants

14.8



Cement production capacity (m/ton.)

3.8



Aggregates sold (m/ton.)

115



Ready-mixed concrete plants

3



Research centres and laboratories

3,200



Employees





GREENLAND

GREENLAND



INTERNATIONAL PRESENCE

|                             |                            |                              |     |
|-----------------------------|----------------------------|------------------------------|-----|
| Grey cement sales:          | 8.4 million t              | Cement plants:               | 14  |
| White cement sales:         | 2 million t                | Ready-mixed concrete plants: | 115 |
| Ready-mixed concrete sales: | 3.8 million m <sup>3</sup> | Distribution centres:        | 19  |
| Aggregate sales:            | 3.8 million t              | Cement product plants:       | 6   |

|   |   |
|---|---|
| <b>Denmark</b><br>Grey cement sales: 1.31 million t<br>White cement sales: 0.51 million t<br>Ready-mixed concrete sales: 0.99 million m <sup>3</sup><br>Aggregate sales: 0.91 million t<br>Cement plants: 1 (7 kilns)<br>Ready-mixed concrete plants: 42<br>Distribution centres: 9 | <b>Turkey</b><br>Grey cement sales: 4.7 million t<br>Ready-mixed concrete sales: 1.5 million m <sup>3</sup><br>Cement plants: 4<br>Ready-mixed concrete plants: 15                            |
| <b>Norway</b><br>Ready-mixed concrete sales: 0.85 million m <sup>3</sup><br>Ready-mixed concrete plants: 30<br>Distribution centres: 1  | <b>Italy</b><br>Grey cement sales: 2.4 million t<br>Ready-mixed concrete sales: 0.26 million m <sup>3</sup><br>Cement plants: 4<br>Ready-mixed concrete plants: 18<br>Distribution centres: 3 |
| <b>Sweden</b><br>Ready-mixed concrete sales: 0.2 million m <sup>3</sup><br>Aggregate sales: 3.04 million t<br>Ready-mixed concrete plants: 10   |   |

|  |   |
|--|---|
| <b>Egypt</b><br>White cement sales: 0.84 million t<br>Cement plants: 1   | <b>Portugal</b><br>Cement product plants: 5<br>(in Joint Venture at 50% with Secil) |
| <b>USA</b><br>Cement plants: 2<br>(in Joint Venture at 24.5% with Heidelberg and Cemex)<br>Cement product plants: 1<br>Distribution centres: 1 | <b>UK</b><br>Distribution centres: 1  |
| <b>Malaysia</b><br>White cement sales: 0.2 million t<br>Cement plants: 1   | <b>Germany</b><br>Distribution centres: 1   |
| <b>China</b><br>White cement sales: 0.45 million t<br>Cement plants: 1   | <b>Iceland</b><br>Distribution centres: 1   |
|  | <b>Poland</b><br>Distribution centres: 1  |
|  | <b>Netherlands</b><br>Distribution centres: 1                                       |

**DIRECTORS, OFFICERS AND AUDITORS****BOARD OF DIRECTORS****Chairman**

Francesco Caltagirone Jr.

**Vice Chairman**

Carlo Carlevaris

**Directors**

Alessandro Caltagirone

Azzurra Caltagirone

Edoardo Caltagirone

Saverio Caltagirone

Flavio Cattaneo

Mario Ciliberto

Massimo Confortini

Fabio Corsico

Mario Delfini

Alfio Marchini

Walter Montevocchi

Riccardo Nicolini

Enrico Vitali

**BOARD OF AUDITORS****Chairman**

Claudio Bianchi

**Standing Members**

Federico Malorni

Giampiero Tasco

**INTERNAL CONTROL COMMITTEE**

Massimo Confortini

Flavio Cattaneo

Enrico Vitali

**MANAGER RESPONSIBLE  
FOR FINANCIAL REPORTS**

Oprandino Arrivabene

**SUPERVISORY BODY (D.Lgs. 231/2001)**

Mario Venezia

Francesco Paolucci

**GOVERNANCE**

The Corporate Governance structure adopted by the Company is based on the recommendations and standards indicated in the “*Codice di Autodisciplina della Borsa Italiana delle Società Quotate*” (hereinafter the “Corporate Governance Code”) which the Company complies with.

The Company has adopted a traditional administration and control model characterized by a Shareholders’ Meeting, Board of Directors and a Board of Statutory Auditors. The Corporate Governance system is based on the Board of Directors (as the highest body responsible for managing the Company in the interests of the shareholders) playing an essential role, and on transparency in the Company’s decision-making process and an effective system of internal controls.

**THE BOARD OF DIRECTORS**

The Board of Directors of Cementir Holding SpA has been appointed by the shareholders on 21.04.2009 for a term of three years (2009-2011), which shall expire on the date of the Shareholders’ Meeting called to approve the financial statements as of 31.12.2011.

The Board is currently composed by fifteen members, the majority of which are non-executive, four are independent directors in accordance with the Corporate Governance Code.

The Chairman of the Board is vested with all powers of ordinary and extraordinary administration, with the exception of those that, by law or the Company’s bylaws, are reserved for the shareholders and for the Board of Directors; in the event of the Chairman’s absence or other impediment the Vice Chairman shall exercise such powers.

**THE BOARD OF AUDITORS**

The Board of Auditors monitors compliance with the law and the Company’s bylaws, as well as compliance with the principles of sound administration in carrying out the Company’s business and verifies the adequacy of the Company’s organization, its internal control system, and its system of administration and accounting as well as the reliability of the accounting records in properly representing the current state of affairs.

The Board of Auditors consists of three standing auditors and three alternate auditors elected on the basis of slates submitted by shareholders, all with prescribed requisite for independence and honourability and with advanced and specific professional skills.

**OTHER BOARDS OF COMMITTEES**

Other Boards of Committees are: the Executive Committee, the Internal Control Committee and the Remuneration Committee.

The Executive Committee, composed of Chairman and two executive directors, has all powers exercised by the Board of Directors, except those exclusively attributed to the Board itself by law or the Company bylaws.

The Internal Control Committee is composed by three independent Directors.

The Remuneration Committee, composed by a majority of independent Directors, makes proposal to the Board of Directors for the remuneration of the executive directors and/or those covering specific roles including through the use of instruments for incentives related to the economic results of the company and/or the reaching of specific objectives which may include stock option plans. They also make proposals, on the indications of the executive directors, for the determination of the criteria for the remuneration of the senior management of the company, while maintaining responsibility for the definition and remuneration of senior management.

The governance model of Cementir Holding SpA also provides for a Manager responsible for the Company's financial reports, appointed by the Board.

The Manager responsible for preparing the Company's financial reports is assigned with the powers necessary to perform his/her duties pursuant to points 2 and 3 of Article 154-bis of the Consolidated Law.

Finally, the governance model adopted by the Company also provides for a Lead Independent Director who is the representative and coordinator of the requests and contributions of the non executive directors, particularly those who are independent.

## INTERNAL CONTROL SYSTEM

The Company's internal control system consists of a set of rules, procedures and organizational structures established to ensure, through the appropriate identification, measurement and management of major risks, the sound management of the Company in a manner consistent with its objectives.

The Board of Directors has ultimate responsibility for the internal control system and, with the assistance of the Control Committee, defined the guidelines for the internal control system on 11 February 2010.

This document specifies roles and responsibilities of the main control bodies such as the Internal Control Committee, the Head of Internal Control (Chief Internal Audit Officer) and the Supervisory Body (pursuant to Italian Legislative Decree 231/2001).

The Internal Control Committee is responsible for:

- assisting the Board of Directors in the definition of the control system's guidelines;
- reporting to the Board of Directors on the work it carried out;
- upon request of the Board of Directors, expressing opinions on specific issues concerning the identification of the main risks facing the Company, and the planning, implementation and management of the internal control system;
- when required by the related procedure, providing an advance opinion to the Board of Directors in the course of the process for the approval of certain transactions completed by the Company with related parties.

The Internal Audit Department is responsible for verifying that the internal control system is always adequate, fully operational and functional. The department reports to the Chairman, and as such is not responsible for any operating areas, nor is it hierarchically subordinate to any Head of operating areas and reports to the Chairman of the Board of Directors and to the Board of Statutory Auditors on risk management and compliance with risk containment plans, along with an assessment of the suitability of the internal control system.

## RISK MANAGEMENT SYSTEM

In 2011, the Company started upgrading the risk assessment and management system. Hence, a Risk Policy was issued, defining roles, responsibilities, standards of behaviour, processes and standards to be enforced by all Group companies when assessing and managing risks.

With regard to roles and responsibilities, the Board of Directors has ultimate responsibility for the risk management process of Cementir Holding. The Chief Operating Officer of Cementir Holding and the Chief Operating Officers and Managing Directors of the subsidiaries (Regions and Operating companies) are responsible, inter alia, within the risk strategy and the risk policy:

- for developing and implementing an adequate risk management system;
- for submitting a risk strategy proposal to their respective Board of Directors;
- for periodically reporting on risk.

The Internal Audit department supports the management in risk assessment and management, facilitating the implementation of the risk management system throughout the Group; it also collects, reviews and verifies the risk reports required by the policy.

The risk management and assessment system was implemented in the operating companies Aalborg Portland (Denmark), Aalborg Portland Anqing (China) and Aalborg Portland Malaysia and it will be extended to all other Group companies in 2012.

According to the method, management is to act on the risk proceeding along these steps:

- risk identification: the management, using workshops, brainstorming sessions and other instruments, classifies risk according to the following categories:
  - strategic: competition, changes in demand, structural changes in the industry, launch of new products and services, political climate, investor relations, mergers/acquisitions/sales, reputation and brand name;
  - operating: distribution channels, information security, company viability plans, compliance with external and internal regulations (e.g. the Company Code of Ethics), health and safety, environment and crash or malfunction of the IT system;
  - financial: cash management, credit, forecast cash flows, treasury, fraud, changes in interest rates and taxes;
  - image: unfavourable publicity or brand name impairment;
  - compliance: code of ethics, issues with legal or regulatory non-compliance, regulatory changes;
- risk assessment: for each identified risk, management expresses an assessment in terms of likelihood and impact on the business, using a 5-level scoring system;
- risk management: an "owner" is identified for each risk, making him/her responsible for verifying that the agreed initiatives are undertaken promptly and within the specified budget limits and that the initiatives effectively contribute to mitigate risk. Management must be involved, in particular for risks assessed as high;
- risk reporting: the Chief Operating Officer is responsible for the report (risk register) based on the main risks at the operating company and region level. Financial risks are included in coordination with the Chief Financial Officer. The report includes the ten most significant risks identified;
- risk monitoring: the monitoring activities pertain to mitigation and control, as key components in the management of risk exposure.

## ORGANIZATION AND CONTROL MODEL D.LGS 231/2001

In 2008 the Company adopted an Organization and Control Model as per ex Italian Legislative Decree no. 231 of June 8, 2001. The organization model, as result of the analysis of risks related to the activities performed by Cementir Holding, was formulated in line with the principles set forth in Italian Legislative Decree 231/01, with Italian best practices and with Confindustria recommendations and is capable of preventing the offences contemplated in the aforementioned regulation.

This model represents an additional element of strength and sense of responsibility in internal and external relationships and at the same time offers shareholders adequate guarantees of efficient and correct management. The Model contains a list of procedures designed to cover risks associated with activities susceptible to or instrumental in the perpetration of offences covered by the aforementioned legislative decree.

An integral part of the model is the Code of Ethics which contains a series of guidelines on modes of conduct that may be illicit for the intents and purposes of Italian Legislative Decree 231/01 and constitutes a base on which the prevention and control system can be constructed.

In addition to various principles of ethics and conduct, the Code regulates the protection of health, safety and the environment.

The Board of Directors, which approved the organization model, appointed a Supervisory Body formed by an external independent member and by an internal member (internal audit officer).

The Supervisory Body is responsible for:

- a) updating the Organization and Control Model;
- b) assessing the Model's actual ability to prevent the commission of offences provisioned envisaged under Italian Legislative Decree 231/01;

- c) conducting periodic checks on the effective implementation of the Model;
- d) monitoring the validity and adequacy of the Model;
- e) periodically reporting to the Board of Directors and the Board of Auditors on its activities, alerts received, measures taken to correct and improve the Model and their implementation status.

The Supervisory Body has the power to access, or delegate access on their behalf, all of the company's activities and the relevant documentation.

**ORGANIZATION – CEMENTIR 3.0**

Cementir Holding SpA is an holding company that owns 100% of three operating companies: Cementir Italia (production activities in Italy), Aalborg Portland (production activities in Denmark) and Cimentas (production activities in Turkey).

Cementir 3.0 is the name of the internal improvement project that introduced a new organizational structure in our Group aimed at creating increased integration between the local companies in the management of our business. Cementir 3.0 began in late 2009 thanks to the steadfast commitment of all the top managers to face the global recession, working on the business culture and processes, to create value for shareholders, clients and the company's workforce.

This ambitious restructuring process began by studying the status quo of the companies in the Group, up to identifying the potential areas of improvement and strong points that could lead to future opportunities.

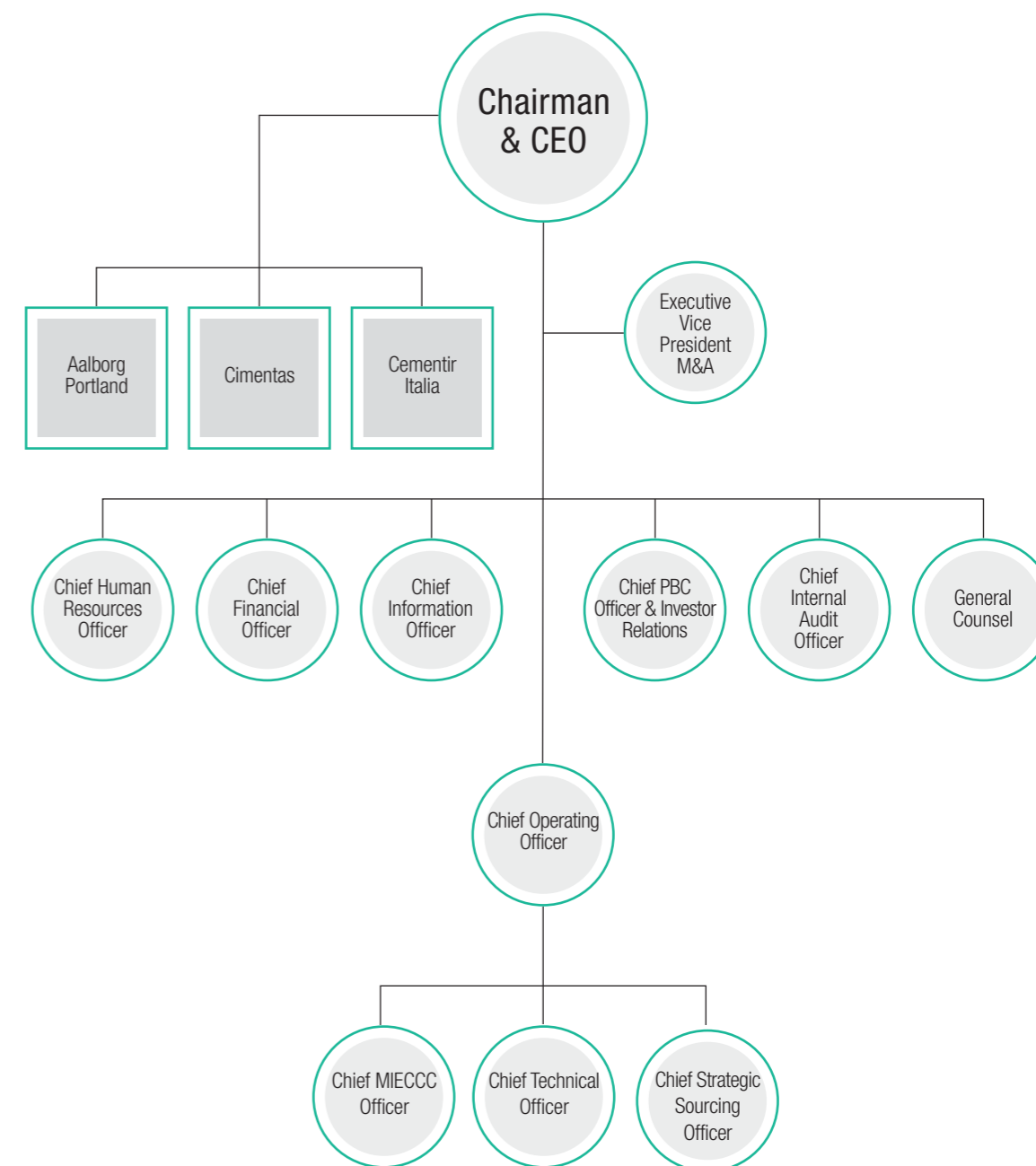
All of the processes were redesigned and the relative responsibilities were assigned in order to transform our structure from a decentralized organization to a single aligned and cohesive group, which works in an integrated way to reach its goals. The model we identified with the Cementir 3.0 project is based on a matrix organization, where the centre plays a strategic role while maintaining significant autonomy on the local level.

In the matrix organization people play a key role in managing and reaching the Group's objectives with a defined set of tools, resources and rules. This allows us to use a common language to create synergies inside our strategic departments and in operative areas.

The Cementir 3.0 project implies a cultural change that requires us to modify our behaviours and way of working, to begin thinking and acting as part of a single group.



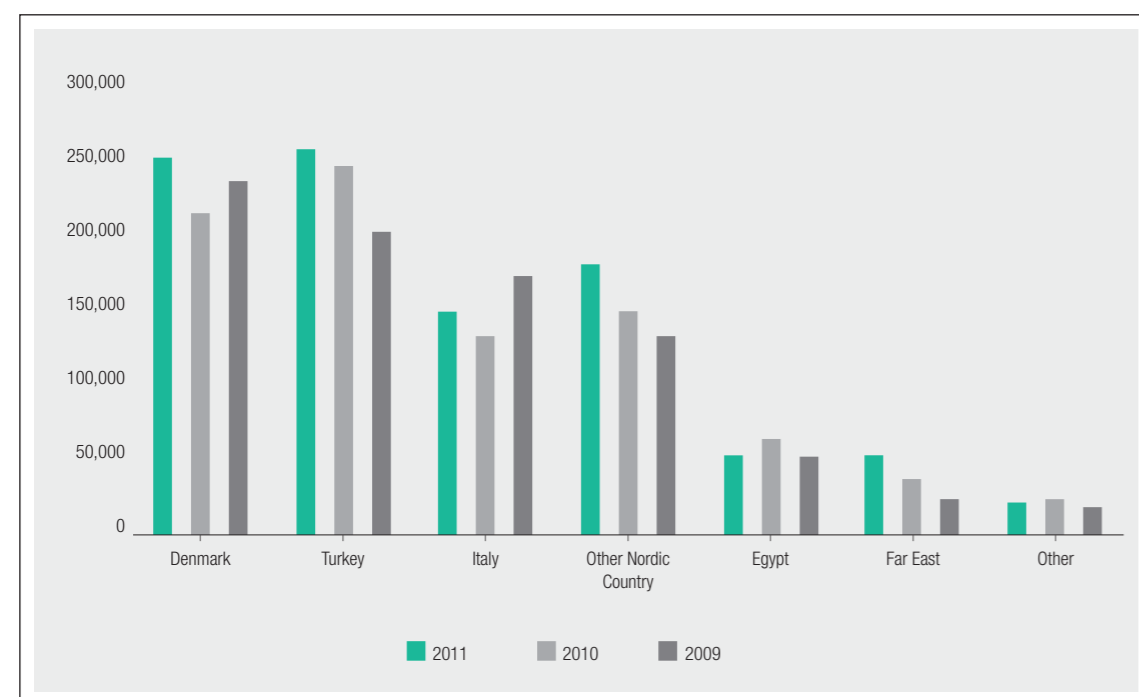
THE GROUP STRUCTURE AS OF 31 DECEMBER 2011



## HIGHLIGHTS

Revenues registered an increase of 10.2% going from EUR 866 million in the previous FY to EUR 954 million in 2011; the EBITDA, which increased by 14%, was EUR 124 million (109 million as of 31 December 2010). Finally, the operating income increased 60.8% to EUR 36 million against EUR 23 million for the same period in 2010.

| Revenues by geographical production area<br>[EUR '000] | 2011           | 2010           | 2009           |
|--|----------------|----------------|----------------|
| Denmark  | 249,896        | 213,651        | 233,910        |
| Turkey   | 254,356        | 245,698        | 203,961        |
| Italy  | 147,843        | 131,479        | 170,800        |
| Other Nordic countries                                 | 179,697        | 148,919        | 131,950        |
| Egypt  | 50,786         | 62,648         | 51,519         |
| Far East   | 49,966         | 38,152         | 24,986         |
| Other  | 21,149         | 24,964         | 20,017         |
| <b>Total</b>   | <b>953,693</b> | <b>865,511</b> | <b>837,143</b> |



Cementir Holding closed FY 2011 with a Group net income of EUR 3 million, compared with EUR 9.3 million for the same period of 2010 (-67,6%).

The company has recommended a dividend for the year 2011 corresponding to a total EUR 6.4 million payout. Despite the lower net income for the period compared to 2010, in 2011 the Group undertook investments to reduce the environmental

impact generated by its production activities in the amount of EUR 10.6 million compared to the figure of EUR 9.5 million in 2010 (+12%). Investments to ensure safety in the workplace and to protect worker health were made in the amount of EUR 1.7 million with a decrease of 45% compared with the same item in 2010.

Over the four-year period 2008-2011, the Group invested a total of EUR 41 million in the environment and in workplace safety.

## RESEARCH, DEVELOPMENT AND INNOVATION

## Cementir Holding R&amp;D and the FUTURECEM project

Cementir Holding has consolidated its R&D activities in a single unit: R&D, Quality and Technical Sales Support. The unit is made up by the R&D and Quality centres in Aalborg and Spoleto, as well as the research laboratory in Izmir, Turkey, to improve the technical support as much as possible in the manufacture and sales of cement and ready-mixed concrete. The purpose is to strengthen the R&D capability of Cementir Holding as well as enhance knowledge sharing and technology transfer across the Group by combining its expertise and facilities into one organization. The research activities of this unit are concentrating on developing new climate friendly and value-added products, involving the entire value chain of construction, from the manufacture of cement to ready-mixed concrete, in order to build durable and sustainable structures. The main focus of our research laboratories is to ensure that the results of the research are implemented to produce fit-for-purpose products in our business units world-wide.

These research efforts allow Cementir Holding to significantly reduce CO<sub>2</sub> emissions.

If we want to contribute to ensuring a better quality of life for all, economic development must be sustainable for every production activity with a significant environmental impact. Cement and concrete are fundamental for reaching this objective, since they are made out of inexpensive, naturally abundant raw materials, suitable for buildings strong and durable structures. However, it must be ensured that increasing the cement production will not be result in a similar rise in global CO<sub>2</sub> emissions. This challenge has been recognised by Cementir Holding and is an important driver for our product development.

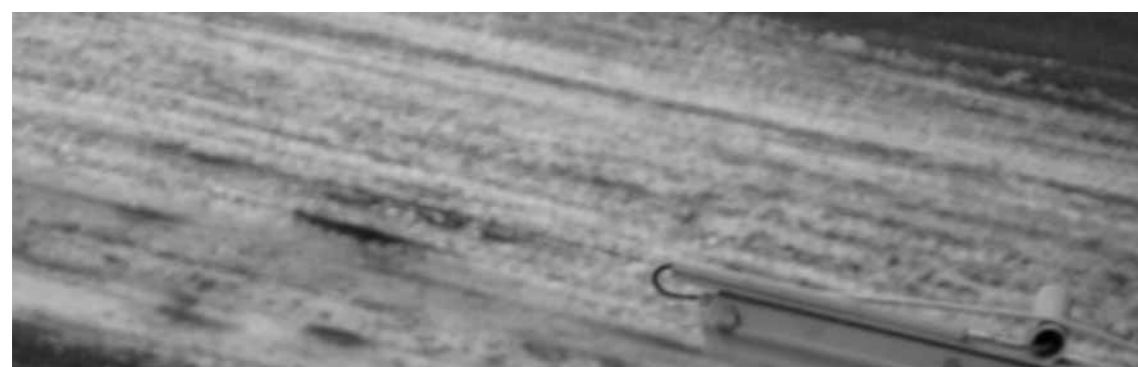
Cementir Holding participates in the Nanocem research network, comprising 23 academic partners and 14 industrial partners from all over Europe. Access to basic research carried out at the top universities and institutes participating in Nanocem lay the foundation for our product development and enable us to develop our visions in cooperation with some of the foremost experts in cement science. Between 2007 and 2010, Cementir Holding's Danish company, Aalborg Portland, participated in the FUTURECEM project. The aim of the project was to develop new cement types which could be produced with up to 30% lower CO<sub>2</sub> emission compared to Portland cement (CEM I) with the same strength. The project was conducted together with the Interdisciplinary Nanoscience Center (iNANO) at Aarhus and Aalborg Universities and the Geological Survey of Denmark and Greenland. The Danish Advanced Technology Foundation supported the project with a grant of 1.3 million EUR.

The project led to the development of a new clinker with enhanced reactivity together with the activated materials manufactured from naturally occurring raw materials, involving both glass and clay based compositions, culminating in the production and testing in experimental conditions of 14,000 metric tons of clinker. As an example of knowledge sharing across the Group, results of the project are being utilized to develop improved cement products in Italy and Turkey.

In November 2011 all of the project partners were awarded during a ceremony held during the annual ATF meeting. One of the most significant result recognized was the possibility to reduce the percentage of clinker in cement through a mixture of pozzolan and limestone that reduces consumption by 10-20% without altering the performance or characteristics of the cement produced.

The results of FUTURECEM will be elaborated further in the project SCM (Supplementary Cementitious Materials) which has received a grant of 2 million EUR from the Advanced Technology Foundation. The purpose of the project is to develop process technology for producing high-quality environmentally friendly cement. The project is being carried out in cooperation between FLSmidth, the world's leading provider of process plants for the global cement industry, Aalborg Portland who as cement producer will test the new cement types, the Interdisciplinary Nanoscience Center at Aarhus

University (iNANO) which has expertise in thermal dynamics and nano-scale studies of cement, and the Department of Energy Technology at Aalborg University which has expertise in model descriptions of process plants. By performing research initiatives in cooperation with our customers and the main stakeholders in construction, Cementir Holding takes an active role in society's endeavours to find solution for the climate change challenge.

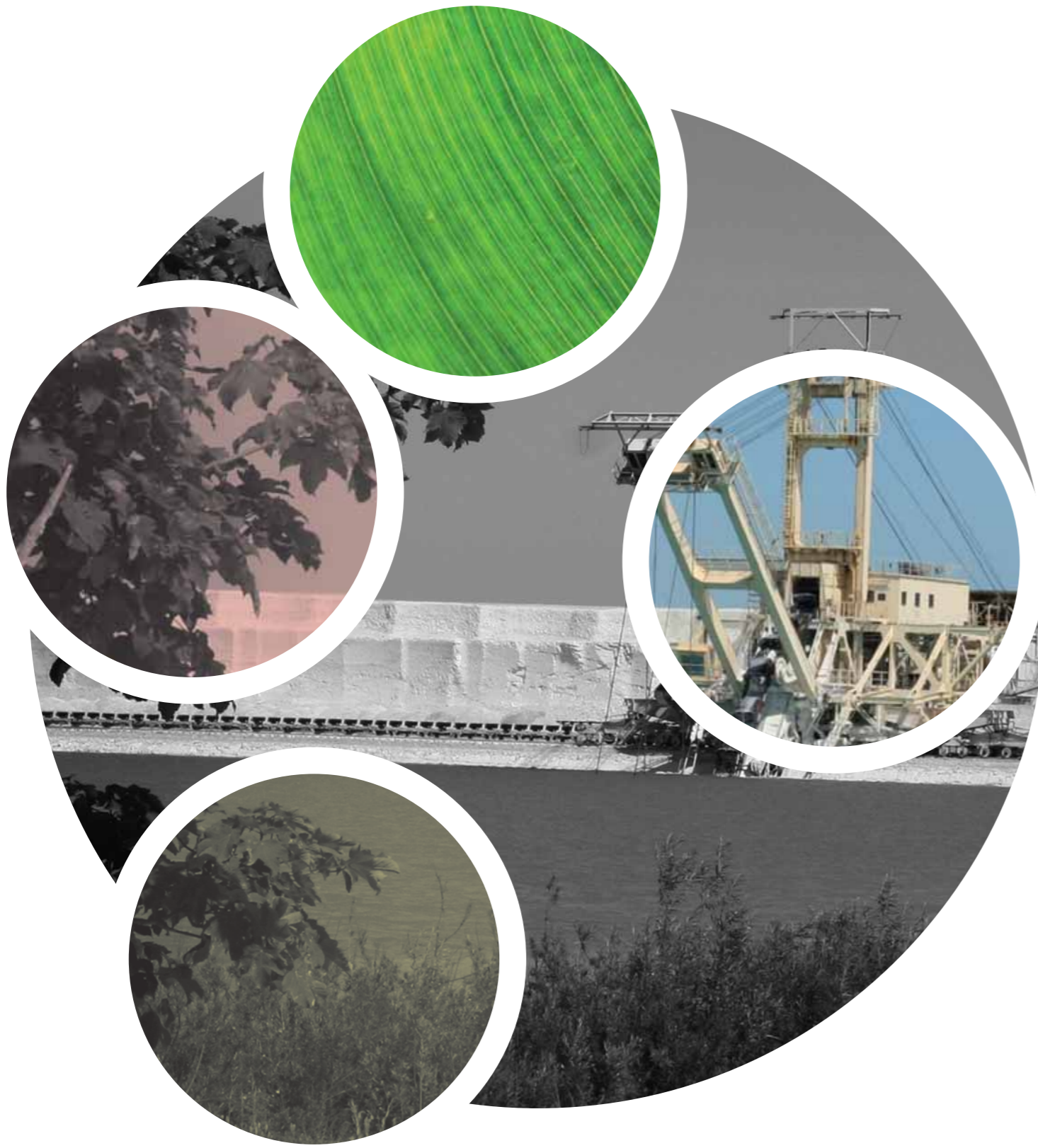


2011 RESULTS

| HSE performance objectives   | Status | Comment  |
|--|--------|--|
| To reduce specific emissions   |        | NOx emissions for t/TCE decreased by 8.3% compared to last year                                |
|  |        | SO <sub>2</sub> emissions for t/TCE decreased by 29.6% compared to last year                   |
|  |        | CO <sub>2</sub> emissions for t/TCE increased by 4.9% compared to last year                    |
| To contain energy consumption  |        | Thermal energy consumption for t/TCE decreased by 4.3%   |
|  |        | Electrical energy for t/TCE decreased by 1.06%   |
| To increase the use of alternative fuels in manufacturing                        |        | Use of recycled raw materials increased by 13.5% compared to 2010                              |
|  |        | Thermal energy from alternative sources for t/TCE increased by 11%                             |
|  |        | Water consumption in litres per metric ton of cement produced increased by 5% compared to 2010 |
| To improve accident ratios, especially severity ratios                           |        | Frequency ratio improved (-6.9%) compared to 2010  |
|  |        | Severity ratio improved by 16.2% compared to last year   |
| Maintaining and enhancing environmental certifications ISO 14001 and OHSAS 18001 |        | Increased the number of plants with ISO 14001 and OHSAS 18001 certifications                   |

2012 OBJECTIVES

- To reduce specific emissions;
- To contain energy consumption;
- To increase the use of alternative fuels and recycled raw materials through specific projects in Italy, Denmark and Turkey;
- To maintain and increase environmental certifications ISO 14001 and OHSAS 18001;
- To improve accident ratios.



# 3

## ENVIRONMENTAL PERFORMANCE

- 32 The cement production cycle and environmental impact
- 41 The ready-mixed concrete production cycle and environmental impact



## THE CEMENT PRODUCTION CYCLE AND ENVIRONMENTAL IMPACT

Cement is made from natural raw materials (limestone, chalk and clay) extracted from natural quarries. The raw materials, precisely measured and mixed with other materials, are ground prior to heating. The grinding process yields a raw meal. The raw meal is heated in a special kiln generally fed with fossil fuels to produce clinker, a primary component of cement. Once cooled, the clinker is ground and mixed with gypsum and other additives (e.g. slag, fly ash) that differ based on the type of cement.

The activities performed during the various stages have a significant environmental impact, illustrated briefly here below.

### Natural resources

The raw materials used in the production cycle, such as limestone, chalk and clay, are essentially natural and non-renewable quarried materials. Within this context, attention has been given to all the environmental aspects related to containing the impact on the ecosystem, restoring and recovering areas involved and using non-natural raw materials.

### Energy Resources

Considerable energy is required to manufacture cement due to the high temperatures to which the kilns must be heated (1500 °C), the electricity needed to grind the product and the quantity of material used.

### Air emissions

These are linked primarily to the gases tied to the combustion process and the decarbonisation of the raw materials such as carbon dioxide, sulphur dioxide, and nitrogen oxides. The burning and grinding process also generates dust emission.

### Waste

The cement manufacturing process does not produce waste. The only waste products are generated by ancillary activities, such as maintenance, storage and office activities.

### Noise emissions

Noise emissions are associated with certain stages of the cement manufacturing process, such as grinding.

### Water supply and waste water

The manufacturing process requires limited quantities of water, essentially connected with controlling the temperature of the kiln gases and for cooling the machinery.

### Transport

The methods used to transport raw materials and finished products are another point to consider when assessing the related environmental impact.

## REPORTING DATA

The Cementir Group considers respect for the environment to be a key value in its operations. Thus, complying with environmental protection laws in all the countries in which it operates, it determines its strategic choices with a view to satisfying the principles of sustainable development and promoting awareness of environmental protection among its managers, employees and other associates. The 2011 Environmental Report is the result of a multi-step process carried out by Cementir Holding through a Steering Committee and a Corporate working group coordinated by the Holding Internal Audit department without the help of external consultants. The operating group is made up by the various units that represent the areas connected with the Group's environmental and economic reports. The Steering Committee, representing the main components of the Group, identified significant environmental concerns for the sector and for the company, the informational structure to be used and the scope of reporting. The working group collected the data, identified the performance indicators and prepared the reports. Environmental data is reported by sending a reporting package to the plants included within the scope of reporting. These data are consolidated in individual reports in the SAP Business Warehouse.

## KEY PERFORMANCE INDICATORS

In order to enable a composite, uniform and comparable assessment of the Group's environmental performance in terms of emissions and consumption, key performance indicators relating to production have been used. Production is reported in metric tons of Total Cement Equivalent (TCE), an indicator related to the plant's clinker production, based on the production of clinker and the plant's average ratio of clinker/cement. This indicator was selected in consideration of the fact that the production of clinker, the primary component of cements, is the one with the greatest environmental impact. The following charts show the consolidated data for 2011, 2010 and 2009. Additional information on acronyms utilized and indicator calculation method is included in the annex in the final section of the report.

## SCOPE OF REFERENCE

The data used to calculate environmental performance refers to all the cement manufacturing plants in:

- Italy: Maddaloni, Arquata, Spoleto, Taranto;
- Denmark: Aalborg (7 kilns);
- Turkey: Elazig, Izmir, Kars, Edirne;
- Egypt: Sinai (El Arish);
- Malaysia: Ipoh;
- China: Anqing.

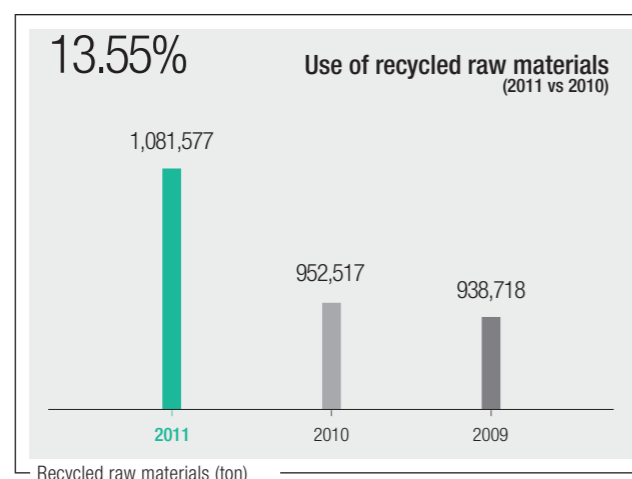
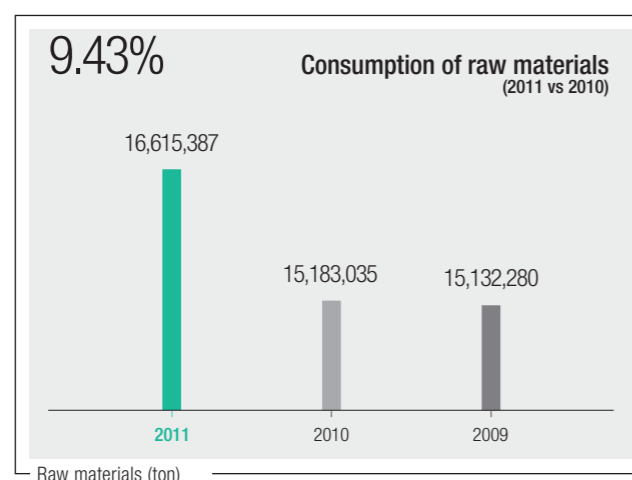
The output of these plants represents about 97% of the total Group cement output for 2011.

## NATURAL RESOURCES

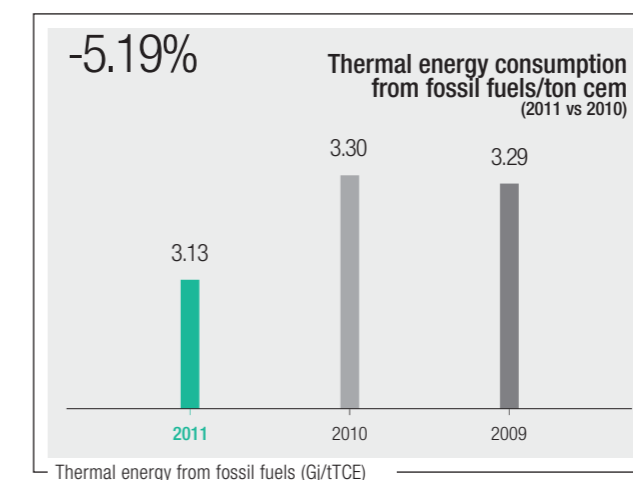
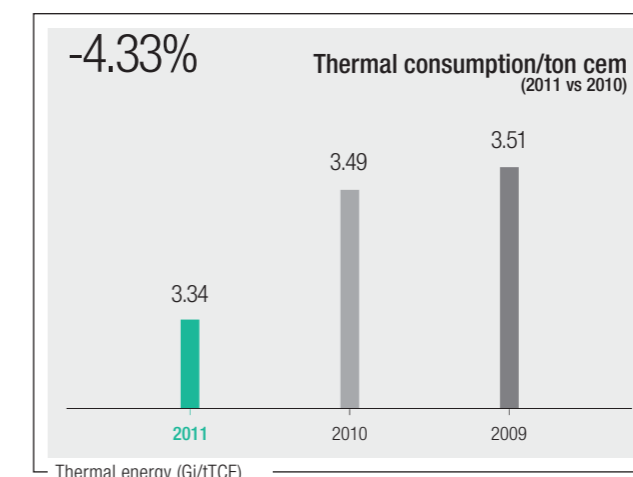
The cement manufacturing process starts with the extraction of raw materials from the quarries. These are natural raw materials such as limestone, chalk, marl and clay. Raw materials are primarily used in two stages. Initially they are mixed to create the meal (first stage) for the production of clinker. Then the raw materials are added to the clinker in the cement mills (second stage) to produce the different types of cement. In 2011, the Cementir Group's plants used a total of about 16.6 million metric tons of raw materials to manufacture cement, marking a 9.4% increase over last year's figure. The increase is due to the greater production of clinker.

In order to contain or reduce the consumption of non-renewable raw materials, the Cementir Group promotes the use of alternative raw materials (thus called since they are not extracted from quarries but rather derive from other production processes), for example foundry sand and blast furnace slag.

In 2011 Cementir Group plants used more than one million metric tons of alternative raw materials, replacing more than 6% of the non-renewable natural raw materials, essentially following the trend of 2010. In particular, alternative raw materials made up more than 26% of the total raw materials used at the Taranto and Arquata plants (average rate of the two plants). Another strategy implemented by the Cementir Group to reduce the use of non-renewable raw materials is the internal recycling of materials, such as, for example, the dust captured by filters, which are reused in the production process as raw materials. In 2011 the Group's plants reused more than 1,000,000 metric tons of internally recovered materials through internal recycling.



## ENERGY RESOURCES



The cement production process consumes considerable energy during the various processing stages.

The energy used in the cement manufacturing plants is either electric or thermal. This latter is mainly used to start up and operate the kilns (1500°C) and to operate the burners or heaters needed to increase efficiency and optimize the manufacturing process (for example, to dry raw materials and fuels). Electric energy is mainly used to operate the mills for grinding the raw materials, the clinker and fuels.

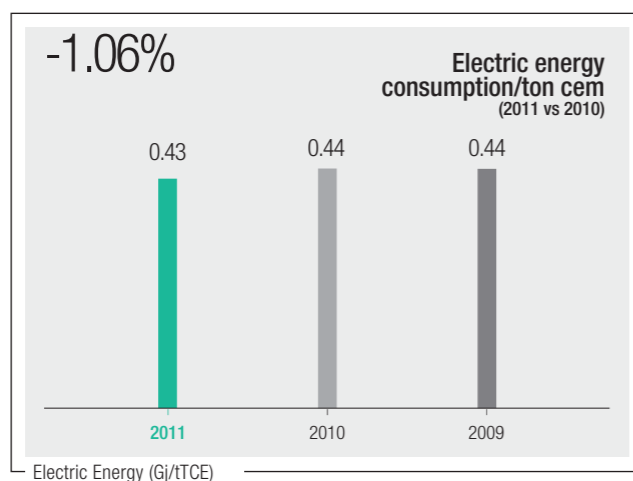
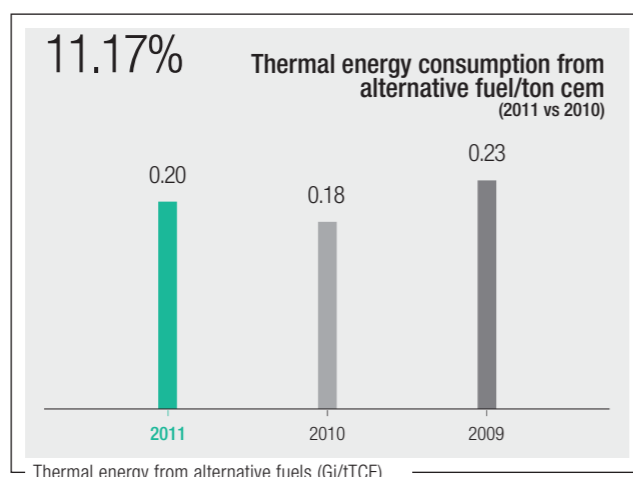
In 2011 the Cementir Group's facilities used approximately 34,800 TJ of thermal energy and 4,500 TJ of electric energy with a consumption factor per metric ton of cement produced, respectively equal to 3.34 GJ/tCE and 0.43 GJ/tCE. Thermal energy consumption decreased by 4.33% compared to 2010 while electric energy consumption was reduced by 1.06%.

The thermal energy needed to manufacture cement is traditionally produced by using fossil sources (combustible oil, pet coke, coal, natural gas).

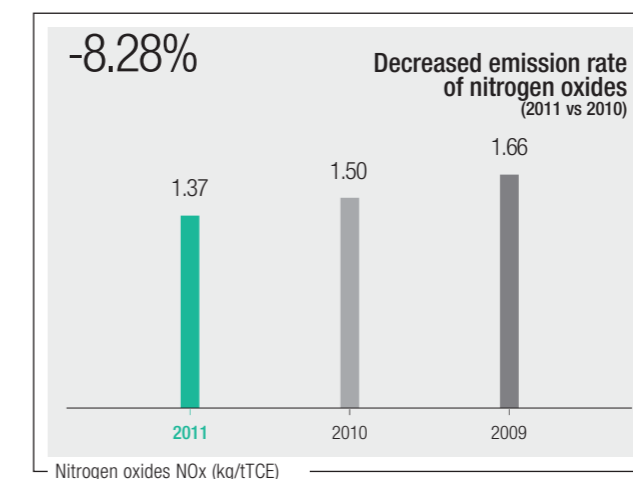
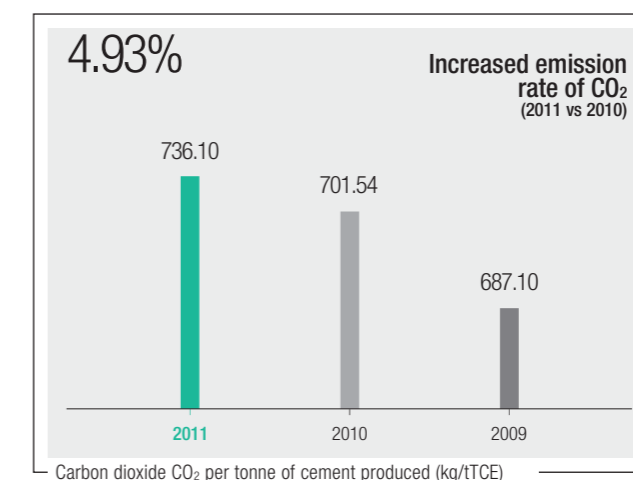
The Cementir Group, in compliance with the permits issued by local authorities and the applicable legislation of the countries in which it operates, promotes the use of alternative fuels in place of traditional fossil fuels. In 2011, alternative fuels used by Cementir Group plants to generate thermal energy included: tires, animal meat and bone meal and fats, used oil, contaminated textile waste and RDF.

In 2011 the Cementir Group used alternative fuels to produce 6.13% of total thermal energy.

In particular, the use of such fuels was appreciable in the Aalborg plant in Denmark (approximately 26% for the production of grey and about 7% for the production of white), and the Edirne plant in Turkey (10%). Furthermore, in the same plant in Aalborg, a portion of the heat is recovered from exhaust gases which are used for heating the town. In 2011 the heat recovered was approximately 0.68 GJ per tTCE produced, serving a population of approximately 30,000 households.



## ATMOSPHERIC EMISSIONS



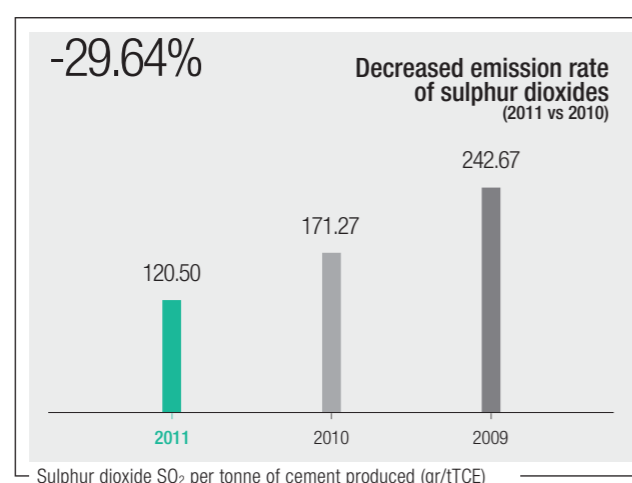
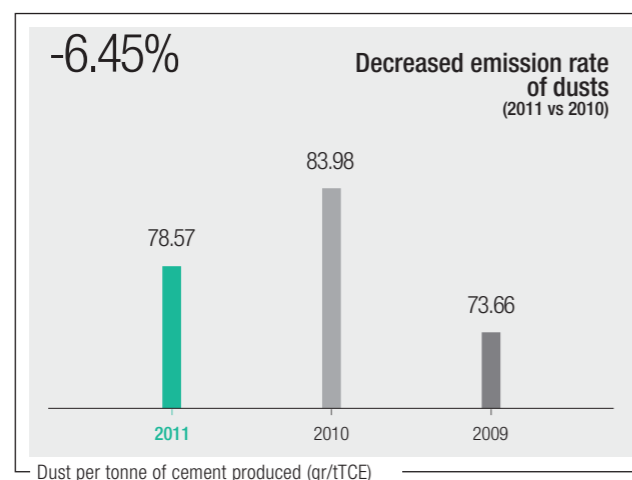
The cement manufacturing process generates atmospheric emissions, mainly carbon dioxide, dust and nitrogen and sulphur oxides.

The kiln gases are channelled and filtered prior to being released into the atmosphere. Carbon dioxide emissions (CO<sub>2</sub>) in the cement manufacturing process are generated during the heating and precalcination of the raw materials and through the burning of fossil fuels. Carbon dioxide emissions by Cementir Group plants in 2011 equalled a total of 7.68 million metric tons, leading to an emission per metric ton of cement ratio of 736.10 (kg/tTCE), a 4.93% increase over the previous year.

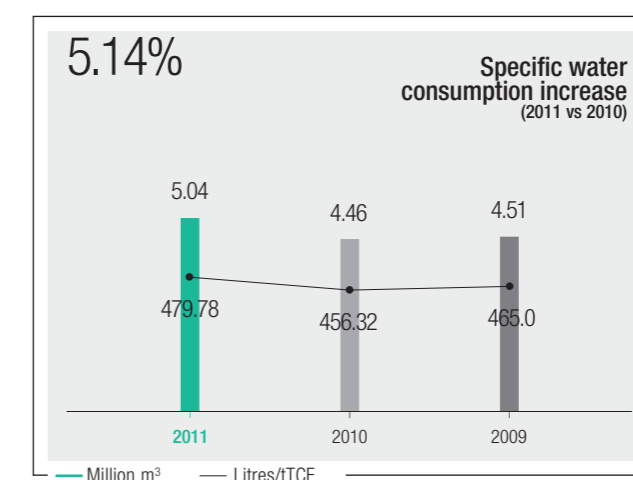
Emissions of nitrogen oxides (NOx) are linked to combustion, in particular the types of fuel used. In 2011 the NOx emissions of Cementir Group facilities were 14,335 metric tons, equal to an emission per metric ton of cement rate (kg/tTCE) of 1.37, resulting in a 8.3% reduction from the figure from 2010. Emissions of sulphur dioxides (SO<sub>2</sub>) are linked to the presence of sulphur in the fuels and raw materials used. In 2011 the SO<sub>2</sub> emissions of the Cementir Group facilities amounted to 692 metric tons, equal to an emission per metric ton of cement rate (gr/tTCE) equal to 121, a further reduction compared to 2010 (-29.6 %).

Dust emissions by Cementir Group facilities, in 2011, amounted to 820 metric tons, equal to an emission per metric ton of cement rate (g/tTCE) equal to 78.





## WATER SUPPLY AND WASTE WATER



The impact of the cement manufacturing process on water supplies is largely tied to consumption since the production of waste water is not significant either in terms of quantity or concentration of pollutants.

In the dry cement production process, water is used primarily to cool the circuits and to control the temperature of kiln gases. In the wet and semi-dry process, water content is greater and water is vaporized during production. In 2011 the Cementir Group facilities used a total of 5.04 million cubic metres of water against 4.46 million cubic metres of water in 2010. The Cementir Group's commitment to a more efficient use of water supplies led to the installation of industrial water and rainwater recovery systems. The technology adopted resulted in an internal recycling of processing water of 6,643 thousand cubic metres in 2011, marking a significant increase compared to the final figure for 2010 equal to 4,342 thousand cubic metres (+53%). The average water consumption per tonne of cement produced in 2011 was 479.78 Litres/tCE, a slight increase compared to the figure recorded for 2010. This variation is mainly due to the increase in white cement produced, the production cycle of which requires a water use proportional to the quantities produced.

## TRANSPORT

Production at a cement manufacturing plant involves many transport activities:

- inside the facility, to move materials;
- outside the facility, for incoming materials and fuels and outgoing products.

Due to the distances covered and the related environmental impact (emissions and traffic created), outgoing transport is particularly important. It can be conducted using a variety of means of transport such as: trucks, trains, ships and conveyer belts. The choice of transport method used is primarily affected by the location of the facility and the infrastructure available in the surrounding area.

In 2011 the inbound transport of materials and the outbound transport of products were mainly conducted using trucks; for the Aalborg, Taranto, Izmir Ipoh and Anqing facilities ships were also used, thanks to the existence of the necessary infrastructure.

With regard to incoming materials:

- 75.4% arrived at the facility via truck (78.6% in 2010);
- 4.2% arrived via ship (3.6% in 2010);
- 20.4% arrived via the conveyer belt that connects the quarry with the plant (17.8% in 2010). This movement of material is considered as external transport.

In 2011, 79% of products exiting Cementir Group facilities were transported by trucks and 21% of the total by ships (in 2010 the respective figures were 75.3% and 24.7% of the total).

The following table shows percentage of outgoing products transported by ship for the years 2011, 2010 and 2009.

| Plant   | Country  | % of products shipped by sea |      |      |
|---------|----------|------------------------------|------|------|
|         |          | 2011                         | 2010 | 2009 |
| Aalborg | Denmark  | 67.5                         | 68.3 | 66.6 |
| Taranto | Italy    | 32.0                         | 32.5 | 32.0 |
| Izmir   | Turkey   | 31.5                         | 45.0 | 48.0 |
| Ipoh    | Malaysia | 79.9                         | 82.1 | 82.3 |
| Anqing  | China    | 55.0                         | 47.8 | 50.3 |

## WASTE

The cement manufacturing process does not produce waste, although ancillary activities, such as maintenance, storage and office activities generate waste equal to each production activity.

Waste produced at Cementir Group facilities is managed in accordance with the applicable laws in the countries in which the Group operates. Emphasis is placed on reusing and recovering materials. The total waste produced by the Cementir Group's plants in 2011 amounted to 44,887 metric tons, a figure essentially in line with the results recorded during the corresponding period in 2010 (43,526 metric tons). The amount of waste used for recovery was 17 % of the total.

## NOISE EMISSIONS

Acoustic emissions are generated in various phases of the production process, particularly while moving raw materials and fuels and during the grinding process.

Despite the fact that the plants are located in industrial areas, thus limiting possible disturbances to the public, the Cementir Group regularly samples the noise generated by the manufacturing process in order to ensure compliance with applicable laws and to abate noise levels. The containment of noise emissions seeks to reduce the impact on surrounding buildings and to provide a better working environment for employees of the Cementir Group.

## THE READY-MIXED CONCRETE PRODUCTION CYCLE AND ENVIRONMENTAL IMPACT

Ready-mixed concrete is produced from a blend of aggregates, cement and water, with the aggregates acting as the support structure, while the cement reacts chemically with the water in order to bind the other ingredients. At times, in order to obtain particular levels of performance, such as greater fluidity or more rapid drying, various types of additives are dissolved in the water.

Ready-mixed concrete is packaged and produced in concrete-mixing plants, in which the mix is dosed out directly in batching plants. The mixing phase can take place directly in a pre-mixer or during transport in a cement-mixer truck, which allows keeping the product properly mixed, so that it maintains the fluidity it needs to be used in construction.

Once the concrete arrives on the work site, it is thereby ready to be used. Before being cast, the concrete often undergoes a special process known as "pumping". This involves sending the concrete through pipes, which makes it easier for the product to reach higher locations, such as upper floors, tunnel structures, and so on.

The activities performed during the various stages have a significant environmental impact, as outlined below.

### Natural resources

The raw materials used in the production cycle, such as sand and gravel of various sizes, are derived from quarried materials. Within this context, attention is placed on all the environmental aspects related to containing the impact on the ecosystem, restoring and recovering areas involved, and using raw materials.

### Atmospheric emissions

Atmospheric emissions primarily include emissions connected with the transport of aggregates, the unloading of cement, and the loading of cement mixers. All emission sources are equipped with special filters that significantly reduce the dust emitted, and these filters are subject to periodic maintenance. Emissions are constantly monitored and subject to laboratory testing.

### Water supply

The water used in the production of ready-mixed concrete serves to bind the aggregates, cement and additives.

### Noise emissions

Noise emissions are limited and associated solely with the loading of cement mixers and the transport of aggregates.

## PERFORMANCE INDICATORS

The following tables illustrate the consolidated numbers on concrete production and the consumption of raw materials and water for the years 2011, 2010 and 2009.

## SCOPE OF REFERENCE

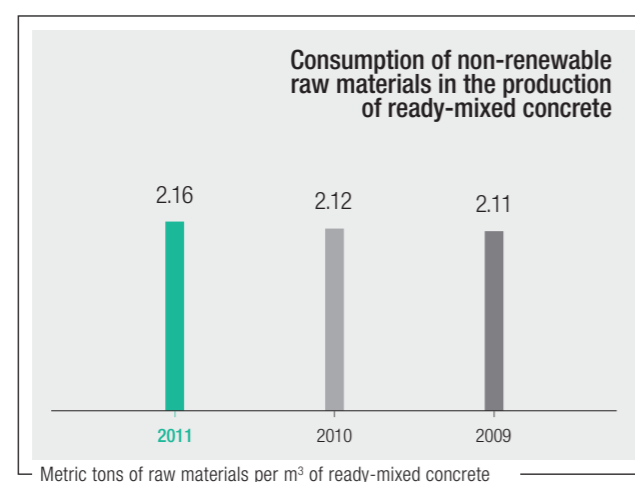
The data used to calculate environmental performance for the concrete segment refers to the manufacturing plants in Italy, Denmark, Norway and Turkey. The output of these plants represents 94% of the total Group concrete output for 2011.

## NATURAL RESOURCES

In 2011, the Cementir Group's plants used a total of about 7.8 million metric tons of raw materials to manufacture ready-mixed concrete.

|                    | 2011             | 2010             | 2009             |
|--------------------|------------------|------------------|------------------|
| Sand               | 2,118,564        | 1,598,806        | 1,652,065        |
| Cement             | 1,127,720        | 880,195          | 839,775          |
| Stone              | 4,565,665        | 3,839,415        | 3,592,563        |
| Other raw material | 2,145            | 2,141            | 1,642            |
| Additives          | 14,009           | 10,226           | 11,752           |
| <b>Total</b>       | <b>7,828,104</b> | <b>6,330,783</b> | <b>6,097,796</b> |

The approximately 23% increase over 2010 is due to the proportional increase in the production of ready-mixed concrete during the period and the start-up of the concrete mixing plants of the Italian subsidiary Betontir SpA in the last two months of 2010. The raw material consumption per cubic meter of ready-mixed concrete produced in 2011 is substantially in line with the figure from 2010.



In order to contain or reduce the consumption of non-renewable raw materials, the Cementir Group promotes the use of alternative raw materials (thus called since they are not extracted from quarries but rather derive from other production processes) for example fly ash, Microsilica and other recycled materials. In 2011 Cementir Group plants, with the aim to replace natural raw materials with alternative raw materials, increased the use of the latter by 26%, marking an increase over the corresponding period of last year equal to 38% for the use of fly ash, and by 48% for the use of Microsilica.

| Values in tons           | 2011           | 2010          | 2009          |
|--------------------------|----------------|---------------|---------------|
| Fly ash                  | 113,434        | 82,338        | 90,188        |
| Microsilica              | 8,683          | 5,884         | 2,685         |
| Other recycled materials | 5,000          | 5,000         | 4,000         |
| <b>Total</b>             | <b>127,117</b> | <b>93,222</b> | <b>96,873</b> |

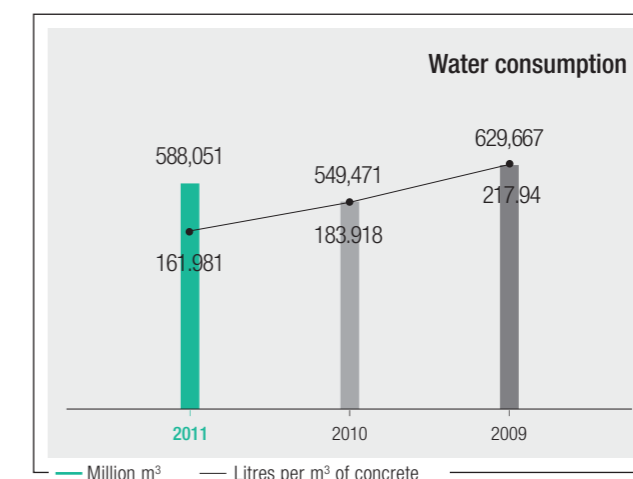
## TRANSPORT

Production at a ready-mixed concrete manufacturing plant involves the inbound transport of raw materials and fuel, and the outbound transport of finished goods (ready-mixed concrete).

In 2011 the inbound transport of materials and the outbound transport of products were mainly conducted using trucks. For the Unicon facilities in Norway, about 60% of the total inbound materials were transported by sea, a figure in line with 2010 results.

## WATER SUPPLY

In 2011, water consumption equalled a total of about 0.59 million cubic meters, a slight increase over 2010 (0.55 million m<sup>3</sup>). The average water consumption per cubic meter of ready mix concrete produced decreased by 11.9% from 2010. This variation is due to the use of new additives that require smaller amounts of water, particularly in the Italian plants.



Through the recycling and settling loops it was possible to minimize, to the extent permitted, the employment of water in the production process ensuring the reuse of process water and zero discharge. The 2011 figure is equal to 135,000 cubic meters, a considerable increase over last year (71,717 cubic meters, +88%). In particular, the use of recycling water was appreciable at the Cimbeton plants, reaching about 91,300 cubic meters in 2011 with an increase of 237% against the same period in 2010 (27,112 cubic meters).



# 4

## PEOPLE, ENVIRONMENT AND COMMUNITIES

- 46 Health and safety
- 51 People, environment and communities

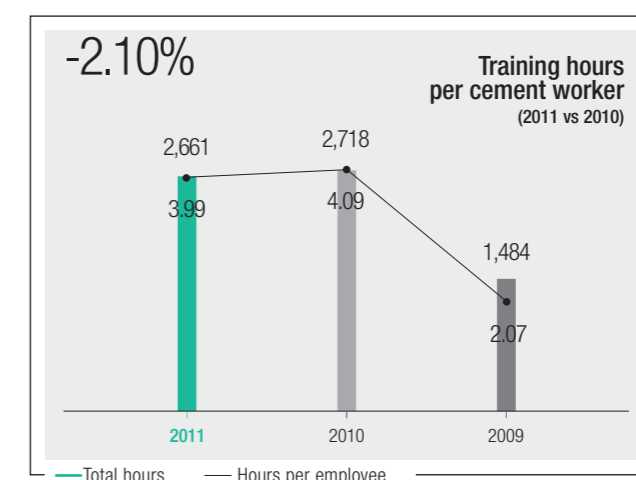
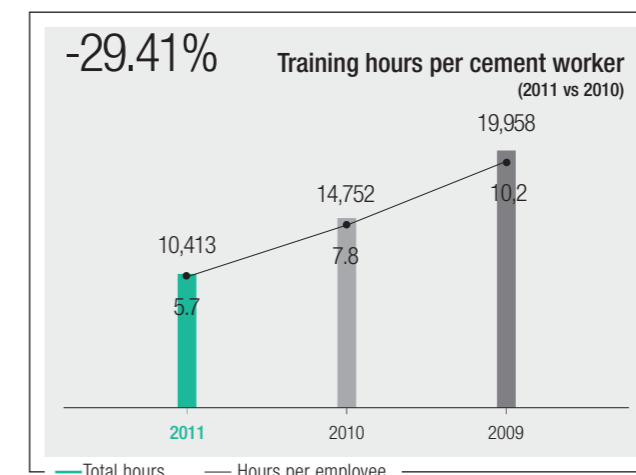
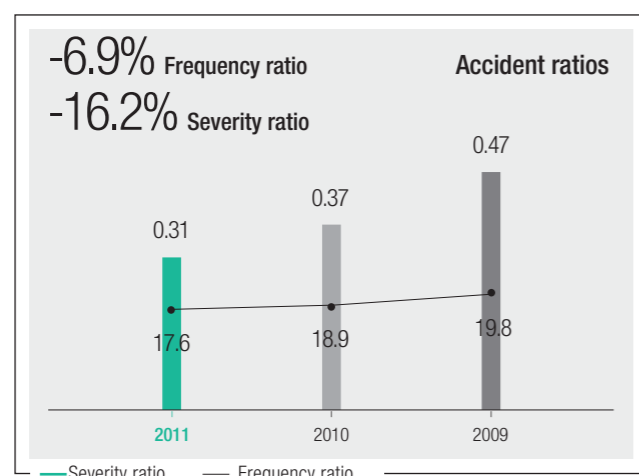
**HEALTH AND SAFETY**

Respect for the health and safety of employees represents one of the primary objectives of the company, The Group uses the following tools to improve its performance:

- ongoing training on specific health and safety issues and on the proper use of machinery (see the section "Training");
- investments in and expenditures on safety devices (individual and facility-wide) and machinery to maintain a high level of technology (see the section "HSE investment");
- adoption of workers' health and safety management systems (see the section "Certifications").

The frequency ratio, for Cementir Group plants (cement production and RMC production), decreased from 18.9 to 17.6 between 2010 and 2011 (-6.9%); the severity ratio was also significantly reduced, from 0.37 to 0.31 (-16.2%) in the same period. These changes mean that there was a decrease in the total number of workplace accidents and their average duration.

In order to reduce the severity and frequency of work-related injuries, in 2009 Cementir Italia initiated a project called "Verso Zero Infortuni" (*Towards Zero Injuries*) which continued throughout 2011. Over the last year no fatal accident has occurred involving employees in the plants of the Cementir Group.



**TRAINING**

One of the keys to the Cementir Group's continuous improvement of its HSE performance is training on environmental, health and safety issues.

Training programmes are targeted at all Group employees and are adjusted to address specific needs based on the duties of each employee in different HSE areas. In 2011, 10,413, hours of HSE training were provided at Group cement plants, corresponding to an average of 5.7 hours per employee. This figure represents a decline from the same period in 2010 and 2009. It should be noted that in 2009 the Group significantly increased its commitment to training, with an 81% rise compared with 2008, and a 118% rise compared with 2007. The number of HSE training hours conducted by the Cementir Group in the concrete sector also shows the Group effort to improve HSE performance; in 2011 training hours supplied in the ready-mixed concrete manufacturing plants came to 2,661 for an average of 4 hours per employee; both figures are in line with those from 2010 and are significantly higher than 2009.

**CERTIFICATIONS**

The Cementir Group is active in adopting environmental management systems certified as compliant with ISO 14001 and worker health and safety management systems certified as compliant with OHSAS 18001 at its facilities in order to continually improve environmental performance and to achieve high levels of workplace safety and protection. The following table details cement plants certified according to the two above mentioned standards and to the standard EMAS and ISO 9001. In 2011, the plants in Ipoh (Malaysia) and Edirne (Turkey) obtained the ISO 14001 Certification; the latter plant, during the same period, also obtained the OHSAS 18001 Certification.



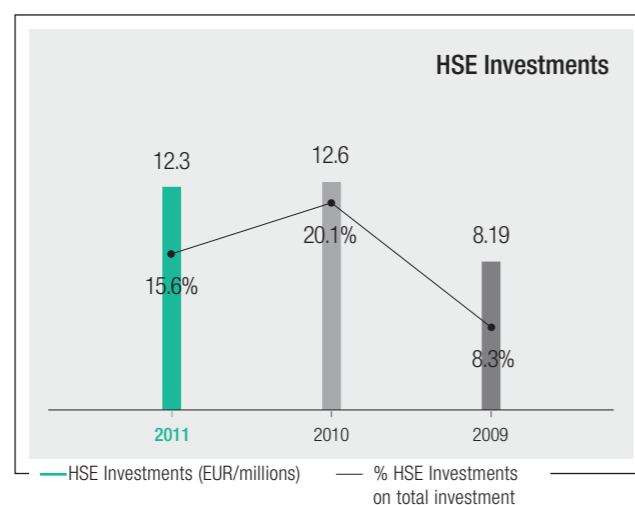
| Certified plants | ISO 14001 | OHSAS 18001 | EMAS | ISO 9001 |
|------------------|-----------|-------------|------|----------|
| Aalborg          | X         | X           | X    | X        |
| Anqing           |           |             |      | X        |
| Ipoh             | X         |             |      |          |
| Edirne           | X         | X           |      | X        |
| Elazig           |           | X           |      | X        |
| Izmir            | X         | X           |      | X        |
| Kars             | X         | X           |      | X        |
| Maddaloni        | X         |             |      |          |
| Spoletto         | X         |             |      |          |
| Taranto          | X         |             |      | X        |

### HSE INVESTMENTS

The Cementir Group's commitment to Health, Safety and the Environment (HSE) is shown by its financial and managerial efforts to:

- reduce the environmental impact of its manufacturing activities;
- ensure workplace safety;
- guarantee the health of workers.

HSE investments by the Cementir Group in 2011 amounted to EUR 12.3 million, essentially in line with the figure from 2010. HSE investments for the entire three year period between 2009-2011 reached EUR 33.1 million, Investments for safety in 2011 amounted to EUR 1.7 million, decreasing by 46% against 2010.

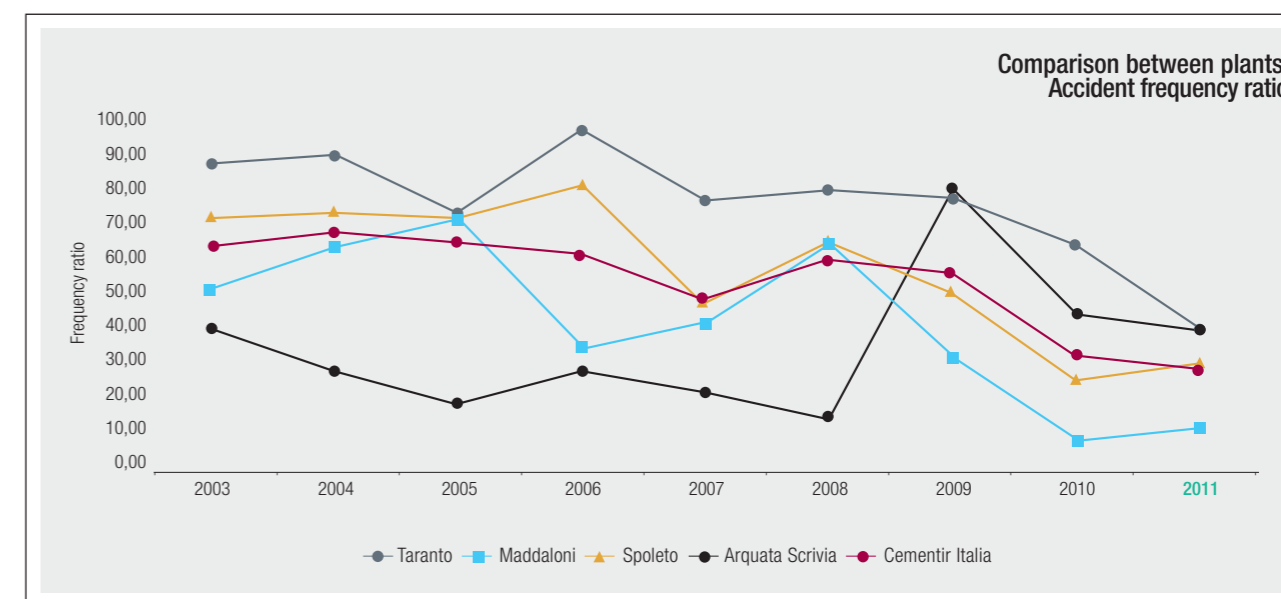


Environmental investments in 2011 amounted to EUR 10.6 million, representing a 12% increase over 2010 investments of EUR 9.5 million.

### CEMENTIR ITALIA'S "VERSO ZERO INFORTUNI" PROJECT

In 2009, Cementir Italia began rolling out its "Verso Zero Infortuni" (Towards Zero Injuries) project, focused on employees, workplace safety organization and technical issues. Prepared with the support of external consultants who have successfully implemented similar projects at leading Italian companies, the first phase of the project was to survey safety at the company's four Italian plants. The survey identified strengths and areas for improvement in order to establish a reliable Security Management System.

After the survey was completed, the project was presented in the plants of Arquata Scrivia, Spoleto, Maddaloni and Taranto. In 2010, Plant Committees were established to analyse accident trends among company personnel and external companies, assess proposals for improvements, identify appropriate responses, and analyse the safety audits. The scope of the initial Committee meeting was to identify critical issues (defined as resolvable directly by the Department concerned, through an amendment of conduct), and to prepare an action plan with a six-month time horizon. At its second meeting, the committee analysed accident trends among company personnel and external companies and introduced an accident analysis procedure, together with the concept of "Safety Tutors". The Safety Tutor is a professional role assigned to a person who, inside of the facility, performs a very important role related to work activities and safety, working alongside new hires and demonstrating, among other things, safety-centric conduct ((risk assessment, taking countermeasures, appropriate reporting, use of PPEs at all times, and reporting accident near misses etc.) or maintaining the employees focus on these issues during their daily work activities. Deployed communications tools include a Security Policy document published for use on posters in departments and offices, along with a "Days without Accidents" counter. The end-goal is clearly to show all stakeholders the company's commitment to ensure safety in the workplace, and the related results. And it is thanks to the "Verso Zero Infortuni" project and the increasing awareness of this matter in Italy that in the last 2 years injuries have been reduced by 50% and the highest safety standards have been obtained. Furthermore, the Maddaloni plant established a record for the greatest number of days without accidents: an impressive 270 days.



**INTERVIEW WITH VITO GALEANDRO, SAFETY TUTOR,  
Taranto Plant**

**What do you think about Cementir Italia's safety management system?**

I've been working at Cementir since 2002 and I can say that over the last two years there has been a clear improvement of the rate of workplace injuries or accidents, and I believe that this was made possible thanks to the considerable attention of the company's top management on safety. When we talk about workplace accidents, we are basically talking about men: this is why I believe that the way we work is the most important aspect. The "Zero Infortuni" project is the company's commitment to health and safety, and I am proud that Cementir Italia has entrusted me with the role of Safety Tutor for the Taranto plant. Workplace safety is everyone's responsibly, of both the company and the workers. Effective performance on these aspects and an extremely low accident rate also help to build a good reputation for the company. Over the past two years we have actually established a record for the number of accident-free days in the Maddaloni plant, more than 270, and the best frequency ratio of accidents among all of the plants in Italy.



**What are the most significant results of the "Verso Zero Infortuni" project?**

I am extremely satisfied, because every day I receive suggestions or requests for improvements from my colleagues. It seems that safety has become a crucial aspect of our work. The "Zero Infortuni" project has helped us create a spirit and consciousness about these issues that allows us to put more energy and passion into our work.

**What is the Safety Tutor's role?**

In the facility where I work, I always try to teach my colleagues the principles and rules of safety in the simplest way possible. I am not a teacher, nor am I a production manager, but a worker like so many others trying to show young people the rules of good conduct and, most importantly, how to work in a completely safe way. If someone in the plant needs a hand, I'm ready to help.



**Have you ever had to intervene to prevent a dangerous situation?**

My main responsibility is to help others and to prevent them from hurting themselves and to make sure they follow the rules. There have been occasions where I've had to intervene to stop an operation that was becoming

dangerous, and I explained how to do the same thing but in a safe way, without posing a health risk. While in other situations I asked certain co-workers to wear the necessary protective equipment, explaining to them that the company requires to wear protective clothing to avoid injuries.

**PEOPLE, ENVIRONMENT AND COMMUNITIES**

The Group's geographical structure, spanning 15 countries with a workforce of over 3,200, makes Cementir a "multi-local" group. This structure is also reflected in the development of relations with local communities and institutions. In fact, in their daily operations, the operating companies have engaged in specific communication and dialogue activities with communities and public institutions. Despite these activities are conducted at the local level, they nevertheless aim at pursuing the basic principles of complying with the law and respecting sustainable development. Furthermore, Cementir Holding's operating companies are members of major cement manufacturer associations that host work groups and committees actively committed to sustainability issues.

**Participation and associations**

- T,Ç,M,B, (Turkish Cement Manufacturers' Association);
- Cembureau (The European Cement Association);
- Aitec (Italian Technical and Economic Cement Association).

In 2011 the Group was actively involved in the local community on many fronts, from student tours of its plants, agreements with schools and universities on research projects, or simply with the publication of local environmental reports. The Cementir Group is proud to have been chosen by the Danish Environmental Protection Agency for its Environmental Report prepared by the Aalborg Portland company. Thanks to this initiative, AP's environmental report was part of the EU EMAS AWARD recognising the 36 European companies and organizations most actively committed to environmental reporting. Following are just some of the activities performed by the Group, with examples of initiatives and programmes developed in the area.

**PEOPLE**

**Employment opportunities for the disabled**

In 2011, Aalborg Portland Malaysia decided to support a partnership and social sustainability programme with the Persatuan Daybreak organization, which aims to provide job opportunities to young men and women with physical disabilities at its plant in Ipoh. Persatuan Daybrake, a project partner, is based directly next to the plant. Its activities include sponsoring career guidance courses and supporting members of the local community with physical difficulties to enter the world of work. The collaboration project between Aalborg Portland Malaysia and the local organization, in the month of December 2011, led to the delegation of gardening and cleaning services of plant to 6 'trainees'. The Cementir Group and the entire management team of APM hope that this is only the first step towards additional social initiatives to be carried forward with the local community.

**Family Days**

Family Days are held each year in various Cementir Group plants, parties for the employees and their families offering numerous games for all ages in a festive atmosphere where everyone takes part. In 2011, over 2000 people got involved in the initiatives promoted in the plants of Ipoh, Izmir, Kars, Elazig and Trakya. These highly anticipated events, especially popular with children, engage participants throughout the day in themed games, music, sports and competitions with prizes. The Family Days are also an opportunity for families to meet and come together in the place where people work and develop their professional skills.

**Solidarity**

A delegation of 20 people from Cementir Holding decided to demonstrate their solidarity through a small contribution towards breast cancer research promoted by the "Susan G. Komen for the Cure" association during the 12<sup>th</sup> edition of the

“Race for the Cure” held in Rome on 22 May 2011. The participants wanted to show that breast cancer can be defeated, and to celebrate the women who have successfully overcome their challenge with the disease, we are committed each year to participating in this charity race promoted by the association.

## THE ENVIRONMENT

- **Rørdal Plant, Aalborg Portland:** Undertaken a series of energy savings projects - Upgrade of gas emission equipment for the kilns.
- **Arquata Plant, Cementir Italia:** Removal of Eternit panels- Upgrade of equipment for Fire Prevention Certificate (FPC) renewal purposes - Renovation of the laboratory building - Waterproofing work.
- **Maddaloni Plant, Cementir Italia:** Various safety projects - Concrete restoration - Enhanced mechanical body protection - Roadway resurfacing - Enhancements to the workplace - Quarry environmental restoration- Upgrade of lighting system - Sewer out flow and common outlets - Creation of limestone crushing platform.

### Energy Efficiency

In 2011, in the Rørdal facility in Aalborg, the ongoing focus on energy efficiency allowed us to reduce the consumption of electrical energy by a total of 4,058 MWh, which corresponds to the yearly electricity consumption of more than 1000 households. Overall, the project resulted in savings in both electricity and fuel, and contributed to reducing CO<sub>2</sub> and NO<sub>x</sub> emissions. The essential aspects of the project were:

- a reduction of compressed air through the search for leaks in the pipes, an activity to be performed on an annual basis;
- a reduced need for compressed air in the preparation of raw materials.

So one of the main focuses has been, and will continue to be, the use of compressed air and the search for the right pressure in the pipes according to different purposes.

### Waste Project in Turkey

In a world characterized by a continuous increasing consumption, the problem of climate change is more and more on the agenda of the international community.

The need to slow down and eventually reduce the emissions of greenhouse gases is giving impulse to a new sector of economy. In this regard, renewable energy, waste management, technologies and initiatives, are essential for sustainable environment and key solutions to reduce greenhouse gases emissions as well. In 2009, within this notion, we created Recydia for bringing the waste in value recovery. Recydia targets primarily recycling the waste and producing energy via biological and advanced thermal technologies (ATT) and minimizing landfill. In this regard, we generate applicable and proven integrated solutions for the waste and we utilize the most advanced techniques and technologies in waste management such as sorting, recycling, bio drying, anaerobic digestion and pure advanced pyrolysis. Our priority is to recover and recycle the waste or transform it into energy. Landfill is the last option that has to be preferred for a safe and controlled waste disposal.

Sureko, the subsidiary of Recydia, has an integrated Management Systems Certifications, as ISO 9001 Quality, ISO 14001 Environmental and OHSAS 18001 Occupational Health and Safety, obtained from 31st of December 2010 by BSI. With these certifications Sureko processes the waste within the following facilities in its Kula & Ankara plants:

- Refuse Derived Fuel (RDF) Facility;
- Metal Recycling Facility;
- Percolate recovery plant;
- Chemical treatment plant;
- Temporary storage;
- Washing and recycling plant;
- Landfill lot: mono-landfill and mixed landfill;
- Sorting plant for packaging waste.

In 2011 Sureko collected 95,287 tons of waste in Turkey. The company recycled 1,337 tons of ferrous waste and 4,925 tons of packaging waste. Sureko is committed to using alternative fuels, treating 4,981 tons of waste from industrial processes and using them in the kilns for the production of cement in the Group's plants. In particular, 80% of this fuel comes from the treatment of sludge, 6% from hazardous industrial waste, while the remaining 14% is disposed of at a dumping site.

Finally, Recydia contributes to our cement business by providing cost savings from alternative fuels, which also helps to preserve the environment with few CO<sub>2</sub> emissions and to prevent pollution and contamination. We will keep contributing to environmental protection via the best combination of waste recycling and energy recovery and best available techniques for the disposal of residual fraction by focusing on the development of innovative technology & systems and recognizing the importance of innovating processes and solutions and focusing on reliability, innovation, sustainability and social and environmental responsibility in line with our slogan: “Responsible Waste Management”.

## COMMUNITIES

### Helping schools

During the year the Cimentas Education and Health Foundation promoted a project on behalf of schools with limited economic resources located near the 4 plants the Group owns in Turkey. In particular, educational materials were provided to 8 schools in need located in Izmir, Edirne, Elazig and the province of Kars thanks to coordinated efforts with local authorities and the National Education Department. The project raised funds to provide 45 computers, 13 projectors, 8 chalk boards, 2 photocopy machines, 1 scanner, 2 audio systems, 1 WiFi modem, 150 chairs, various sets of window curtains in addition to numerous minor maintenance interventions. At the conclusion of the project a celebration ceremony was held with the participation of local authorities, provincial government authorities, plant managers and Ali Ihsan Ozgurman representing the Cimentas Foundation.

An additional project of the Foundation was the “Strengthening pre-school education” initiative carried out in collaboration with UNICEF and the Turkish Ministry of Education. The project aims to increase enrolment and attendance at day care centres and pre-schools for disadvantaged children. At the same time, UNICEF and Cimentas provided the materials and resources to the Union of pre-schools of the Province of Sarikamis in Kars. The start-up of this project was celebrated in a ceremony attended by the members and families of the Education and Health Foundation, the Director of the Union of pre-schools and by the Professor Talat Harman, the former Minister of Culture and President of the National UNICEF Committee in Turkey.



## GLOSSARY

**Cement equivalent (TCE - Total Cement Equivalent):** an indicator related to the plant's clinker production, calculated based on the clinker produced and the average ratio of clinker/cement for the year.

**CO<sub>2</sub>:** Carbon dioxide.

**Direct energy:** internally produced energy.

**Indirect energy:** energy acquired from external sources.

**g/tTCE:** grams per metric ton of cement equivalent.

**Joule:** a unit of measurement of energy (one joule is the work required to exert a force of one Newton for one meter). A gigajoule (GJ) is equal to 1\*10<sup>9</sup> joules, while a Terajoule (TJ) is equal to 1\*10<sup>12</sup> Joules.

**Frequency rate\*:** The rate used to indicate the frequency of accidents. The numerator is the number of accidents during the year and the denominator is the number of hours worked during that year. In order to make the result more understandable, the ratio is multiplied by one million. The index yields the number of accidents per 1,000,000 (one million) hours worked.

**Severity rate\*:** The rate used to calculate the damage caused by accidents (i.e. the severity of the consequences of workplace accidents). The numerator is the number of work days lost due to accidents and the denominator is the number of hours worked during that year. In order to make the result more understandable, the ratio is multiplied by 1,000 (one thousand).

**Accident\*:** a chance event that occurs during work that causes permanent and/or temporary physical or mental harm or that causes the death of the worker.

**PPE (personal protective equipment):** all equipment designed to be worn and held by the worker to protect him against one or more hazards likely to endanger the safety and health at work, and any other item or accessory designed for that purpose.

**FPC (fire prevention certificate):** certifying compliance with the regulatory requirements fire prevention and compliance with the requirements of fire safety.

**RDF (refuse derived fuel):** a solid fuel obtained from treatment of dry municipal solid waste collected generally in cylindrical blocks known as Eco Bales.

**ISO 14001:** is a voluntary international standard that establishes requirements that must have an effective environmental management system. The ISO 14001 is a certifiable standard, which can be obtained from a certification body accredited to work within certain rules, certificates of compliance with the requirements contained therein. To be certified according to ISO 14001 is not required, but it is the voluntary choice of the company/organization decides to establish/implement/maintain/improve their own environmental management system.

Adopting the ISO 14001 standard allows an organization to identify and monitor the environmental impact of its activities to continuously improve their environmental performance, implementing a systematic approach results in the establishment and achievement of specific environmental objectives.

**OHSAS 18001:** is the international standard that establishes requirements for developing a management system, protect the safety and health of workers (the abbreviation means OHSAS Occupational Health and Safety Assessment Series).

The OHSAS certification verifies the voluntary implementation, within an organization, of a system that ensures adequate oversight concerning the safety and health of workers, in addition to compliance with mandatory standards.

**(EMAS) Eco-Management and Audit Scheme:** is the voluntary instrument created by the EU, which can be voluntarily joined by organizations (companies, public entities, etc.) to evaluate and improve environmental performance and provide to the public and other interested parties with information on their environmental management. The main priority of EMAS is to contribute to the creation of economically sustainable growth, focusing on the company's role and responsibilities. In order to obtain (and maintain) the Emas recognition (registration), the organizations must subject their environmental management system to a conformance evaluation by an Accredited Verifier, and to obtain the Environmental Declaration (and its updates, usually annual) from the same verifier.

**ISO 9001:** Voluntary international standard published in 1987 by the International Organization for Standardization, concerning the requirements for Quality Management System organizations in all sectors and sizes.

**l/t:** Litres per metric ton

**m<sup>3</sup>:** Cubic meter

**NO:** Nitric oxide

**NO<sub>2</sub>:** Nitric dioxide

**NO<sub>x</sub>:** Nitrogen oxides (NO and NO<sub>2</sub>)

**SO<sub>2</sub>:** Sulphur dioxide



\* In calculating the accident rate contained in the 2011 Environmental Report:  
- only injuries lasting more than one day are considered (excluding that on which accident occurred);  
- excluding accidents en route.



200, corso di Francia - 00191 Rome - Italy  
Tel. +39 06 324931  
VAT Number 02158501003 REA C.C.I.A.A. Roma 160.498  
Share Capital Eur 159.120.000  
Tax Number 00725950638  
[www.cementirholding.it](http://www.cementirholding.it)

Work Group Environmental Report 2011:

**Michele Andalini** Cementir Holding  
**Preben Andreasen** Aalborg Portland  
**Alessandra Crisari** Cementir Holding  
**Yücel Kilit** Cimentas  
**Monica Mordini** Cementir Italia  
**Francesco Paolucci** Cementir Holding  
**Massimo Parissi** Cementir Holding  
**Luigi Zizzari** Cementir Holding

