



2013

ENVIRONMENTAL  
REPORT

Seventh Edition

2013

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REPORT  
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1.



# GENERAL INFORMATION AND GROUP PRESENTATION

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## LETTER FROM THE CHAIRMAN

In a time like the present, characterised by environmental and social changes that were unthinkable up until a few years ago, the demand for increasingly limited resources is growing at a dizzying rate, from our global population of 7 billion inhabitants. The increased purchasing power of progressively larger groups of the population is radically changing living conditions and life expectancy in countries that, up until the last century, were initially considered as "developing", then "emerging" and who are now living in a booming economy experiencing high growth rates.



In this context, environmental reporting has become a useful tool that allows companies to understand their exposure to these changes and to evaluate new business opportunities.

This year marks the 7<sup>th</sup> edition of the Cementir Group's Environmental Report, published together with the Financial Report, prepared using the data collected and analysed from its operating companies. Cementir aims to offer its stakeholders a more detailed and complete picture of the Group's activities and operating performance, in order to share information about its environmental footprint along with more traditional economic indicators. In recent years our desire to measure sustainability has grown hand in hand with our efforts to build relationships and sponsor initiatives to support local communities.

The year 2013 was a positive one for the Group, marked by significant improvements in workplace accident rates (a 17.2% decrease in the accident frequency rate and 38.5% decrease in the severity rate) thanks to prevention programmes. This performance was also experienced in Italy where, as of 31 December 2013, our Maddaloni, facility reported a record 523 days without injuries. We have continued our quest to use an increasing amount of alternative energy sources as opposed to fossil fuels, but above all we are striving to consistently improve the efficiency of energy production from waste, both electrical and thermal.

Furthermore, in December of last year, the Board of Directors of Cementir Holding launched its Industrial Plan 2014-16 that laid the foundation for the Group's further growth as a result of the positive performance of operations in 2013. More specifically, steps will be taken to make internal operations even more efficient and to reduce operating costs by increasing the use of alternative fuels and renewable energy, and to ensure that the business contributes to waste management. Finally, the Group's entire management team is committed to complying with, and even enforcing, environmental and safety standards even in its plants where the local legislation does not require them: this demonstrates the company's commitment to applying a sustainable development model to its operations.

In the following pages you will find a description of the performance results and future commitments that provide a clear understanding of our daily commitment to achieving sustainable growth.

**Francesco Caltagirone Jr.**  
Chairman and Chief Executive Officer

## 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.

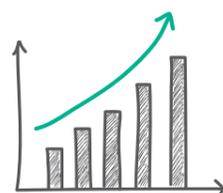
### VISION

We strive to be a dynamic and accountable Company that creates value for its stockholders, clients and employees, increasing our role in emerging markets while respecting 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.



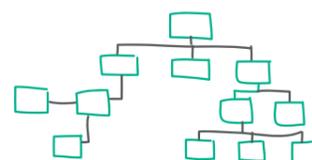
#### Integrated diversity

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 Operational 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 competence 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.

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

### GUIDELINES

Cementir Holding promotes 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.

### CORPORATE SOCIAL RESPONSIBILITY

The Cementir Group has long pursued a sustainable approach to its business in the belief that acting with respect for environmental and social values creates lasting value for the Company and its stakeholders. An important element of this process is the annual publication of the Group's Environmental Report, now in its seventh edition, which clearly explains to our stakeholders who we are, what we do, what strategies we have chosen and what progress we have made in terms of economic, environmental and social sustainability.

All employees are required to follow a Corporate Social Responsibility policy that lays out a set of principles, conducts and actions for protecting the environment, society and the health of workers. The Group companies are in full compliance with the laws and regulations of the countries in which they operate, following a policy of social and environmental responsibility that translates into effective programs and actions ranging from improving production processes to projects that benefit local communities.

In 2011, the Group's concern for the environment and issues relating to climate change and atmospheric emissions took the form of, among other things, joining the Carbon Disclosure Project (CDP), a non-profit organisation operating on behalf of 722 institutional investors that manages USD 87,000 million in assets, which conducted a study of 4,000 companies around the world concerning the actions they have taken to reduce the effects of climate change.

**01** For more than twenty years, Aalborg's Danish factory has provided the nearby city with about 495,000 MWh of thermal energy, capable of meeting the heating needs of more than 36,000 households.

The Group Research Centres cooperate with leading European universities for the development of new types of clinker and supplementary cementitious materials that meet the growing demand for more sustainable solutions.

**02**

**03** Waste and scraps from other industries can be recycled and used as fuel and raw materials in cement production. This practice significantly reduces the overall impact on the environment and promotes the efficient use of resources.

In Turkey, the Çimentoş Education and Health Foundation, founded in 1986, provides financial assistance and educational materials to families and schools in partnership with the authorities of the surrounding provinces.

**04**

### GROUP PROFILE

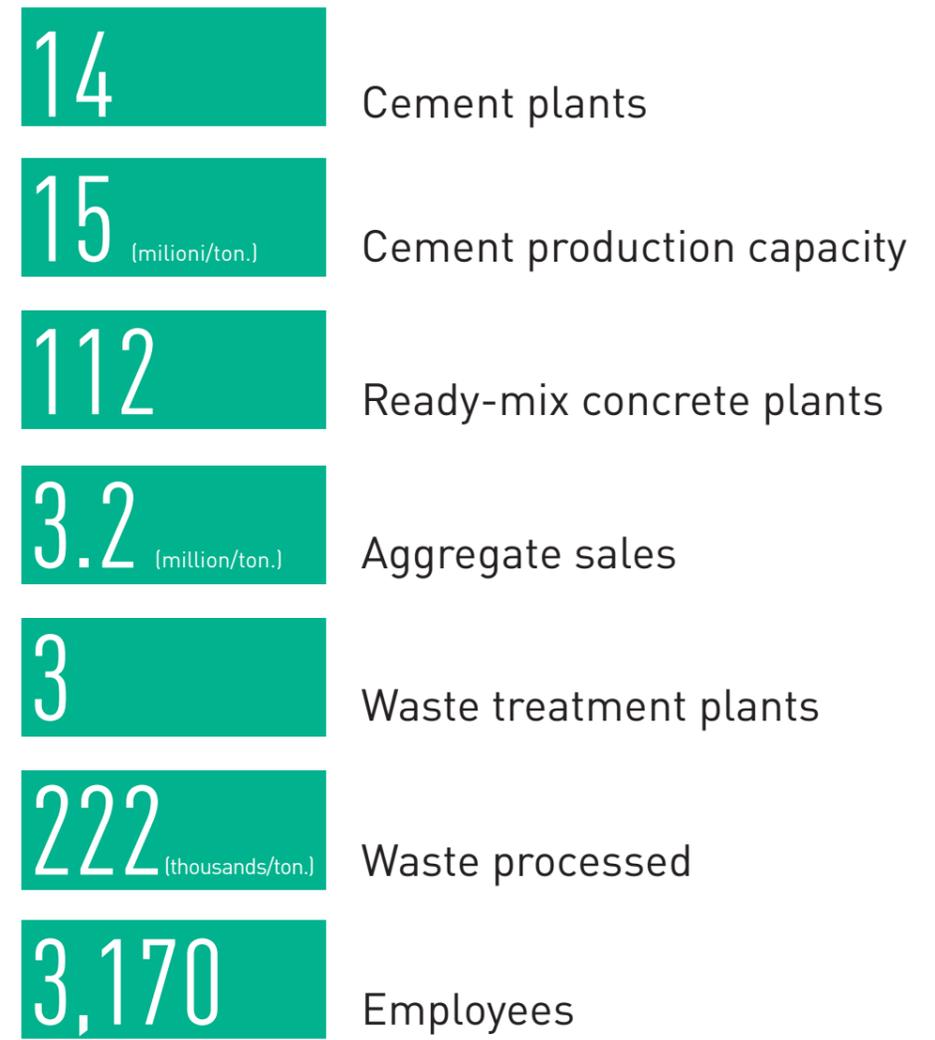
Cementir Holding is an Italian multinational company that produces and distributes white and grey cement, ready-mix concrete, aggregates and concrete products. The company is a member of the Caltagirone Group and has been listed on the Italian Stock Exchange (Borsa Italiana) since 1955, currently in the STAR segment. Through its subsidiaries Aalborg Portland, Cimentas and Cementir Italia, Cementir Holding operates in 15 countries across 4 continents, selling 9.7 million tons of cement, 3.7 million m3 of ready-mix concrete and 3.2 million tons of aggregates in 2013.

Cementir Holding is the largest producer and exporter of white cement in the world, with production sites in Denmark, Egypt, China, Malaysia and the United States. The Group's white cement factories have a capacity of 3 million tons and the cement produced is shipped to over 60 countries throughout the world.

Through its subsidiary, Sinai White Portland Cement, Cementir Holding runs the largest white cement factory in the world, located in El-Arish, Egypt.

The Cementir Group is the sole producer of cement in Denmark, the 4th leading producer in Italy and among the top producers in Turkey, in addition to being the leading producer of ready-mix concrete in Scandinavia.

Since 2009, Cementir Holding has also been operating in the municipal and industrial waste management and renewable energy sector in Turkey and England through its subsidiary, Recydia.



## WASTE MANAGEMENT ACTIVITIES

In 2009, the Cementir Group founded Recydia to focus its efforts on waste management, waste-to-energy and renewable energy. Recydia's main objective is to recycle waste and produce alternative fuels and energy via biological and advanced thermal technologies and minimizing landfill.

In this regard, Recydia has adopted applicable and proven integrated solutions for the waste and has invested in the development and deployment of innovative technologies in waste management and waste to energy such as sorting, recycling, bio drying and pure advanced pyrolysis. The priority of Recydia is to recover and recycle waste and transform it into energy. The landfill is the last option that has to be preferred for a safe and controlled waste disposal.

Süreko, the subsidiary of Recydia which is working on Industrial and Hazardous waste management, has integrated Management Systems Certifications which are ISO 9001 Quality, ISO 14001 Environmental and OHSAS 18001 Occupational Health and Safety, from 31st of December 2010.

Süreko's Integrated Waste management facility covers the following main activities and processes:

- Refuse Derived Fuel (RDF) Facility
- Industrial Waste Chemical Facility
- Energy Production from Waste
- Metal Recycling
- Package Waste Collection and Sorting
- Industrial Waste Landfill
- Industrial Waste Temporary Storage
- Waste Cable Recycling
- Household Waste Bio drying
- Waste Management Consultancy
- Waste Logistics
- Quality Control and Laboratory Services.

Finally, Süreko contributes to our Group's cement business by providing cost savings from alternative fuels, which also helps to preserve the environment with less CO<sub>2</sub> emissions and to prevent pollution and contamination. In this direction, within the scope of Sureko's activities in 2013, the Refuse Derived Fuel (RDF) produced replaced 21,350 tons of fossil fuels, corresponding to 70,400 equivalent tons of CO<sub>2</sub>. In addition to this, more than 70,400 equivalent tons of CO<sub>2</sub> were saved by recovering packaging waste.

In 2011, the Recydia subsidiary Hereko signed a 25-year contract with the Istanbul Metropolitan Municipality to handle the Municipal Solid Waste programme until the year 2036. The Hereko Komurcuoda plant located in Sile/Istanbul, has an input capacity of 2,000 tons/day of municipal solid waste. Thanks to the initial investment made in 2012, today Komurcuoda is the largest Integrated Mechanical Biological Treatment facility in Europe and the first of its kind in Turkey.

Hereko processes waste through the following processes and productions:

- Recycling
- Bio drying
- Solid Recovered Fuel (SRF)
- Plastic film pelletizing (valorisation)
- Quality control and laboratory services.



Neales Waste Management Holdings Limited (NWMH) based in Blackburn, UK, is currently the company that controls Neales Waste Management, Neales Direct Services and Quercia Ltd. In 2013 major steps were taken to present Neales to the market as a single organisation under the Neales Waste Management trademark, in order to ensure a coherent approach and create more synergies and efficiencies between the various subsidiaries. NWM is a leading regional supplier of waste management services throughout the north west of England, providing waste processing, recycling and disposal services in an area that spans from Lancaster, in the northern region of the country, reaching Preston, Manchester, Liverpool and Cheshire. NWM is a proud holder of certifications including ISO 9001, ISO 14001, OHSAS 18001, Investors in People (IIP) and The Contractors Health and Safety Assessment Scheme (CHAS).

The company has two main operational divisions:

- The Blackburn operating area, responsible for providing complete waste management solutions, such as waste processing, recycling, general dry waste and hazardous waste disposal. These services are also provided on the customers' sites.
- Direct services, responsible for maintaining the contract with Lancashire County Council for the operation of two Waste Transfer Stations; in Middleton and Preston.

Quercia is the company that manages the landfill site in Clayton Hall, near Blackburn, to which residual waste is delivered by the Lancashire County Council under a long term contract that was awarded in 2009, as well as by Neales Waste Management Limited and other small waste management operators. The Clayton Hall landfill is equipped with a modern system to collect the bio-gas generated by the biodegradable fraction of the landfilled waste. 1.2 MWh of renewable energy is generated from the collected bio-gas which is then prevented from being depleted into the atmosphere.

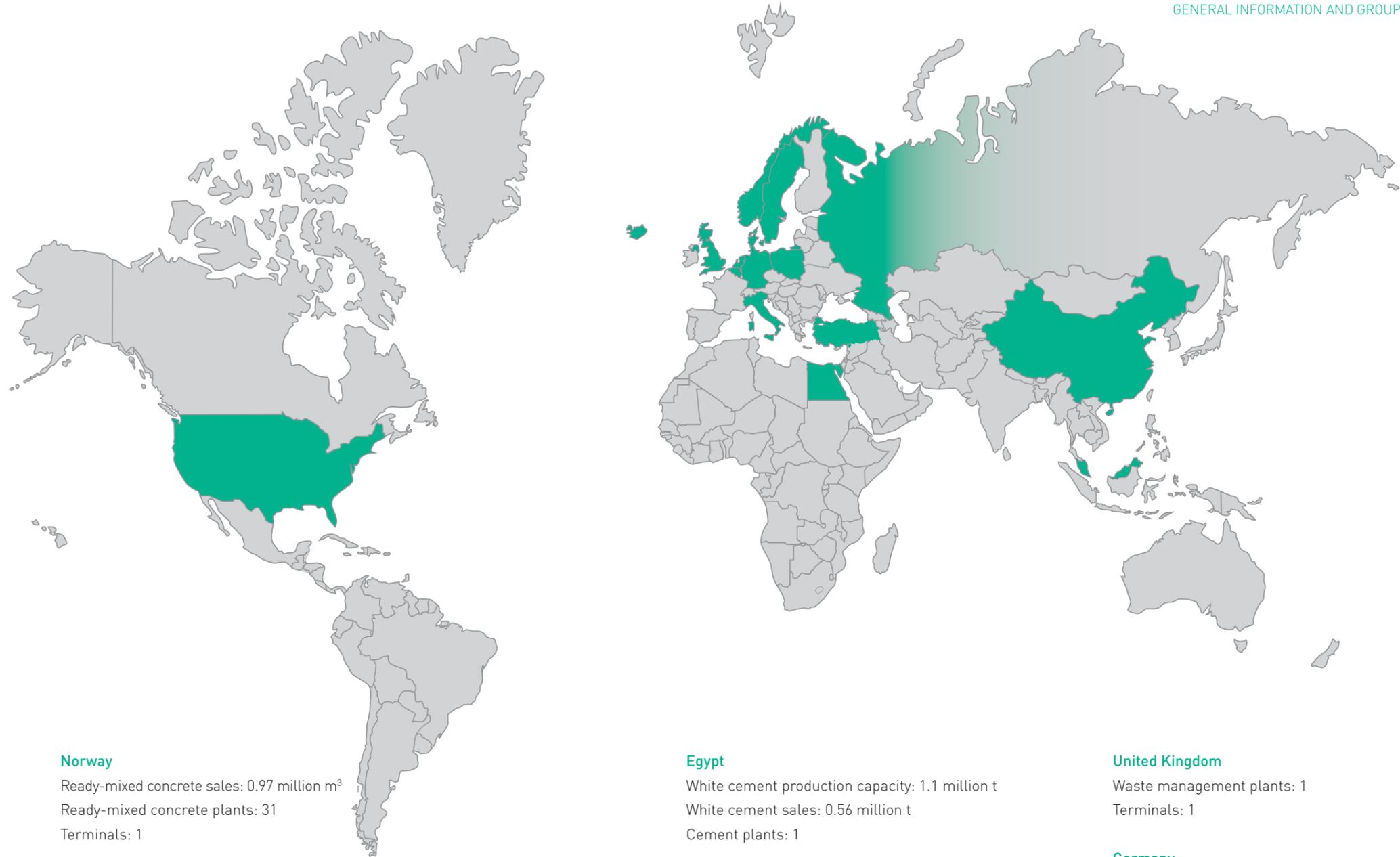
Recydia will continue its commitment to environmental protection through a combination of waste recycling and energy recovery and by using the finest technologies available for the treatment of residual fractions in order to increase the rate of material and energy recovery. The company will continue to focus on the development of the next generation of systems and technologies that are fully aware of the importance of innovating processes and solutions and focusing on reliability, sustainability and social and environmental responsibility in line with its slogan: 'Sustainable Resource Management'.

KULA PLANT - TURKEY



**INTERNATIONAL PRESENCE**

Grey cement sales:	7.8 million t
White cement sales:	1.9 million t
Ready-mixed concrete sales:	3.7 million m <sup>3</sup>
Aggregates sales:	3.2 million t
Cement plants:	14
Terminals:	20
Ready-mixed concrete plants:	112
Quarries:	8
Cement products plants:	1
Waste management plants:	3



**Denmark**  
 Grey cement production capacity: 2.1 million t  
 White cement production capacity: 0.85 million t  
 Grey cement sales: 1.30 million t  
 White cement sales: 0.53 million t  
 Ready-mixed concrete sales: 1.02 million m<sup>3</sup>  
 Aggregates sales: 0.54 million t  
 Cement plants: 1 (7 kilns)  
 Ready-mixed concrete plants: 42  
 Terminals: 9  
 Quarries: 3

**Norway**  
 Ready-mixed concrete sales: 0.97 million m<sup>3</sup>  
 Ready-mixed concrete plants: 31  
 Terminals: 1

**Sweden**  
 Ready-mixed concrete sales: 0.17 million m<sup>3</sup>  
 Aggregates sales: 2.69 million t  
 Ready-mixed concrete plants: 10  
 Quarries: 5

**Turkey**  
 Grey cement production capacity: 5.4 million t  
 Grey cement sales: 4.76 million t  
 Ready-mixed concrete sales: 1.49 million m<sup>3</sup>  
 Cement plants: 4  
 Ready-mixed concrete plants: 13  
 Waste management plants: 2

**Italy**  
 Grey cement production capacity: 4.3 million t  
 Grey cement sales: 1.76 million t  
 Ready-mixed concrete sales: 0.08 million m<sup>3</sup>  
 Cement plants: 4  
 Ready-mixed concrete plants: 16  
 Terminals: 3

**Egypt**  
 White cement production capacity: 1.1 million t  
 White cement sales: 0.56 million t  
 Cement plants: 1

**China**  
 White cement production capacity: 0.7 million t  
 White cement sales: 0.64 million t  
 Cement plants: 1

**Malaysia**  
 White cement production capacity: 0.2 million t  
 White cement sales: 0.20 million t  
 Cement plants: 1

**USA**  
 White cement production capacity: 0.26 million t  
 Cement plants: 2  
 (24.5% joint venture with Heidelberg and Cemex)  
 Cement products plants: 1  
 Terminals: 1

**United Kingdom**  
 Waste management plants: 1  
 Terminals: 1

**Germany**  
 Terminals: 1

**Iceland**  
 Terminals: 1

**Holland**  
 Terminals: 1

**Poland**  
 Terminals: 1

**Russia**  
 Terminals: 1

## KEY INDICATORS

## CEMENTIR GROUP

	2013	2012	2011	Unit of measurement
<b>Performance Indicators</b>				
Grey and white cement produced	9,287	9,496	10,468	Metric tons/thousands
Ready-mix concrete sold	3,736	3,580	3,843	m3 thousands
Revenues	988.6	976.2	933.0	EUR/millions
Net profit	40.1	16.5	3.0	EUR/millions
Capital expenditure of property, plants and equipment and intangible assets	81.7	87.5	73.2	EUR/millions
Employees	3,170	3,307	3,200	number

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

	2013	2012	2011	Unit of measurement
<b>Environment</b>				
CO <sub>2</sub> emissions per metric ton of cement produced	0.72	0.71	0.74	t/TCE
Alternative raw materials	6.68	9.01	6.51	%
Electricity consumed	4,173	4,220	4,515	tj
Direct energy consumed	32,362	32,623	34,799	tj
from alternative sources	7.3	6.6	6.1	%
Iso 14001 certifications	9	9	8	number

## READY-MIX CONCRETE FACILITIES IN DENMARK, NORWAY, TURKEY AND ITALY

	2013	2012	2011	Unit of measurement
<b>Environment</b>				
Raw materials	7.9	7.3	7.8	metric tons/million
% alternative raw materials	1.6	1.6	1.6	%
Water consumption	548,449	591,208	588,051	m3
% recycled water	12.3	11.8	22.9	%

## CEMENTIR GROUP

	2013	2012	2011	Unit of measurement
<b>Health &amp; Safety</b>				
Frequency rate	14.8	17.8	17.6	
Severity rate	0.30	0.49	0.31	
Fatal accidents	0	0	0	number
Hours of HSE training per employee	10.8	5.8	5.2	hours/employee
HSE investments	15.6	9.6	12.3	EUR/millions
OHSAS 18001 Certifications	5	5	5	number

## INTRODUCTION

Through this Environmental Report, the Cementir Group seeks to provide a clear, transparent and immediate usable 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 2013.

The document is addressed to all of its 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 for all the cement production facilities in Italy, Turkey, Denmark, Egypt, Malaysia and China and for all the ready-mix 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.

The various sections of the Environmental Report include examples of specific projects undertaken by the Cementir Group to improve environmental performance and ensure health and safety in the workplace.



IPOH PLANT - MALAYSIA

## COMPANY BODIES

<b>Board of Directors</b>	<i>Chairman</i>	Francesco Caltagirone Jr.
	<i>Vice Chairman</i>	Carlo Carlevaris
	<i>Directors</i>	Alessandro Caltagirone Azzurra Caltagirone Edoardo Caltagirone Saverio Caltagirone Flavio Cattaneo Mario Ciliberto Fabio Corsico Mario Delfini Paolo Di Benedetto Alfio Marchini Riccardo Nicolini
<b>Board of Auditors</b>	<i>Chairman</i>	Claudio Bianchi
	<i>Standing auditors</i>	Federico Malorni Giampiero Tasco
<b>Internal Control and Risk Committee</b>		Paolo Di Benedetto Flavio Cattaneo Alfio Marchini
<b>Manager responsible for financial reports</b>		Massimo Sala
<b>Supervisory body (Italian Legislative Decree 231/2001)</b>		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, a 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, on transparency in the Company’s decision-making process and an effective system of internal controls.

## BOARD OF DIRECTORS

The Board of Directors of Cementir Holding SpA was appointed by the shareholders on 18.04.2012 for a term of three years (2012-2014), which shall expire upon the approval of the financial statements as of 31.12.2014. The Board is currently composed by thirteen members, the majority of which are non-executive; three 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 of the company, 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.

## 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 controls 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 requisites of independence and honourability and with advanced and specific professional skills.

## OTHER COMPANY BODIES

Other Company Bodies include: the Executive Committee, the Internal Control and Risk Committee and the Remuneration Committee.

The Executive Committee, consisting of a 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 and Risk Committee consists of three independent Directors.

The Remuneration Committee, consisting of a majority of independent Directors, makes proposals to the Board of Directors for the remuneration of the executive directors and/or those covering specific roles. For example, it may suggest the use of instruments for variable incentives related to the economic results of the company and/or the achievement of specific objectives which may include stock options. 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 the specific responsibilities of the executive directors themselves. 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.

**THE INTERNAL CONTROL AND RISK MANAGEMENT SYSTEM**

The Company's internal control and risk management 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 and risk management system and, with the assistance of the Internal Control and Risk Committee, defines the guidelines for the internal control and risk management system that were approved at the meeting of 7 March 2013.

This document specifies roles and responsibilities of the main control bodies such as the Internal Control Committee, the appointed head of the internal control and risk management system, the Chief Internal Audit Officer and the Supervisory Body pursuant to former Italian Legislative Decree 231/2001.

The Internal Control and Risk Committee is responsible for:

- a. assisting the Board of Directors in defining and updating these guidelines;
- b. assisting the Board of Directors in evaluating the internal control and risk management system;
- c. assisting the Board of Directors, at least once a year, in approving the work plan prepared by the head of the Internal Audit, in conjunction with Statutory Auditors (and the Director in charge of the internal control and risk management system);
- d. examining periodic reports that evaluate the internal risk management control system, and those of particular relevance prepared by the internal audit department;
- e. monitoring the independence, adequacy, effectiveness and efficiency of the internal audit department that reports to the Board of Directors at least semi-annually on its activities and the adequacy of the internal control and risk management system;
- f. evaluate, together with the manager responsible for preparing the corporate accounting documents and the Statutory Auditor and the Board of Auditors, the correct application of accounting principles and their uniformity for the purposes of preparing the consolidated financial statements.

The Internal Audit Department is responsible for verifying that the internal control and risk management 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 Director in charge of the internal control and risk management system 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.

**ORGANIZATION AND CONTROL MODEL ITALIAN LEGISLATIVE DECREE 231/2001**

In 2008 the company adopted an Organization and Control Model as per former Italian Legislative Decree no. 231 of 8 June 2001. The organization model, the result of the analysis of risks-violations 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 suitable for preventing the violations provisioned in the aforementioned regulation. Following the update of Italian Legislative Decree no. 231/01 and the introduction of new types of violations, including those indicated in Law 190/2012 regard the "Rules for the prevention and repression of corruption and lawlessness in the public administration", the Company has updated the Organization and Control Model, the contents of which were formally approved by the Board of Directors July 26, 2013.

This model represents an additional element of rigor and sense of responsibility in internal relations and with the outside world while offering shareholders adequate assurance for an efficient and fair management. The Model contains a list of procedures designed to cover risks associated with activities susceptible to or instrumental in the perpetration of violations 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 is built.

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

The Code was distributed to the company's staff and is available on the website [www.cementirholding.it](http://www.cementirholding.it). With the adoption of the Model, the Board of Directors of Cementir Holding appointed a Supervisory Body composed of one independent external member and one internal member (Head of Internal Auditing).

The Supervisory Body is responsible for:

- a. updating the Organization and Control Model;
- b. distributing the Model;
- c. assessing the Model's actual ability to prevent the commission of violations provisioned by Italian Legislative Decree 231/01;
- d. conducting periodic checks on the actual implementation of the Model;
- e. monitoring the validity and adequacy of the Model;
- f. 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 activities performed by the company and the relevant documentation.

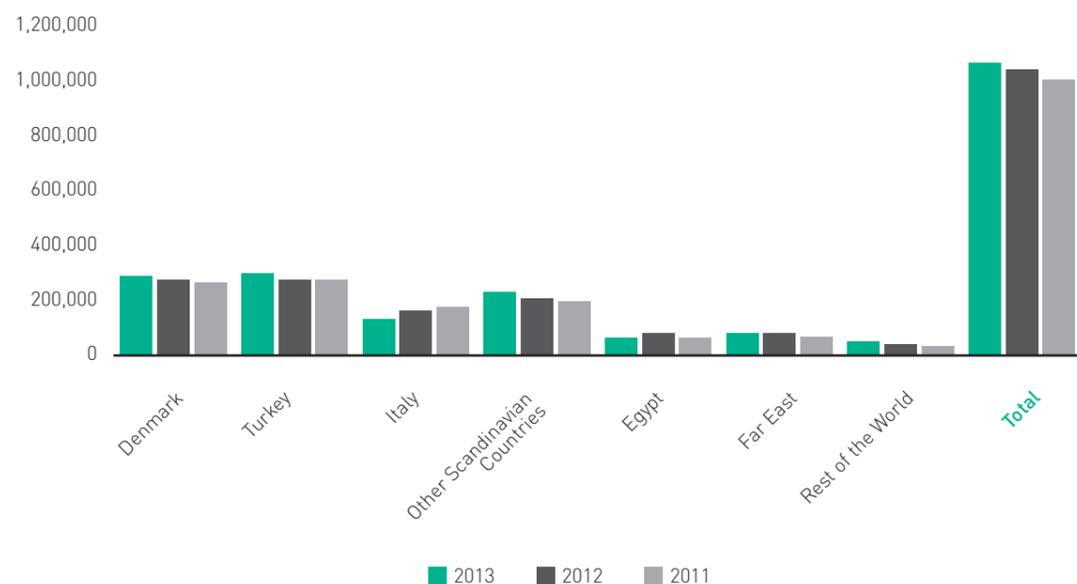


Lab "Paving Our Future"  
MILAN - ITALY - 2013  
CEMENTIR GROUP ANNUAL MEETING

## 2013 GROUP RESULTS

Revenues reached EURO 988.6 million (an increase of 1.3% over 2012, equal to EUR 976.2 million). The EBITDA, which increased by 22.9%, was EUR 169.7 million (compared to EUR 138.1 million in 2012). Finally, operating income increased 59.0% to EUR 76.7 million against EUR 48.2 million for the same period in 2012.

## REVENUES BY GEOGRAPHICAL PRODUCTION AREA



	2013	2012	2011
Denmark	257,711	252,714	249,896
Turkey	272,334	254,589	254,356
Italy	115,705	141,044	147,843
Other Nordic Countries	208,258	189,869	179,697
Egypt	53,201	60,528	50,786
Far East	68,636	64,054	49,966
Other	40,967	34,498	21,149
<b>Total</b>	<b>1,016,812</b>	<b>997,296</b>	<b>953,693</b>

Cementir Holding closed 2013 with a Group net income of EUR 40.1 million, compared to EUR 16.5 million for the same period in 2012 (+143.7%).

The company has recommended a dividend for the year 2013 of EUR 0.08 per share, corresponding to a total of EUR 12.7 million. In 2013, the Group made investments to reduce the environmental impact of production activities in the amount of EUR 8.96 million, compared to EUR 12.8 million in 2012 (-30%).

Investments to ensure safety in the workplace and to protect worker health were made in the amount of EUR 2.1 million, marking a significant increase over the same item in 2012. Over the four-year period 2010-2013 the Group invested a total of EUR 56 million in the environment and in workplace safety.

## 2013 PERFORMANCE

HSE Objectives	Status	Comment
TO REDUCE SPECIFIC EMISSIONS		NOx emissions for t/TCE decreased by 3.16% compared to last year
		SO <sub>2</sub> emissions for t/TCE increased by 8.86% compared to last year
		CO <sub>2</sub> emissions for t/TCE increased by 1.00% compared to last year
TO CONTAIN ENERGY CONSUMPTION		Thermal energy consumption for t/TCE decreased by 0.25%
		Electrical energy for t/TCE decreased by 0.40%
		Use of recycled raw materials decreased by 25.88% compared to 2012
		Thermal energy from alternative sources for t/TCE increased by 11.94%
TO INCREASE THE USE OF ALTERNATIVE FUELS IN MANUFACTURING		Water consumption in litres per metric ton of cement produced increased by 2.3% compared to 2012
		The frequency ratio improved by 17.2% compared to 2012
TO IMPROVE ACCIDENT RATIOS, ESPECIALLY SEVERITY RATIOS		The severity ratio improved by 38.3% compared to 2012
		The number of plants with certifications remained the same
TO MAINTAIN AND INCREASE THE NUMBER OF ISO 14001 AND OHSAS 18001 ENVIRONMENTAL CERTIFICATIONS		The number of plants with certifications remained the same

## 2014 Objective

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



# 2.



## ENVIRONMENTAL PERFORMANCE

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## 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 2013 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 (tTCE), 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 2013, 2012 and 2011. 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 the following 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 2013.

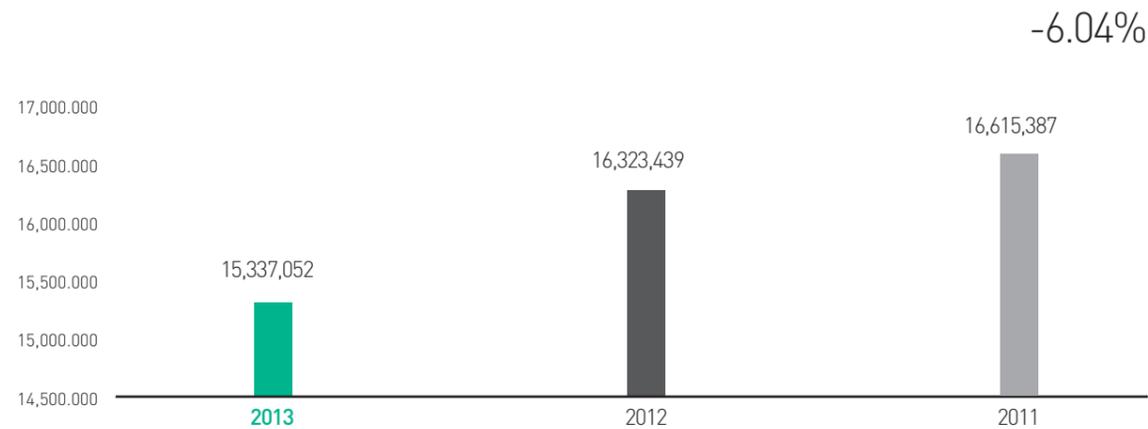
**NATURAL RESOURCES**

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 2013, the Cementir Group's plants used a total of about 15.3 million metric tons of raw materials to manufacture cement, marking a slight decline (-6%) over last year's figure.

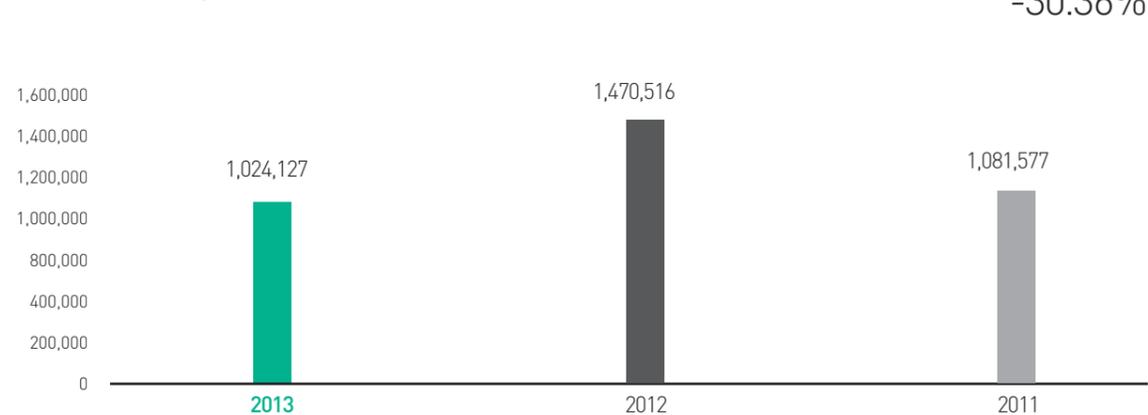
In order to contain or reduce the consumption of non-renewable raw materials, the Cementir Group promotes the use of alternative raw materials (thus called since they are not extracted from quarries but rather derive from other production processes), for example foundry sand and blast furnace slag.

In 2013 Cementir Group plants used alternative raw materials, replacing about 6.7% of the non-renewable natural raw materials. In particular, alternative raw materials made up more than 34% of the total raw materials used at the Taranto and Arquata plants (average rate of the two plants). Another strategy implemented by the plants of 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 2013 the Group's plants reused more than 1,024,000 metric tons of internally recovered materials.

**USE OF RAW MATERIALS**  
(2013 vs 2012) Raw materials (metric tons)



**CONSUMPTION OF RECYCLED RAW MATERIALS**  
(2013 vs 2012) Recycled raw materials (metric tons)



**ENERGY RESOURCES**

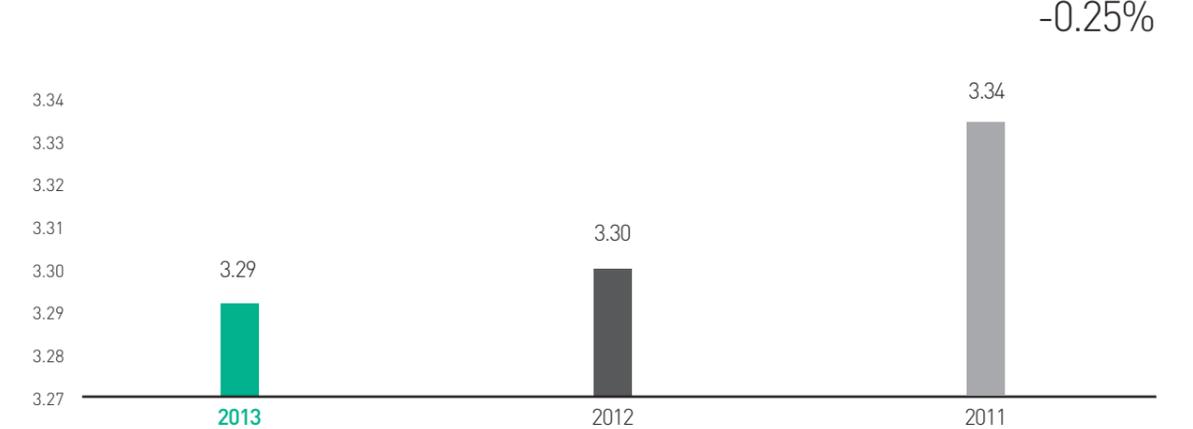
The cement production process consumes considerable energy during the various processing stages. The energy used in the cement manufacturing plants is either electric or thermal. This latter is mainly used to start up and operate the kilns (1500 °C) and to operate the burners or heaters needed to increase 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 2013 the Cementir Group's facilities used approximately 32,300 TJ of thermal energy and 4,170 TJ of electric energy with a consumption coefficient per metric ton of cement produced, respectively equal to 3.29 GJ/tCE and 0.43 GJ/tTCE. Thermal energy consumption decreased by 0.25% compared to 2012 while electric energy consumption was reduced by 0.40%.

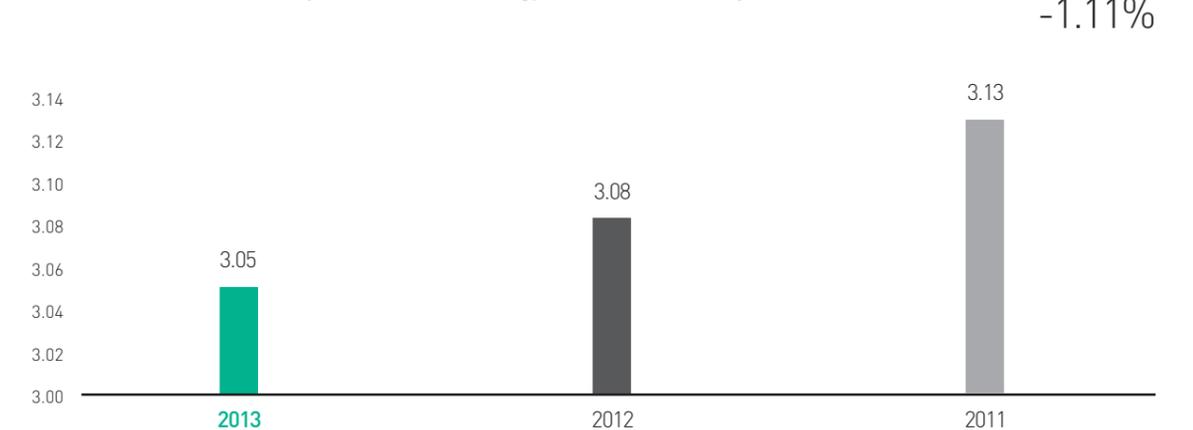
The thermal energy needed to manufacture cement is traditionally produced by using fossil sources (combustible oil, pet coke, coal, natural gas). The Cementir Group, in compliance with the permits issued by local authorities and the applicable legislation of the countries in which it operates, promotes the use of alternative fuels in place of traditional fossil fuels. In 2013 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 secondary solid fuel (RDF).

In 2013 the Cementir Group used alternative fuels to produce 7.3% of total thermal energy. In particular, the use of such fuels was appreciable in the Aalborg plant in Denmark (approximately 33.1% for the production of grey) and the Edirne plant in Turkey (13.8%). Furthermore, in the same plant in Aalborg, a portion of the heat recovered from exhaust gases is used to heat the town. In 2013 the heat recovered was approximately 0.60 GJ per tTCE produced, serving a population of approximately 36,000 households.

**THERMAL ENERGY CONSUMPTION**  
(2013 vs 2012) Thermal energy (Gj/tTCE)

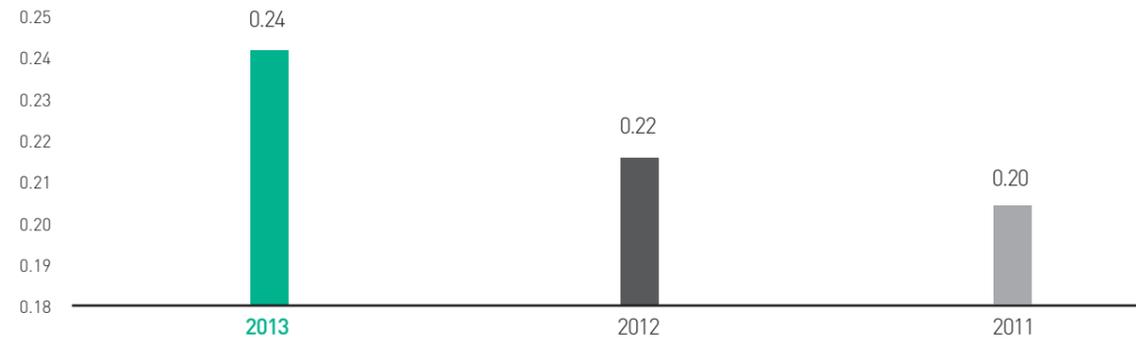


**USE OF THERMAL ENERGY FROM FOSSIL FUELS**  
(2013 vs 2012) Consumption of thermal energy from fossil fuels (Gj/tTCE)



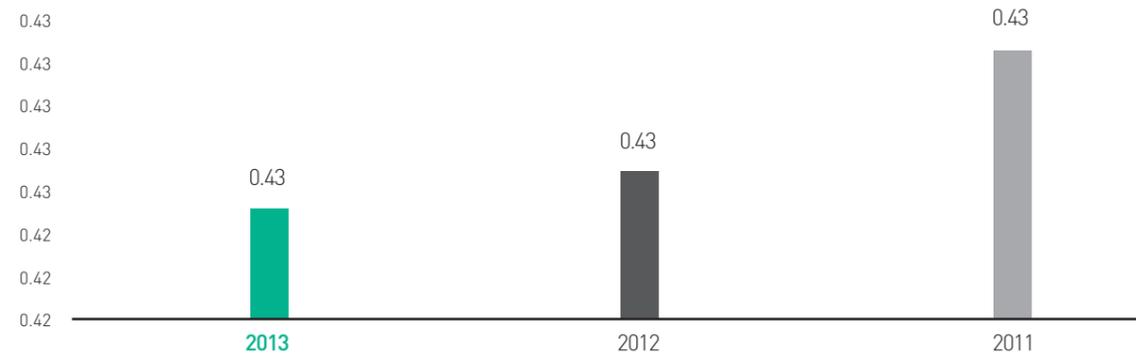
**USE OF THERMAL ENERGY FROM ALTERNATIVE FUELS**  
(2013 vs 2012) Consumption energy from alternative fuels (Gj/tTCE)

+11.94%



**ELECTRIC ENERGY CONSUMPTION**  
(2013 vs 2012) Electric energy (GJ/tTCE)

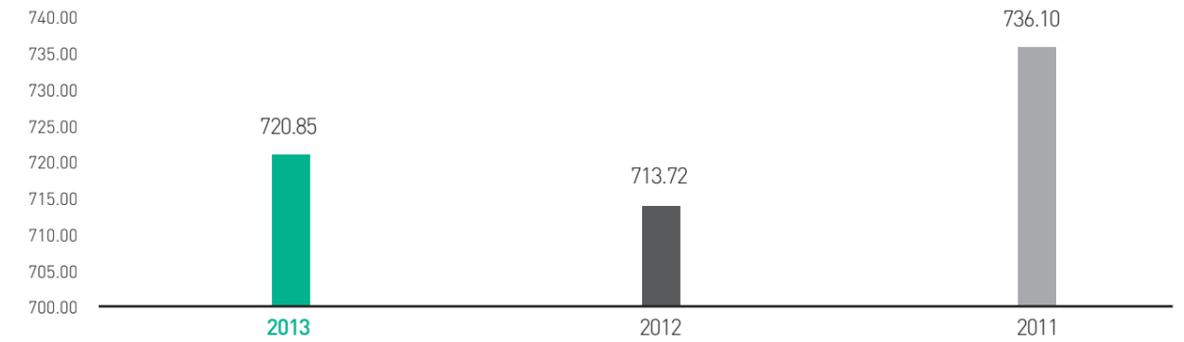
-0.40%



**ATMOSPHERIC EMISSIONS**

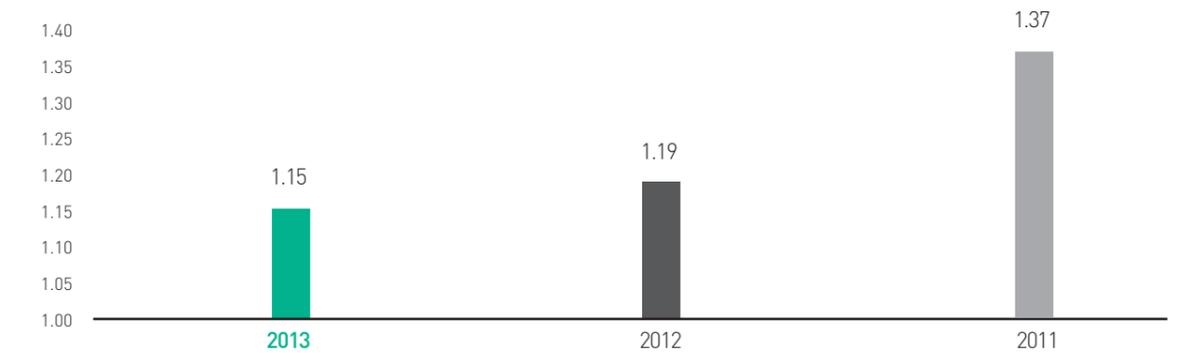
**EMISSION RATE OF CO<sub>2</sub>**  
(2013 vs 2012) Carbon dioxide CO<sub>2</sub> per metric ton of cement produced (kg/tTCE)

+1.00%



**EMISSION RATE OF NITROGEN OXIDES**  
(2013 vs 2012) Nitrogen oxides Nox (kg/tTCE)

-3.16%



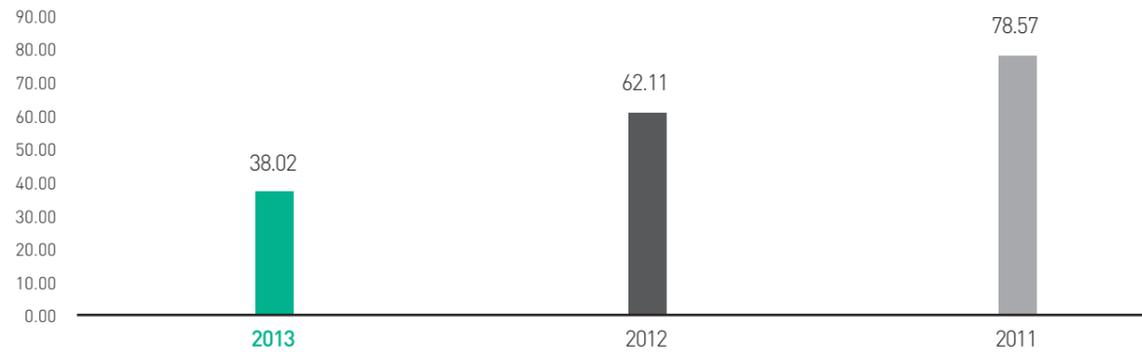
The cement manufacturing process generates atmospheric emissions, mainly carbon dioxide, dust and nitrogen and sulphur oxides.

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 pre-calcination of the raw materials and through the burning of fossil fuels. Carbon dioxide emissions by Cementir Group plants in 2013 equalled a total of 7.07 million metric tons, resulting to an emission coefficient per metric ton of cement of 720.85 (kg/t TCE), a 1% increase over the previous year.

Emissions of nitrogen oxides (NO<sub>x</sub>) are linked to combustion, in particular the types of fuel used. In 2013 the NO<sub>x</sub> emissions of Cementir Group facilities were 11,318 metric tons, equal to an emission rate per metric ton of cement (kg/t TCE) of 1.15; resulting in a 3.16% reduction from the figure from 2012. Emissions of sulphur dioxides (SO<sub>2</sub>) are linked to the presence of sulphur in the fuels and raw materials used. In 2013, SO<sub>2</sub> emissions of the Cementir Group facilities amounted to 635 metric tons, equal to an emission rate per metric ton of cement (gr/t TCE) equal to 129.77, marking an increase over 2012 (+8,86 %). In 2013, dust emission from Cementir Group facilities amounted to 373 metric tons, equal to an emission rate per metric ton of cement (g/t TCE) of 38.02.

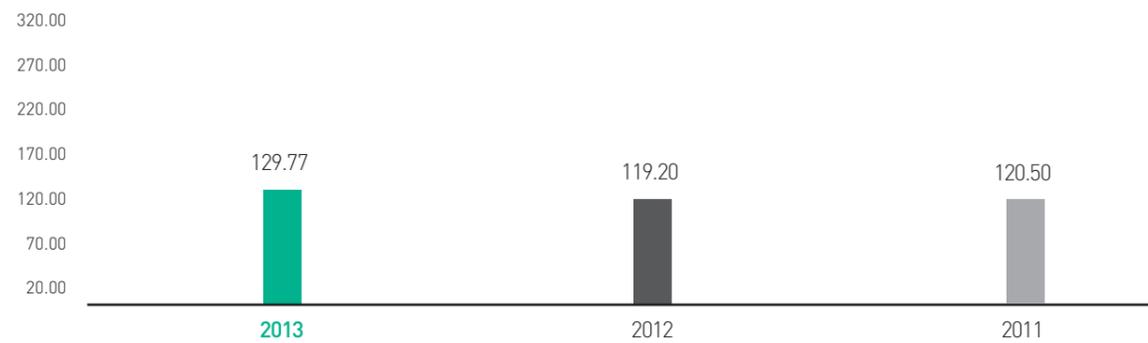
**DUST EMISSIONS**  
(2013 vs 2012) dust per metric tons of cement produced (gr/tCE)

-38.79%



**EMISSION RATE OF SULPHUR DIOXIDES**  
(2013 vs 2012) Sulphur dioxide SO2 per metric ton of cement produced (gr/tCE)

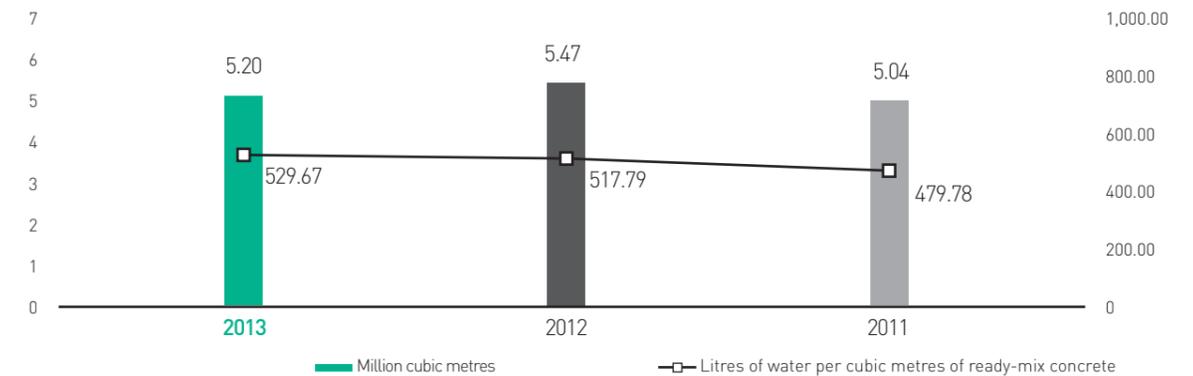
+8.86%



**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 2013 the Cementir Group facilities used a total of 5.20 million cubic metres of water against 5.47 million cubic metres of water in 2012. 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 5,414 thousand cubic metres, compared to a rate of 6,421 thousand cubic metres in the same period in 2012. The average water consumption per ton of cement produced in 2013 was 529.67 litres/tCE marking an increase over the figure recorded for 2012. This variation is mainly due to the increase in white cement produced, the production cycle of which requires a greater amount of water compared to that of grey cement.

**SPECIFIC WATER CONSUMPTION RATE**  
(2013 vs 2012) Specific water consumption rate



**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 2013 the inbound transport of materials and the outbound transport of products were mainly conducted using trucks; for the Aalborg, Izmir, Ipoh and Anqing facilities ships were also used, thanks to the existence of the necessary infrastructure.

With regard to incoming materials:

- 88.57% arrived at the facility via truck (76.14% in 2012);
- 5.06% arrived via ship (5.73% in 2012);
- 6.37% arrived via the conveyor belt that connects the quarry with the plant (18.13% in 2012). This movement of material is considered as external transport.

In 2013, 77.11% of products exiting Cementir Group facilities were transported by trucks and 22.89% of

the total by ships (in 2012 the respective figures were 78.91% and 21.09% of the total). The following table shows the percentage of outgoing products transported by ship for the years 2013, 2012 and 2011.

Plant	Country	% of products shipped by sea		
		2013	2012	2011
Aalborg	Denmark	71.0	72.0	67.5
Izmir	Turkey	30.2	28.0	31.5
Ipoh	Malaysia	78.5	78.3	79.9
Anqing	China	51.0	51.0	55.0



## 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 2013 amounted to 110,640 metric tons, marking an increase over the figure reported in the corresponding period in 2012 (44,217 metric tons). The amount of waste destined for recovery was 23.5% of the total, marking a slight increase over the corresponding period in 2012 (23.2%).

## NOISE EMISSIONS

Acoustic emissions are generated in various stages 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-MIX CONCRETE PRODUCTION CYCLE AND ENVIRONMENTAL IMPACT

Ready-mix 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-mix concrete is packaged and produced in concrete-mixing plants, in which the mix is dosed out directly in batching plants. The mixing stage 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-mix 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 2013, 2012 and 2011.

### 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 ready-mix concrete output for 2013.

**NATURAL RESOURCES**

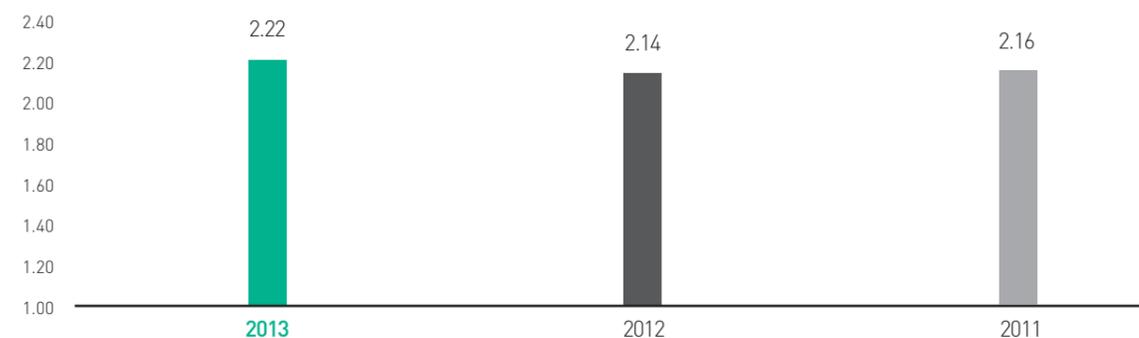
In 2013, the Cementir Group's plants used a total of about 7.9 million metric tons of raw materials to manufacture ready-mix concrete.

	2013	2012	2011
Sand	2,051,278	1,973,426	2,118,564
Cement	1,073,244	1,120,188	1,127,720
Stone	4,494,030	4,207,506	4,565,665
Other raw materials	2,000	2,400	2,145
Additives	257,818	13,892	14,009
<b>Total</b>	<b>7,878,370</b>	<b>7,317,412</b>	<b>7,828,104</b>

The approximately 7.7% increase over 2012 is due to the proportional increase of ready-mix concrete during the period. The raw material consumption per cubic meter of ready-mix concrete produced in 2013 was slightly higher than the corresponding figure from 2012 (+3.7%).

**USE OF NON-RENEWABLE RAW MATERIALS IN THE PRODUCTION OF READY-MIX CONCRETE  
(2013 vs 2012) Metric tons of raw materials per cubic meter of ready-mix concrete**

+3,74%



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 2013 Cementir Group plants, with the aim of replacing natural raw materials with alternative raw materials, used 127,662 metric tons of the latter in the production cycle, for an increase of +10.65% over 2012 (115,378 metric tons).

	2013	2012	2011
Fly ash	113,496	101,182	113,434
Microsilica	14,165	8,796	8,683
Other recycled material	0	5,400	5,000
<b>Total</b>	<b>127,662</b>	<b>115,379</b>	<b>127,117</b>

**TRANSPORT**

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

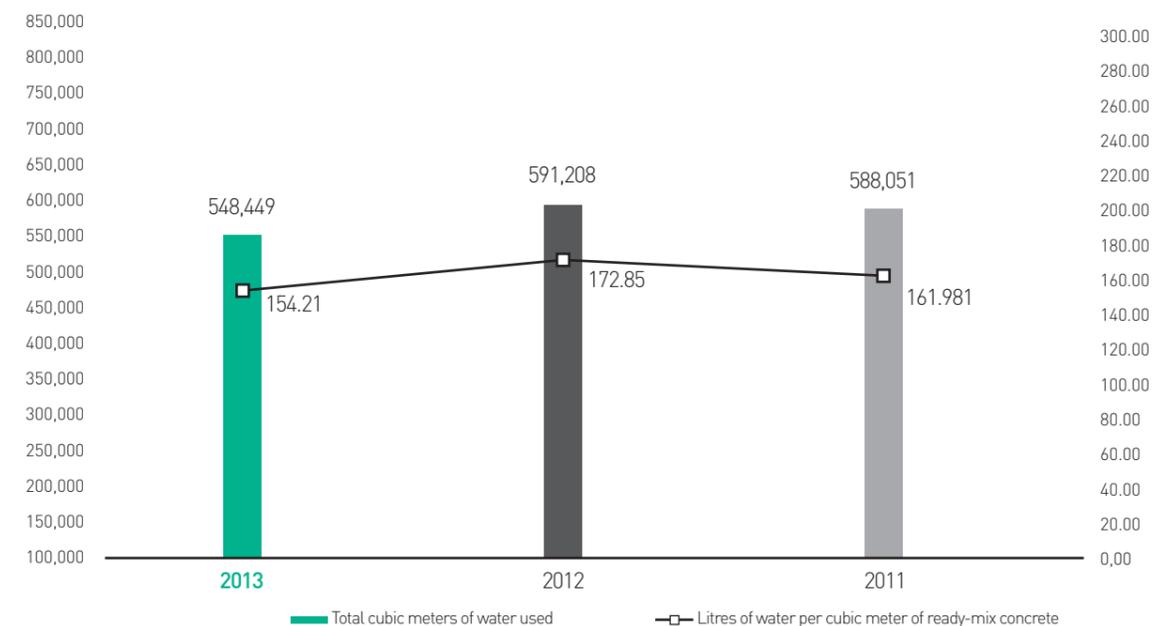
In 2013 the inbound transport of materials and the outbound transport of products were mainly conducted using trucks (86%). For the Unicon facilities in Norway, about 55% of the total inbound materials were transported by sea, a figure in line with 2012 results.

**WATER SUPPLY**

In 2013, water consumption equalled a total of about 0.55 million cubic meters, marking a decrease compared to 2012 (0.59 million cubic meters). The specific water consumption per cubic meter of ready-mix concrete produced significantly decreased compared to 2012 (-10.8%), thanks to a more efficient use of available water supplies. 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 2013 figure is equal to 67,634 cubic meters, substantially in line with the previous year (69,625 cubic meters).

**WATER CONSUMPTION**

-10.78%

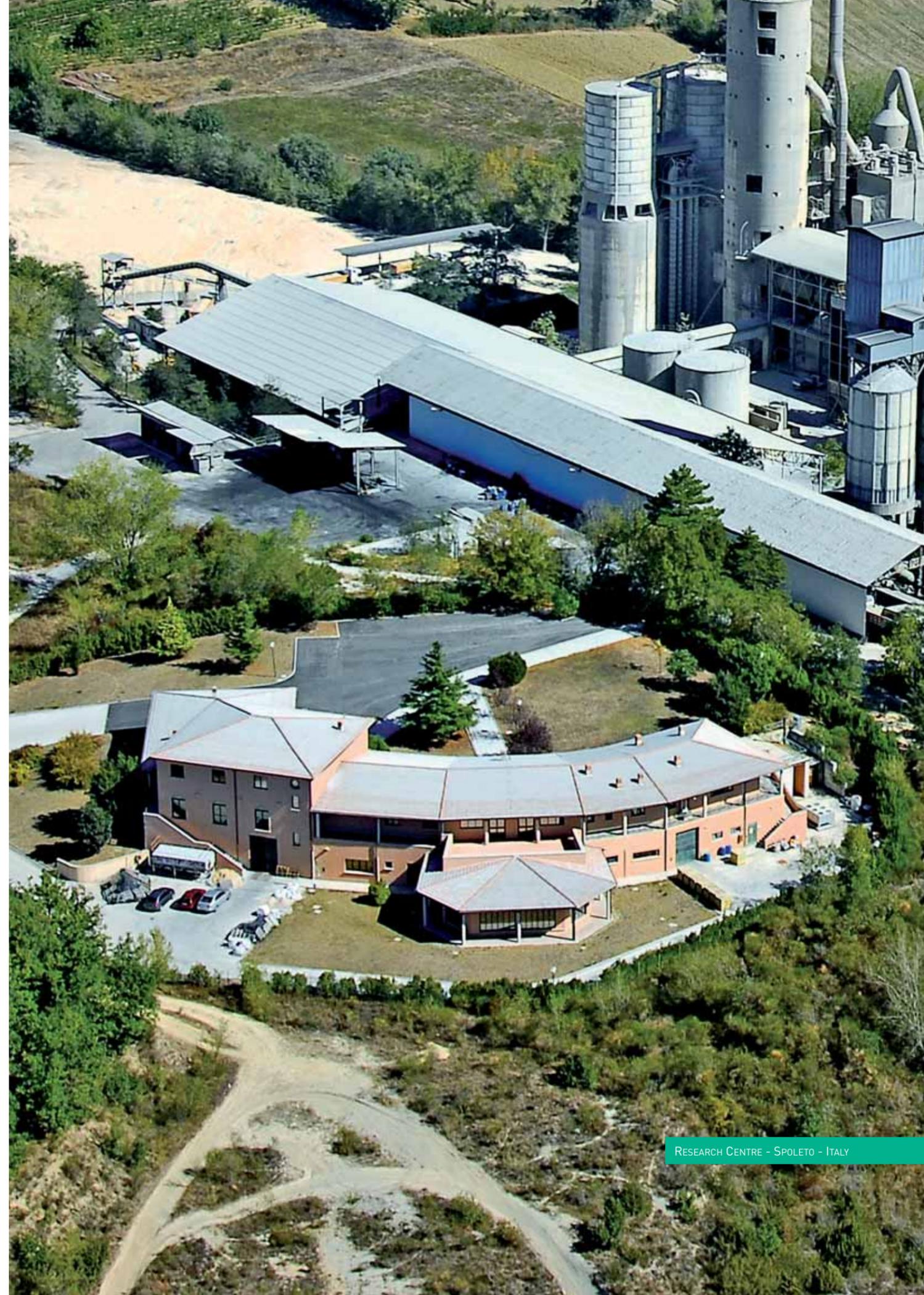


## INNOVATION, RESEARCH AND DEVELOPMENT

Innovation, research and development are fundamental to the Cementir Holding group and are aimed at concurrently improving product quality and cutting production costs. We also seek to improve our innovative capacity by working in close collaboration with customers and all the key stakeholders, both in the traditional cement and concrete sectors and in the waste management sector. The innovative initiatives are defined and supported by an "Innovation Committee", headed by the Chairman of Cementir Holding and made up by the Group's top managers, so that the innovative methods applied by the various operating companies to their products and the production procedures can be shared on an ongoing basis.

### CEMENT AND CONCRETE

Cement and concrete R&D centres are located in Aalborg Portland, in Aalborg (Denmark), Cimentas in Izmir (Turkey) and Cementir Italia, in Spoleto (Italy). The research centres are located near the main facilities to facilitate close collaboration with the R&D specialists, namely engineers, chemists, geologists, industrial technicians and product technicians. The centres study and research cement and concrete as well as the raw materials and fuel used in production to improve product quality, production efficiency and the related environmental issues. Innovation mainly refers to the development of production processes to decrease CO<sub>2</sub> emissions from the cement production cycle and to extend the portfolio of value added products. The Group's aim is to cut CO<sub>2</sub> emissions from cement production by using locally available raw materials and different compositions of clinkers and by making greater use of biological fuels rather than fossil fuels.





# 3.



## HEALTH & SAFETY, THE ENVIRONMENT, PEOPLE

- 42 HEALTH & SAFETY
- 45 THE ENVIRONMENT
- 49 PEOPLE

## HEALTH & SAFETY

Respect for the health and safety of employees represents one of the company's main objectives.

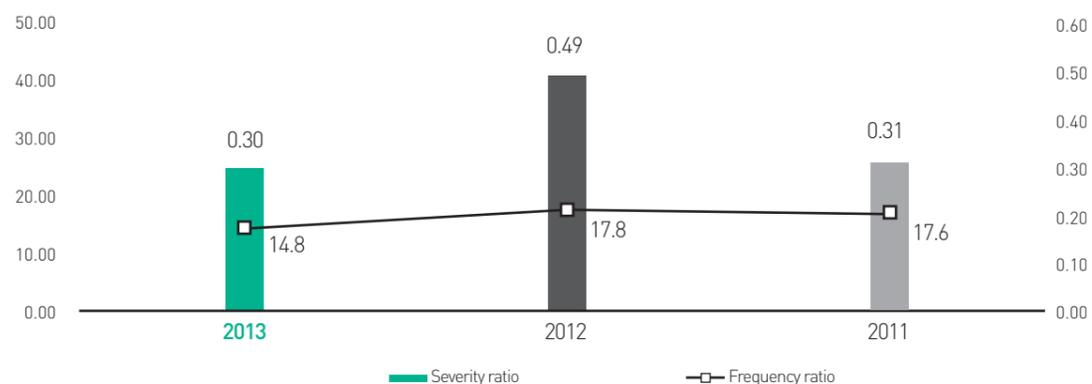
The Group uses the following tools to improve its performance:

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

The accident frequency ratio in the Group's cement and concrete plants significantly improved. In particular, the frequency ratio recorded in 2013 amounted to 14.8 compared to a rate of 17.8 (-17.21%) in 2012. At the same time the severity ratio significantly diminished, going from 0.49 in 2012 to 0.30 in 2013 (-38.5%). No Cementir Group employees were involved in fatal accidents in the plants included in the scope of this report.

### ACCIDENT RATIOS

-17.21% Frequency ratio -38.50% Severity ratio



### RECORD NUMBER OF ACCIDENT-FREE DAYS

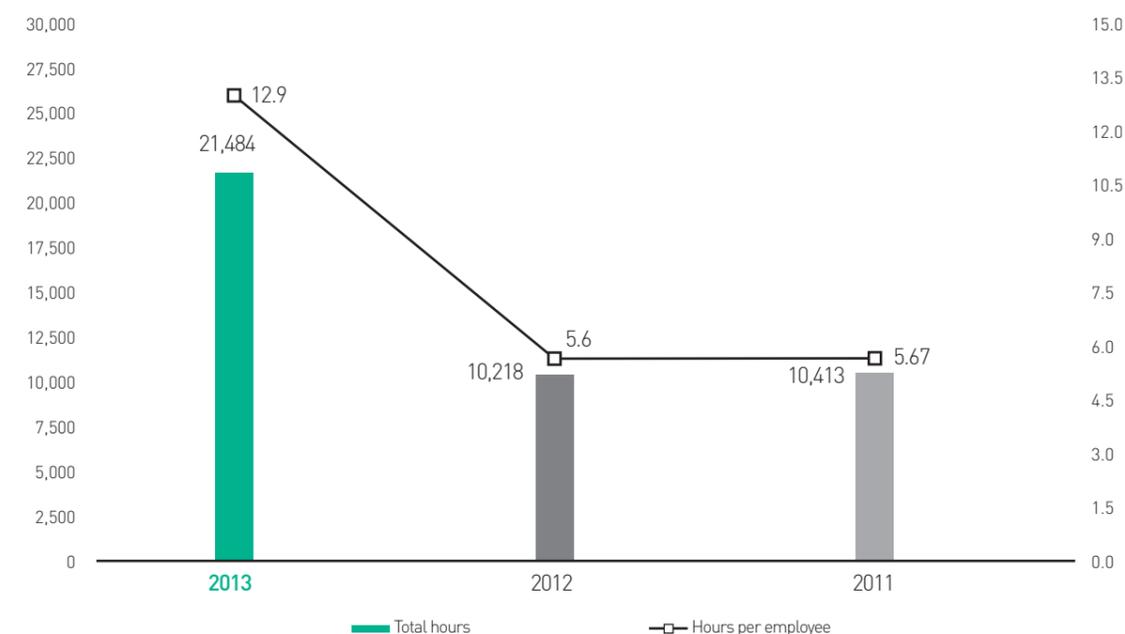
On December 31, 2013 the Maddaloni plant established a new record of 523 days without accidents. This achievement was made possible thanks to the ongoing efforts and meticulous attention of the entire staff in the Campania facility.

### TRAINING

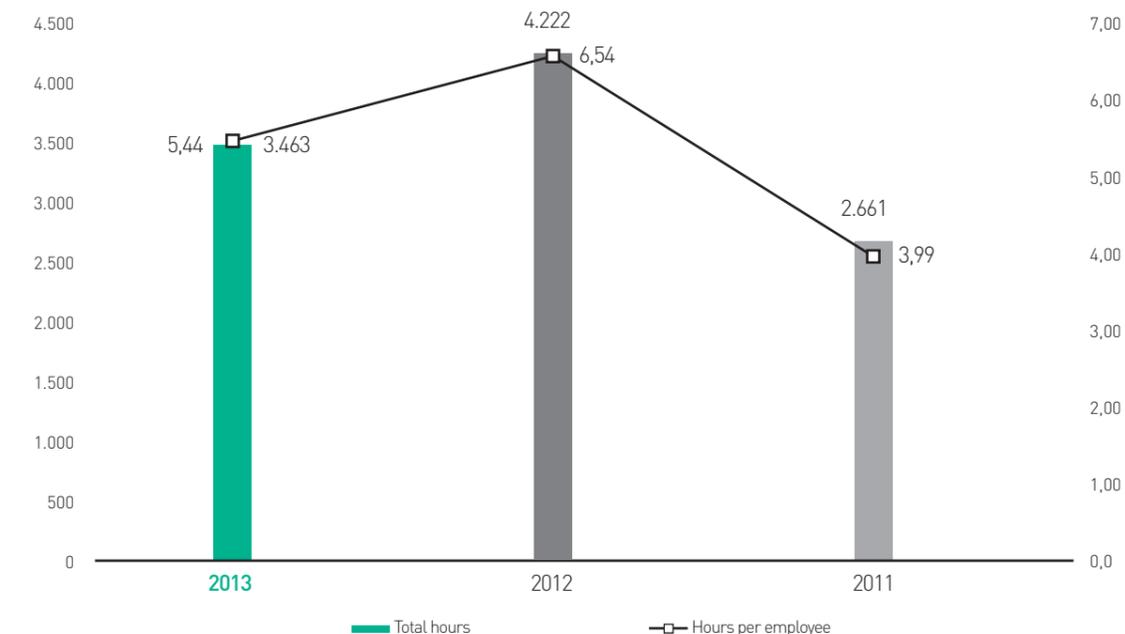
One of the keys to the Cementir Group's continual improvement of its HSE performance is training on environmental, health and safety issues.

Training programs are provided for all Group employees and are adjusted to address specific needs based on the duties of each employee in different HSE areas. In 2013, 21,484 hours of HSE training were provided at Group cement plants, corresponding to an average of 12.9 hours per employee. These figures mark a sharp increase over the same period in 2012. Also with regard to the staff employed in the concrete production facilities, the figures demonstrate the Group's efforts to improve performance in the areas of health, safety and the environment. In 2013 the number of training hours offered in the concrete manufacturing plants were 3,463, with an average of 5.5 hours per worker. Both figures mark a slight decrease compared to the same period in 2012.

### TRAINING HOURS PER CEMENT WORKER (2013 vs 2012)



### TRAINING HOURS PER READY-MIX CONCRETE WORKER (2013 vs 2012)



**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.

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
Arquata Scrivia	x			
Maddaloni	x			
Spoletto	x			
Taranto	x			x

**HSE Investments**

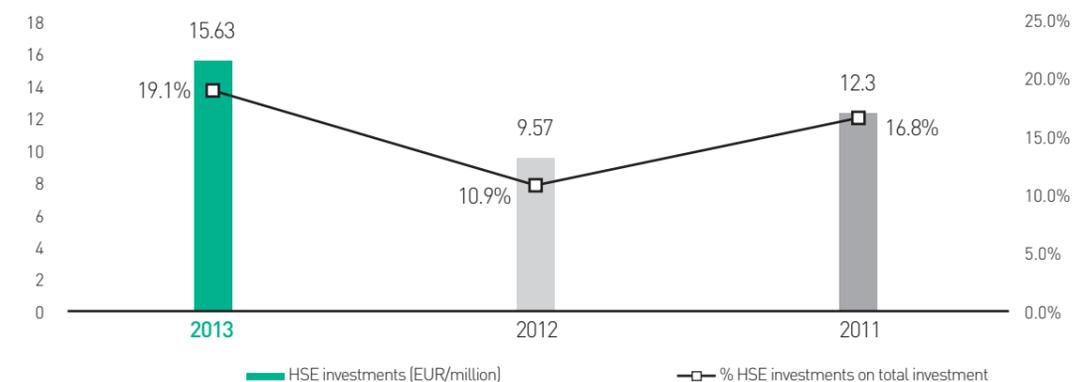
The Cementir Group's commitment to Health, Safety and the Environment (HSE) is demonstrated by its financial and managerial efforts to:

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

Starting this year we have harmonized the types of investments within the Group by establishing homogeneity and consistency criteria; the data reported for 2013 and 2012 follow these new reporting principles.

HSE investments by the Cementir Group in 2013 amounted to EUR 15.63 million, marking a significant increase over those made in 2012 (9.57 million). Investments for safety in 2013 amounted to EUR 2.06 million, while the environmental investments for the same year amounted to EUR 13.57 million.

**HSE INVESTMENTS**



**ENVIRONMENT**

**THE RESTORATION PROJECT FOR THE CHALK PIT IN AALBORG**

In 2013, the project began to use the residual microfiller from the production of cement in the Aalborg chalk pit. The statistics compiled by Aalborg Portland demonstrate a significant decrease in the landfilling of production waste. As a result, about 18,000 more metric tons were recovered in 2013 compared to the previous year.

The recovery of this production waste is consistent with the Danish Government's energy policy, according to which natural raw materials must be replaced through the re-use of waste. These efforts also decreased the need to identify new landfills to cope with this problem.

Upon the completion of the project, the appearance of the chalk pit will be completely transformed, making it a destination point for the local population. The limestone lake, known as the "Rordal Lake Park," shall be used for enjoying sports and other recreational activities. The lake could be used for sailing, water skiing, diving or just swimming, and the surrounding areas could be used to practice hang gliding, mountain biking, jogging and other similar activities.

The project is in line with the Supplementary Municipal Plan, the Environmental Impact Assessment (EIA), and the relative recovery plan for the chalk pit which involves the construction of various microfiller embankments and terraces to be implemented in two stages. The project was initiated once approval for both stages was received by the Environmental Protection Agency.

The first rehabilitation stage involves the construction of an embankment on the north side of the pit, which will be backfilled with microfiller connecting earth banks in six layered sections.

Once the microfiller has been installed (60,000 m<sup>3</sup>), the surface will be topped with soil and grass will be seeded. Trees will also be planted to create shaded areas in the recreation area. During the second stage, when an additional 200,000 cubic meters are installed, about 10 years of microfiller waste from the production process will be recycled, consequently preventing its disposal in a landfill.

Furthermore, during the same EIA procedure, Aalborg Portland obtained permission to excavate chalk from the existing pit until 2052.

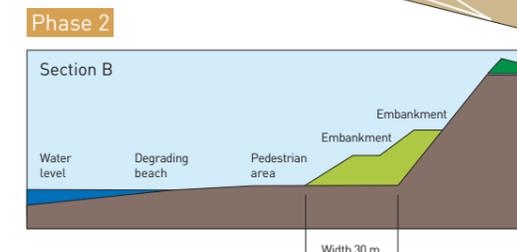
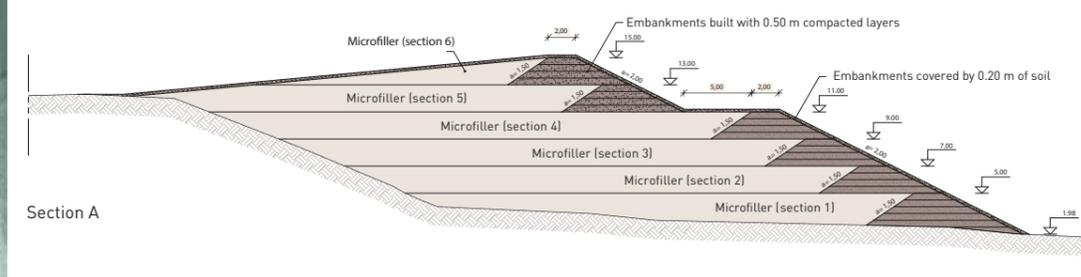


Diagram for the construction of the embankment with microfiller (Stage 1)





ANQING PLANT - CHINA

#### THE DE-NOx SNCR PLANT IN ANQING

The clinker burning process is a high-temperature process that leads to the formation of nitrogen oxides (NOx). The emission of these oxides is highly significant in relation to the emissions typically produced by cement plants.

These oxides can be formed during the combustion process, both for the combination of fuel nitrogen with oxygen in the flame (fuel NOx), or from the combination of the nitrogen that is located in the atmosphere with the oxygen in the combustion air (thermal NOx).

Thermal NOx is mainly produced in the burning zone of the kiln, where there is sufficient heat to create this reaction, and the reaction rate increases as the temperature rises.

To a greater extent, the formation of NOx from combustion may contribute to the total emission of NOx in the calciner kilns, where it uses about 60% of the fuel in the calciner.

In order to produce white cement, certain raw materials are more difficult to transform into clinker due to their mineral content crystalline structure and mineralogy. Therefore a higher flame temperature is required, which leads to an increased formation of thermal NOx.

For quite some time the Anqing facility has adopted what the EU environmental laws (former IPPC, IED Directive) consider to be the "Primary technique and process integration" for the control of NOx emissions, specifically:

- A "low NOx" main burner
- Addition of "mineralisers" to improve the *burnability* of the raw meal (mineralised clinker).

In the late spring of 2013, as a result of the future environmental scenario envisioned by the academic world and the Note of the Ministry of Environment of China, which emphasizes the need to drastically reduce the NOx emission limits starting in 2015, the project began for the construction of the de-NOx SNCR plant.

The de-NOx selective non-catalytic reduction plant (SNCR) of the kiln exhaust gases is considered a "Secondary Technique" for reducing and controlling NOx emissions.

Following the approval of the project, a contract was signed with the supplier on August 16, 2013 and on September 30 the Certificate of Assembly was approved and the kiln was shut down in order to complete the assembly process. The construction was completed at the end of October, while the performance tests were successfully concluded in mid-November, thanks to the excellent performance results reporting during start-up.

The entire project and the assurance and inspection testing was completed one month ahead of schedule and all of the project requirements were fully achieved and satisfied.

#### AALBORG AND SUSTAINABLE HEATING

A commitment to the sustainable use of resources has meant that, for over twenty years, the plant in the Danish city of Aalborg has been meeting the heating needs of over 36,000 nearby families. The thermal energy supplied to the city consists of heat recovered from the combustion gases of the cement plant, after the sulphur dioxide has been removed from the flue gas. This system came into service in the early 90s and has been regularly improved and updated to optimize energy efficiency and to make the emissions of the exhaust gas cleaner.

#### THE RECYCLING OF PRODUCTION WASTE

Ash, a waste product from power plants, has been used in Denmark for over 30 years. Since then, an entire range of other materials and by-products have been included in the production cycle.

At the plant in Taranto, Italy, waste products from the adjacent steel mill are processed in order to produce a blast-furnace cement with a low clinker content with renowned quality and performance, which also helps to limit the use of natural raw materials, the consumption of energy and to contain emissions of CO<sub>2</sub>. From the sewage system of the city of Aalborg, dry waste (without CO<sub>2</sub>) is also recycled and used as an alternative fuel, consequently decreasing the use of fossil fuels such as coal and pet coke. Sand is also used for the production of grey cement, which is dredged from the waterways of Hals Barre and Logstor Rende: this operation is necessary for ensuring the safety of the maritime traffic from Limfjord up to Aalborg.

#### ENVIRONMENTAL STANDARDS

All of the Group's plants in China, Malaysia and Egypt meet the environmental and energy standards provisioned by the European Union, even if they are not governed by these rules. The environmental certification in Denmark, on the other hand, is based on the Eco-Management and Audit Scheme, and the company Aalborg Portland has already been nominated by the Danish Environmental Protection Agency to receive the European Union's EMAS Award.

#### THE WIND FARM PROJECT

Aalborg Portland is working on a project to build a wind farm in the municipality of Aalborg, thanks to the wide availability of sites for the installation of wind turbines. The electricity generated would also be used for production activities. This initiative would make cement production more sustainable and pertinent to the Danish Government's program to use a greater amount of renewable energy, leading to a gradual elimination of fossil fuels in the production of energy.



AALBORG PLANT - DENMARK



#### THE SEARCH FOR NEW SOLUTIONS

On February 7, 2013, the Sales Department and Research Centre in Aalborg organized a seminar to discuss the challenges and evaluate the opportunities related to the growing demand for sustainable solutions in the Northern European cement market.

Thanks to the research efforts carried out in Aalborg, in 2013 the average clinker content in the grey cement produced by the Cementir Group fell by 0.7 percentage points, resulting in a reduction of more than 35,000 metric tons of total CO<sub>2</sub> emissions, while maintaining the quality of the cement sold.

The research, funded through donations from the Danish Advanced Technology Foundation, the Danish Strategic Research Council and the Danish Agency for Science, Technology and Innovation, is carried out in collaboration with leading universities in Europe, the most important manufacturers of industry machinery and the customers.

Clinker can only be partially replaced by crushed limestone and industrial by-products such as blast furnace slag and fly ash from the coal-fired power plants. Therefore, long-term research will continue with the aim of developing new types of clinker and supplementary cementitious materials.

The finest quality ready-mix concrete has been produced in the laboratory with the new types of cement for which CO<sub>2</sub> emissions could be reduced by up to 30 % compared to the use of conventional Portland cements.

## PEOPLE

### THE CIMENTAS FOUNDATION

The Çimentaş Education and Health Foundation, founded in Turkey in 1986, provides financial support and educational materials to families and schools in outlying areas in collaboration with the authorities in the surrounding provinces. The Foundation also supports the work of UNICEF and the Turkish Ministry of Education for pre-school programs and to support professional nurses.

### SUPPORT PROGRAMS FOR THE DISABLED

For some time now, Aalborg Portland Malaysia has been collaborating with the local Persatuan Daybreak association, which aims to provide job opportunities to young men and women with 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 help them join the world of work. The collaboration project between Aalborg Portland Malaysia and the local organization has allowed certain operations in the plant to be delegated to the association's young members.

### EUROPEAN RESEARCH PRIZE

Our colleague and Australian-born scientist Duncan Herfort, a long-term member of the Research Centre at the Aalborg plant, has been awarded the highest honour in the field of cement research and production.

During the annual VDZ international conference, the national organization of Germany's cement producers, Herfort received the "Klaus Dyckerhoff Award" for his ongoing efforts to build bridges between industry and the academic world, thanks to his enthusiasm and research activities.

During the laudatory speech that marked the closure of the award presentation ceremony, Herfort was recognized for the relevance of his research that substantially contributes to a deeper understanding of how the use of hydraulic binders and material interactions can influence the performance and durability of concrete. His significant research efforts have allowed Aalborg Portland to continue to be considered one of the most qualified cement producers and a global leader in white cement.



DUNCAN HERFORT (right)  
RECEIVES THE KLAUS DYCKERHOFF  
AWARD

### FAMILY DAYS

The majority of the Cementir Group's facilities also host festive days when the plants open their doors to the family members and relatives of employees to allow everyone to learn about the activities carried out, see the workplace, have fun together and gain insight on the work performed in the plants.

In 2013, various initiatives promoted by the Turkish and Danish facilities were held. This highly anticipated event, especially among children, offers themed-games throughout the day, along with sporting events and fun challenges with prizes.

### LA RACE FOR THE CURE

For the third consecutive year a delegation of employees of Cementir Holding and Cementir Italia took part in the "Race for the Cure", a solidarity race to raise funds through a 5km challenge (with a 2km walk) with the aim of supporting women with breast cancer and raising public awareness about prevention. On May 19, thousands of people met up at the Baths of Caracalla in Rome and raced through the streets of downtown. Once again this year 28 colleagues ran as a team in the 5 km race wearing the special t-shirt dedicated to the event, to celebrate those who have survived the disease while raising a small solidarity fund.



FAMILY DAY - KARS - 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/her against one or more hazards likely to endanger 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 for fire prevention and compliance with the requirements of fire safety.

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

**ISO 14001:** 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 that decides to establish / implement / maintain / improve its 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 the environmental performance, implementing a systematic approach results in the establishment and achievement of specific environmental objectives.

**OHSAS 18001:** It is the international standard that establishes requirements for developing a management system to 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.

\*For the calculation of the accident contained in the Environmental Report 2012:

- Only injuries longer than one day were considered (injury's day);
- Commuting accidents not included.

**(EMAS) Eco-Management and Audit Scheme:** It 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 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



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