Ninth edition

Environmental Report 2015

cementirholding
CALTAGIRONE GROUP

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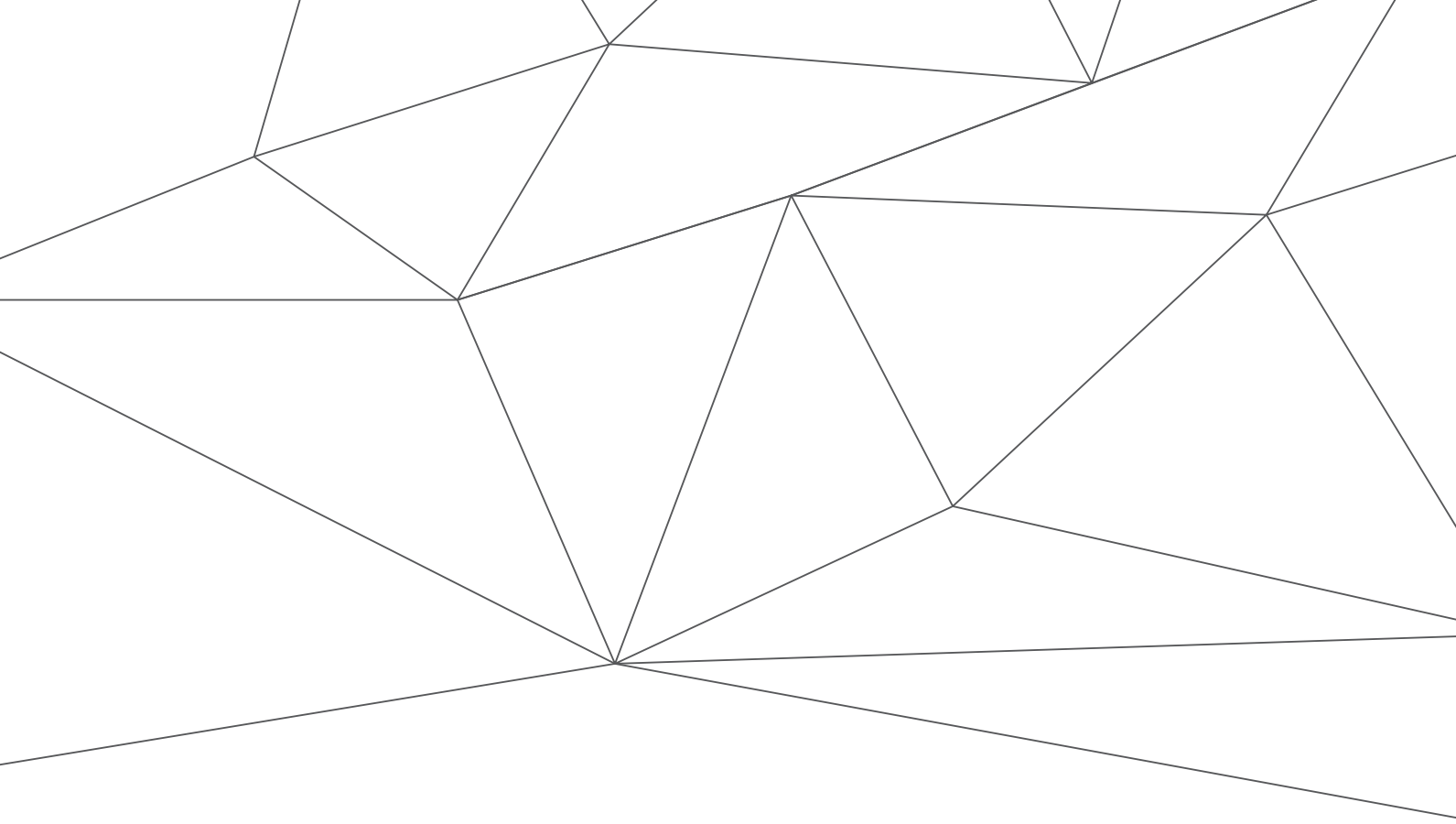

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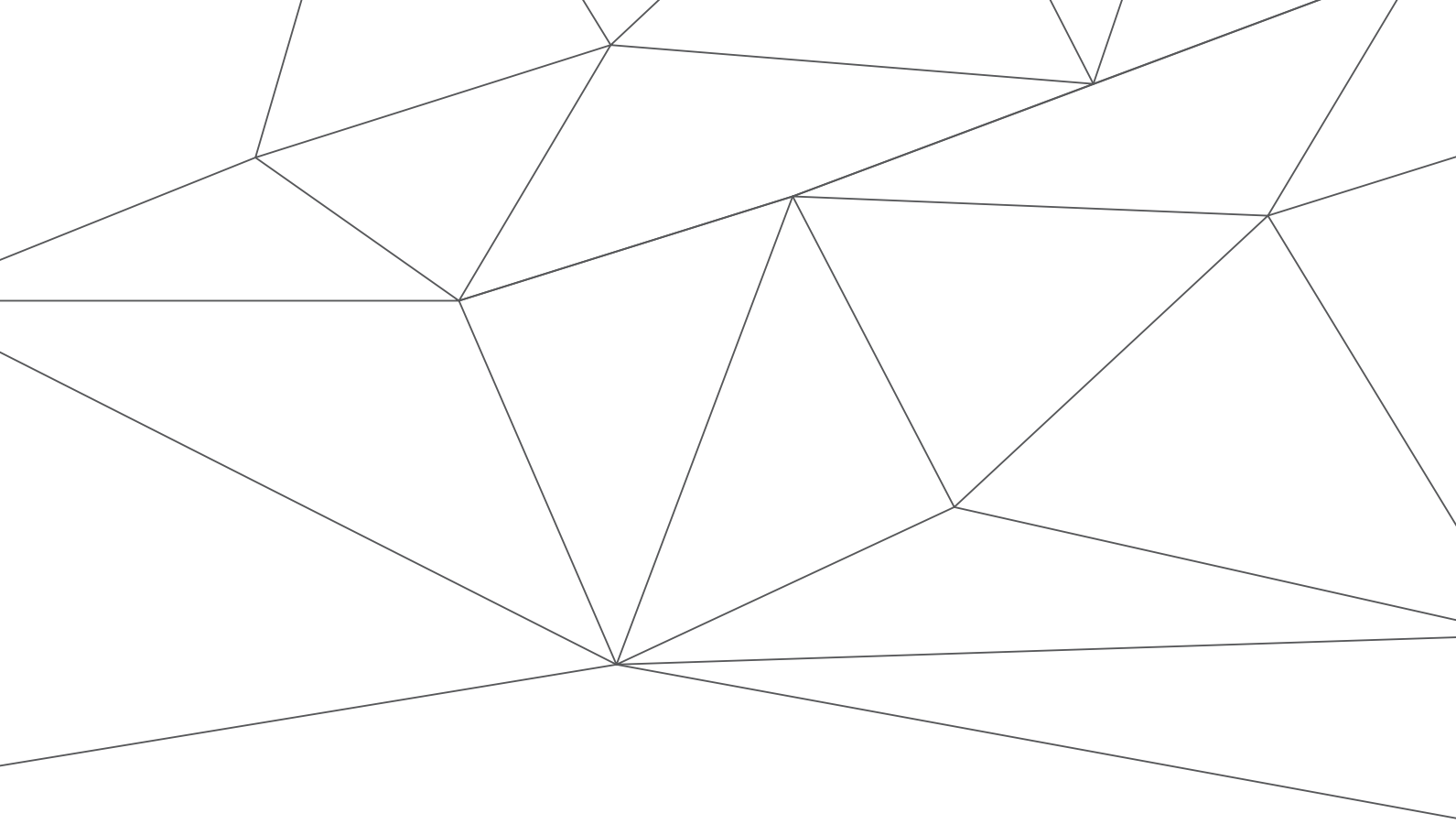

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Rørdal Plant DENMARK

Letter from the Chairman

The creation of sustainable economic values has become an important part of the culture and of the industrial strategy of enterprises that consider protection of the environment to be an essential aspect of development.

This objective has become fundamental for Cementir, which, due to the very nature of its business, is committed to proving the sustainability of our projects and of our whole production cycle.

A confirmation of our commitment is eloquently provided in the 9th edition of the Environmental Report integrating the Financial Report and underlining compliance with the rules and parameters that an international company such as ours must keep to in order to remain increasingly competitive.

Following the decisions reached and agreed by 195 countries at the end of COP 21 in Paris last December, we too have increased our attention on measures that help to reduce carbon dioxide emissions. I believe that the Paris Agreement sent the markets an incontrovertible signal of the trend towards a "low carbon" economy with which we are fully in line, not only in our efforts to reduce our footprint, but above all in the policy that we are adopting for a number of strategic investments.

Our overall effort includes investments in alternative fuels, in waste management and in systems for reducing emissions of toxic gases such as nitrogen oxides (NOx).

The figures in the 2015 Environmental Report are therefore tangible proof of the effectiveness of a commitment that is leading to even more positive results than those recorded in the previous year. Suffice it to say, for example, that use of thermal energy from alternative sources increased by 31.9% from 2014 to 2015.

These are important values that have repercussions on the Financial Statements, though it would be completely wrong to disregard the values of that "immaterial" report that considers respect for the environment and for people to be a priority.

I would like to end by thanking all the employees, directors and other workers of the Cementir Group for their joint efforts to date and above all, for the awareness of environmental aspects that they have shown, a condition that has allowed us to operate with a satisfying shared intent and orientation towards results.

Francesco Caltagirone Jr.
Chairman and Chief Executive Officer

Introduction

Methodology note

The Cementir Group intends to use the Environmental Report to provide a clear, transparent and immediately available overview of environmentally and socially significant initiatives undertaken, and an analysis of the environmental impact of the activities carried out during 2015.
The document is intended for all stakeholders who have direct or indirect dealings with the Group.
The report is divided into three sections:

1 **General information**

this section includes the Group's profile, Governance, main indicators, corporate set-up and performance for 2015.

2 **Environmental performance**

this section contains an assessment of the main environmental impacts of the activities carried out in all the cement production plants in Italy, Turkey, Denmark, Egypt, Malaysia and China, all the ready-mixed concrete production plants in Italy, Turkey, Denmark and Norway and all the waste treatment facilities in Turkey and the UK.

3 **People and the environment**

Activities for the environment and safety: in this section, projects and activities carried out in favour of the environment and safety in the communities where the Cementir Group operates are presented.

Specific examples of projects undertaken by the Cementir Group to improve its environmental performance and ensure health and safety in the workplace are included in the various sections of the Environmental Report.

Approach to sustainable development

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

For this reason, Cementir pays great attention to research, innovation and the introduction of an organisation system that includes sustainable development amongst its priorities.

The management of the Group is in fact well aware that, in order to continue operating in this sector, it is essential to reckon with a world with limited resources that require an ethically sustainable conduct.

The development of Cementir Holding is intended to be sustainable and achievable through commitment to continual improvement of its economic, environmental and social performances.

Guidelines

Cementir Holding promotes economic, social and environmental development through:

- compliance with current legislation and local regulations;
- respect for human resources, ensuring health and safety in the workplace;
- promotion and use of clean technologies;
- reduction of environmental impacts of individual products;
- development of eco-sustainable products;
- identification of improvement goals;
- involvement and ongoing training of human resources to achieve the goals set;
- increased transparency and dialogue with customers, suppliers, employees, authorities, local communities and shareholders.

By applying the principles stated in the above guidelines, Cementir Holding undertakes to:

- develop, implement and maintain an environmental management system in all the production plants of the Group;
- promote its policy, objectives and action plans for sustainable development, by issuing a periodical Report;
- formulate and use environmental performance indicators to monitor the extent to which the goals set have been achieved;
- increase the environmental performance of each plant by:
  - monitoring and reducing all types of emissions into the atmosphere;
  - monitoring energy consumption;
  - conducting technological research into the use of alternative fuels in the production process, with a view to reducing the consumption of natural raw materials;
  - monitoring and reducing water consumption and monitoring waste water discharges;
  - monitoring noise levels;
  - preventing environmental emergencies and managing them, where necessary;
- preventing incidents and accidents by investigations and checks in the workplace, surveys on health and safety, action plans.

Corporate social responsibility

The Cementir Group has long been committed to ensuring the sustainability of its business, in the firm belief that business practices which embrace environmental and social principles create lasting value for the Company and its stakeholders. An essential part of this policy stands in the publication of the Group's Annual Environmental Report, now at its ninth edition. The aim of the report is to communicate clearly to our stakeholders who we are, what we do, the strategies we have chosen and the progress we have made towards our economic, environmental and social sustainability goals.

All employees are required to comply with the Corporate Social Responsibility policy adopted by the Group, which identifies the principles, rules of conduct and actions for protecting the environment, society and the health of workers.

All Group companies fully comply with the laws and regulations of the countries in which they operate and pursue a policy of corporate social responsibility and environmental stewardship that translates into effective programmes and actions, ranging from improvement of production processes to projects benefiting the local communities.

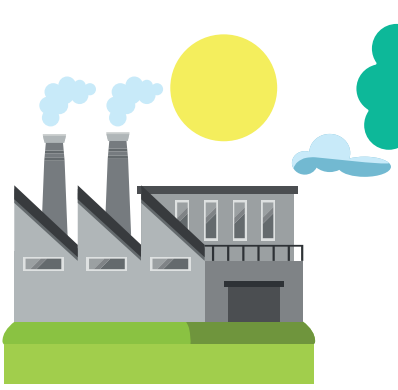
The Group's commitment to the environment and concerns over climate change and gas emissions into the atmosphere led it in 2011 to join the Carbon Disclosure Project (CDP), an international non-profit organisation that, on behalf of companies, promotes exhaustive and clear communication of information on their environmental impact and use of natural resources. CDP operates on behalf of 822 corporate investors who manage assets worth over USD 95,000 billion and each year conducts studies on over 4,500 companies around the world, analysing the actions they take to mitigate climate change.

For more than twenty years, Aalborg's Danish factory has provided the nearby city with approximately 495,000 MWh of thermal energy each year, enough to meet the heating needs of more than 36,000 households.

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

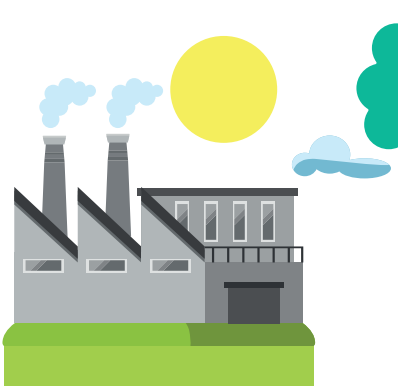
In Turkey, the Çimentaş Education and Health Foundation, founded in 1986, provides financial assistance and learning materials to families and schools, in partnership with nearby provincial authorities.

Highlights



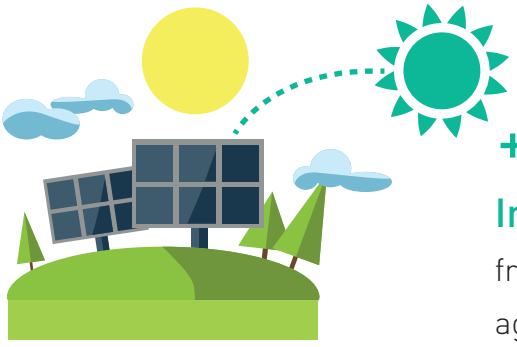
-1.8% t/TCE

Decreased emissions of nitrogen oxide (NOx) per t/TCE by 1.8% against last year



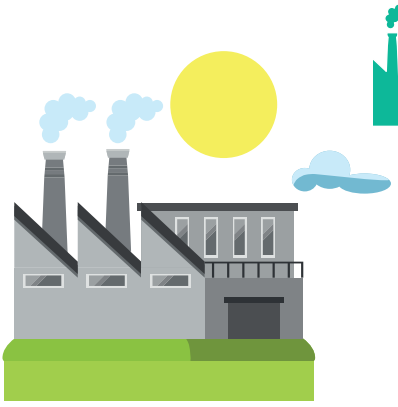
-9.3% t/TCE

Decreased emissions of nitrogen dioxide (SO_2) per t/TCE by 9.3% against last year



+31.9%

Increased use of thermal energy from alternative sources by 31.9% against 2014



+2 units ISO14001 e OHSAS18001

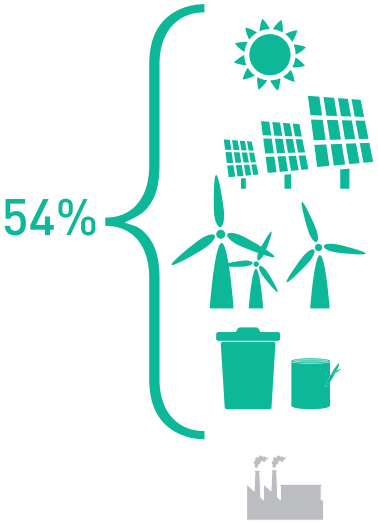
Increased the number of ISO 14001 and OHSAS 18001 certified plants by two units

Environmental Performances of Cements

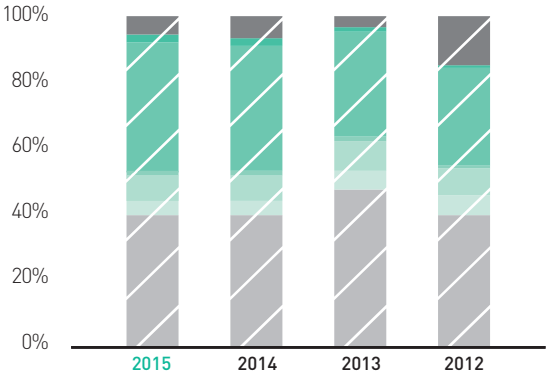
In 2015 more than half of the electricity used to produce our cements originated from primary and secondary renewable sources of energy.

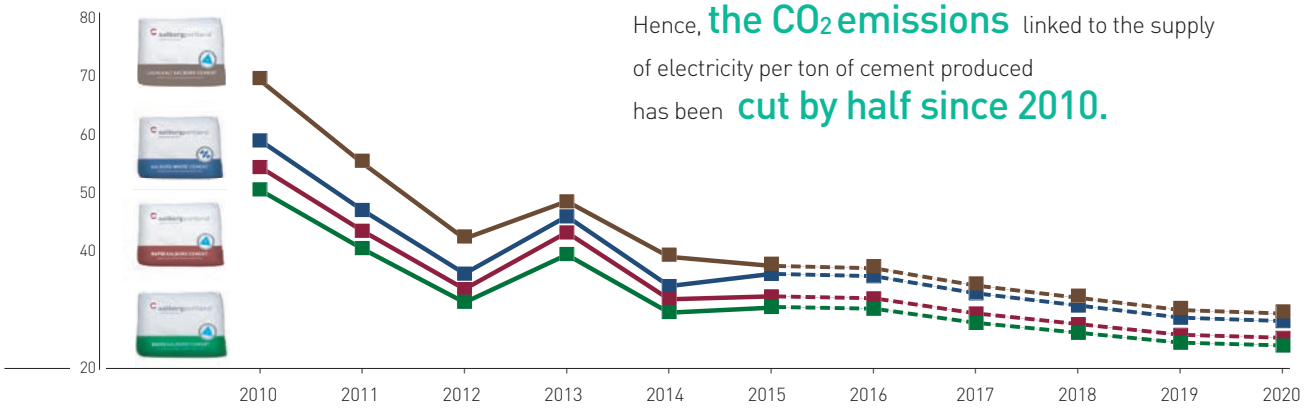
Primary renewable sources: wind, solar and hydro power.

Secondary renewable sources: biogas, biomass (forest residues) and refuse-derived fuel.



Electricity consumption mix in Denmark, incl. imports.

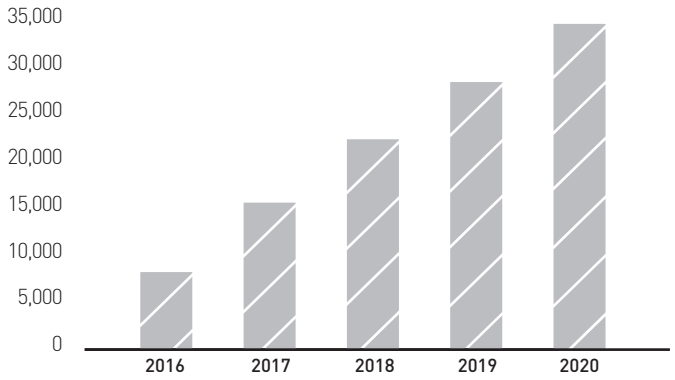




Hence, **the CO_2 emissions** linked to the supply of electricity per ton of cement produced has been **cut by half since 2010.**

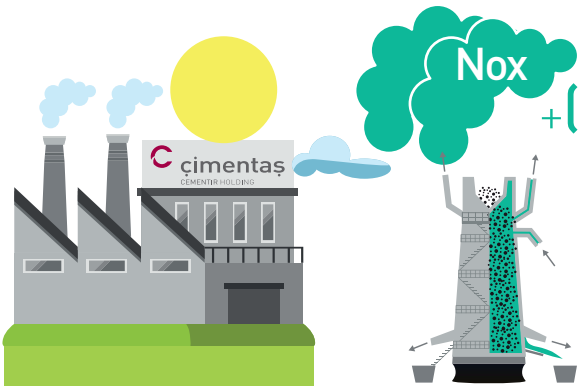
Kilos of CO2 eq. for the supply of electricity per ton of cement.
Figures 2016-2020 based on projections by the Danish Ministry of Energy

Tons of CO_2 eq. saved through substitution with local wind power supply



Additionally, 5 wind turbines will be implemented in 2016. They will further cut the CO_2 emissions linked to our use of electricity by another 12%. In less than two years after their installation, **the CO_2 savings will have already paid back for the emissions associated to their construction and maintenance.**

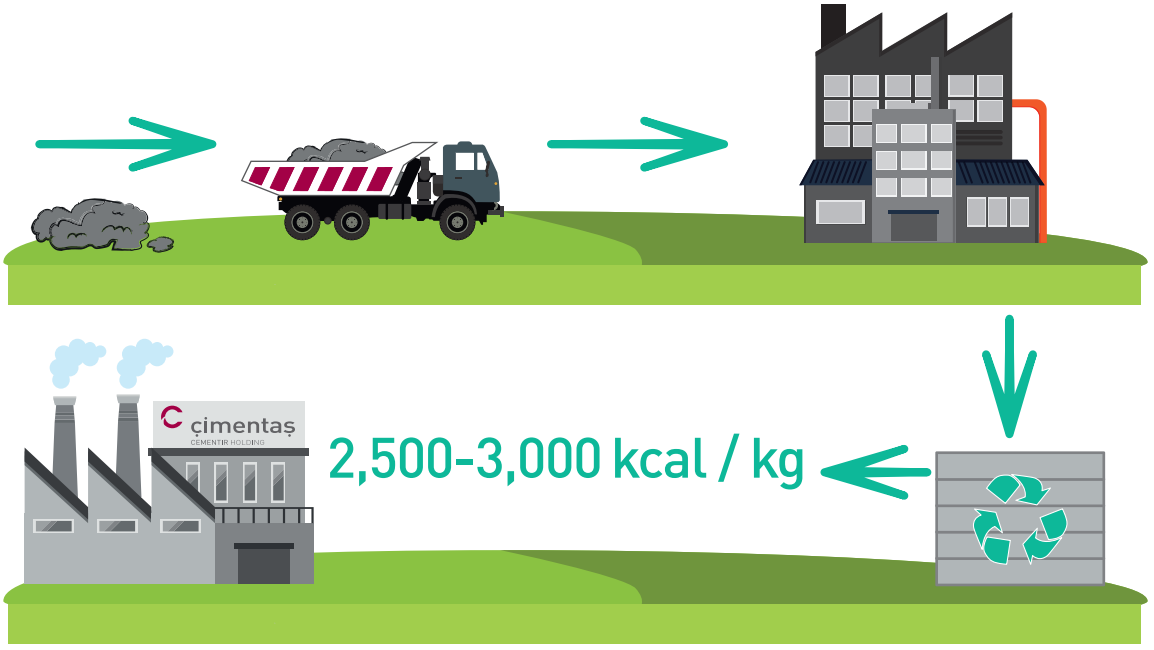
NOx Reduction System (SNCR) for both Kilns in Izmir



Cimentas has completed in 2015 implementation and establishment of NOx Reduction System (SNCR) for both kilns in Izmir plant improving significantly plant's environments performance in reference to NOx emissions

Dry sewage sludge feeding investment in Izmir plant

In Izmir, sewage sludge is collected in different parts of the city and is stored in sewage sludge facilities to be transferred to drying installation in Cigli in the sewage sludge drying facility activated in 2014. **This waste which has 2,500-3,000 kcal/kg calorific energy** is an ideal **alternative fuel (waste to energy) for the cement industry.** Automatic Dry Sludge Feeding Investment has been completed in 2015 to serve both kilns in Izmir. The mud has being used since 2015 and will be increasingly used in the future as well.

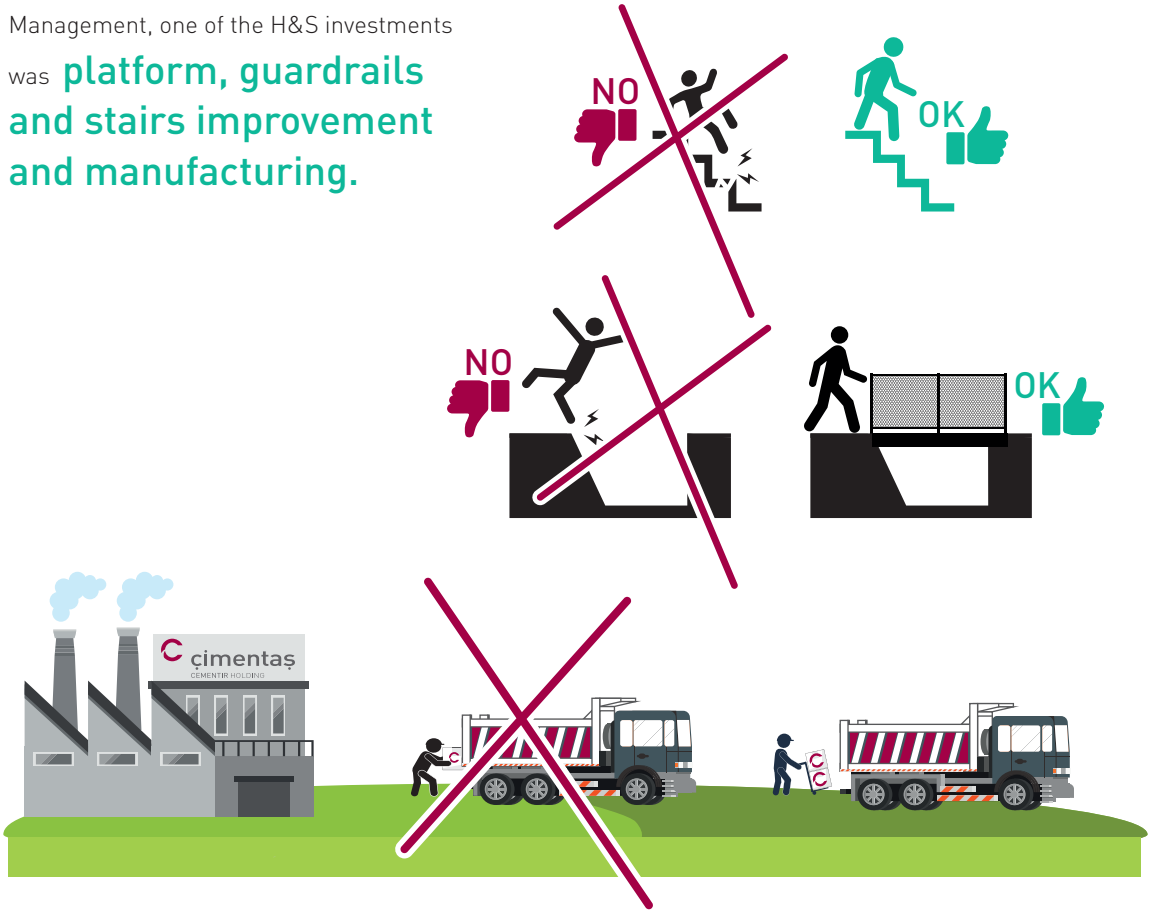


LOTOTO Investment

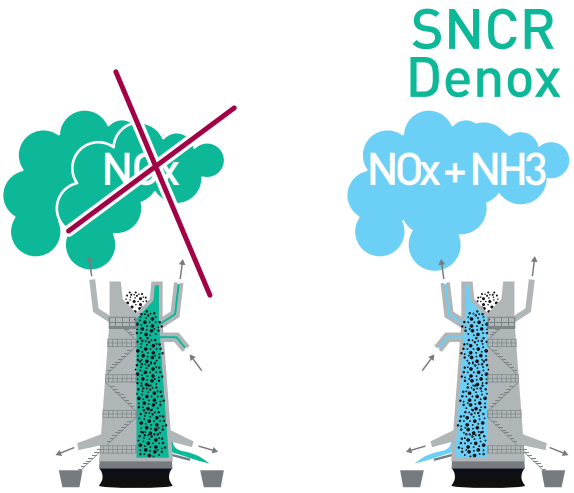
As Cimentas Izmir Cement Factory, our primary goal is to maintain a World class Health and Safety structure within our organization. To achieve this goal, we have started to perform risk analyses for each operation following **LOTOTO (Lock out-Tag out-Try out) to minimize the risks related** to hazardous machinery.

Platform, guardrails, stairs improvement investment

In 2015 budget determined by Izmir Plant Management, one of the H&S investments was **platform, guardrails and stairs improvement and manufacturing.**



Environment investment in Kars plant



Cimentas has completed in 2015 implementation and establishment of a **NOx Reduction System (SNCR),** supplied by FlowVision Worldwide Engineering Corporation **to reduce Nox emission** by using **NOx and NH3 reaction** which doesn't affect the environment negatively.

The Cementir Group

Cementir Holding is an Italian multinational company that produces and distributes grey and white cement, ready-mixed concrete, aggregates and concrete products. The company is part 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 16 countries across 5 continents; in 2015, it sold 9.4 million tons of cement, 3.7 million m3 of ready-mixed concrete and 3.8 million tons of aggregates.

Cementir Holding is the largest manufacturer and exporter of white cement in the world. It operates production sites in Denmark, Egypt, China, Malaysia and the United States. The total production capacity of the Group's white cement production plants is 3.3 million tons, with the manufactured cement shipped to over 60 countries throughout the world.

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

The Cementir Group is the sole manufacturer of cement in Denmark, the 4th biggest manufacturer in Italy and among the top manufacturers in Turkey; in Scandinavia it is the leading manufacturer of ready-mixed concrete.

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

14
Cement plants

113
Ready-mixed concrete plants

3.8 million t
Aggregate sold

15.1 million t
Cement production capacity

3
Waste management facilities

3,032
Employees

218 thousand t
Waste processed

Main indicators

Cement production plants in Italy, Denmark, Turkey, Egypt, Malaysia and China

	2015	2014	2013	Unit of measurement
Environment				
CO_2 emissions per t of cement produced	0.73	0.73	0.72	t/TCE
Alternative raw materials used	6.96	6.70	6.70	%
Electrical power consumed	3,820	3,920	4,170	tj
Direct energy consumed	29,646	30,180	32,300	tj
of which from alternative sources	10.2	8	7.30	%
ISO 14001 certifications	9	9	9	no.

Ready-mixed concrete production plants in Denmark, Norway, Turkey and Italy

	2015	2014	2013	Unit of measurement
Environment				
Raw materials used	7.8	7.5	7.9	million t
% of alternative raw materials used	2.2	1.8	1.6	%
Water used	589,196	551,921	548,449	m^3
% recycled water	12.8	12.8	12.3	%
ISO 14001 certifications	1	1	1	no.

Waste processing plants in Turkey and England

	2015	2014	2013	Unit of measurement
Environment				
Processed waste	574	672	306	thousand t
Alternative fuel produced	108	61	28	thousand t
Recycled products	33	18	11	thousand t
ISO 14001 certifications	3	2	2	no.

The Cementir Group

	2015	2014	2013	Unit of measurement
Health and Safety				
Frequency rate	18.5	16.4	13.9	
Severity rate	0.32	0.23	0.28	
Fatal accidents	0	2	0	no.
Hours of HSE training per employee	9.3	11.9	11.9	hours/employee
HSE Investments	4.3	9.2	12.4	millions of euros
OHSAS 18001 Certifications	8	7	7	no.

Global presence

Grey cement production capacity:	11.8 million t
White cement production capacity:	3.3 million t
Grey cement sales:	7.4 million t
White cement sales:	2.0 million t
Ready-mixed concrete sales:	3.7 million m^3
Aggregate sales:	3.8 million t
Cement plants:	14
Terminals:	27
Ready-mixed concrete plants:	113
Quarries:	8
Cement products plants:	1
Waste management facilities:	3

Denmark
Grey cement production capacity: 2.1 million t
White cement production capacity: 0.85 million t
Grey cement sales: 1.39 million t
White cement sales: 0.61 million t
Ready-mixed concrete sales: 1.17 million m^3
Aggregate sales: 0.74 million t
Cement plants: 1 (7 kilns)
Ready-mixed concrete plants: 42
Terminals: 9
Quarries: 3

Turkey
Grey cement production capacity: 5.4 million t
Grey cement sales: 4.25 million t
Ready-mixed concrete sales: 1.49 million m^3
Cement plants: 4
Ready-mixed concrete plants: 15
Waste management facilities: 2

Norway
Ready-mixed concrete sales: 0.82 million m^3
Ready-mixed concrete plants: 29
Terminals: 1

Sweden
Ready-mixed concrete sales: 0.18 million m^3
Aggregate sales: 3.08 million t
Ready-mixed concrete plants: 9
Quarries: 5

Italy
Grey cement production capacity: 4.3 million t
Grey cement sales: 1.71 million t
Ready-mixed concrete sales: 0.09 million m^3
Cement plants: 4
Ready-mixed concrete plants: 18
Terminals: 3

Egypt
White cement production capacity: 1.1 million t
White cement sales: 0.55 million t
Cement plants: 1

China
White cement production capacity: 0.7 million t
White cement sales: 0.61 million t
Cement plants: 1

Malaysia
White cement production capacity: 0.35 million t[1]
White cement sales: 0.30 million t
Cement plants: 1

USA
White cement production capacity: 0.26 million t
Cement plants: 2
(24.5%-owned joint ventures with Heidelberg and Cemex)
Cement product plants: 1
Terminals: 1

United Kingdom
Waste management facilities: 1
Terminals: 1

Australia
Terminals: 4

Germany
Terminals: 1

Iceland
Terminals: 3

Netherlands
Terminals: 1

Poland
Terminals: 1

Russia
Terminals: 2

[1]In December 2014, expansion works were completed to increase cement production capacity from 0.2 to 0.35 million t.

Corporate bodies

Board of Directors in office for the three-year period 2015 – 2017	*Chairman*	Francesco Caltagirone Jr.
	Deputy Chairman	Carlo Carlevaris *(independent)*
	Directors	Alessandro Caltagirone
		Azzurra Caltagirone
		Edoardo Caltagirone
		Saverio Caltagirone
		Mario Ciliberto
		Fabio Corsico
		Mario Delfini
		Veronica De Romanis *(independent)*
		Paolo Di Benedetto *(independent)*
		Chiara Mancini *(independent)*
		Riccardo Nicolini[1]
Executive Committee	*Chairman*	Francesco Caltagirone Jr.
	Members	Mario Delfini
		Riccardo Nicolini[1]
Control and Risks Committee	*Chairman*	Paolo Di Benedetto[2] *(independent)*
	Members	Veronica De Romanis *(independent)*
		Chiara Mancini *(independent)*
Appointment and Remunerations Committee	*Chairman*	Paolo Di Benedetto[2] *(independent)*
	Members	Veronica De Romanis *(independent)*
		Chiara Mancini *(independent)*
		Mario Delfini
Board of Statutory Auditors in carica per il triennio 2014 – 2016	*Chairman*	Claudio Bianchi
	Auditors	Giampiero Tasco *(standing)*
		Maria Assunta Coluccia *(effettivo)*
		Vincenzo Sportelli *(alternate)*
		Patrizia Amoretti *(alternate)*
		Stefano Giannuli *(alternate)*
Manager responsible for financial reporting		Massimo Sala
Supervisory Body (Italian Legislative Decree 231/2001)	*Chairman*	Mario Venezia
		Franco Doria
		Francesco Paolucci

[1] The Director Riccardo Nicolini held office as General Manager from 23 April 2015 to 31 December 2015.
[2] Lead Independent Director.

Governance

The Corporate Governance structure chosen by the Company is based on the recommendations and regulations given in the "Corporate Governance Code for Italian Listed Companies" (hereinafter "Corporate Governance Code") to which the Company subscribes.
The management and control model adopted by the Company is the traditional one, featuring the Shareholders' Meeting, the Board of Directors and the Board of Statutory Auditors. The Corporate Governance system is based on the essential role of the Board of Directors as the highest body responsible for managing the Company in the interest of its shareholders, on transparency in the company's decision-making processes and on an effective internal control system.

Board of Directors

The Board of Directors of Cementir Holding SpA was appointed by the Shareholders' Meeting on 21/04/2015 for the three-year period 2015-2017 and will end its period of office with the approval of the financial statements at 31/12/2017.
The Board currently comprises thirteen members, the majority of whom are not executive; it includes three Directors who can be classified as "independent" pursuant to the Corporate Governance Code.
The Chairman is granted the widest powers of ordinary and extraordinary management of the Company, with the sole exception of those reserved to the Shareholders' Meeting and to the Board of Directors by law and by the Articles of Association; in the event of absence or impediment of the Chairman, his powers are exercised by the Deputy Chairman.

Board of Statutory Auditors

The Board of Statutory Auditors monitors compliance with the law and the Articles of Association as well as compliance with the principles of correct administration and the adequacy of the organisational structure, the internal control system and the administrative-accounting system and its reliability in correctly representing management matters.
The Board of Statutory Auditors has three standing members and three alternate members elected by list vote and in possession of the prescribed requirements of independence and integrity and with specific and significant professional experience.

Other corporate bodies

Other corporate bodies are: the Executive Committee, the Control and Risks Committee and the Appointment and Remuneration Committee.
The Executive Committee, comprising the Chairman and two executive Directors, is granted the powers of the Board of Directors, with the exception of those granted exclusively to the Board by the Articles of Association or by Law.
The Control and Risks Committee comprises three independent Directors.
The Appointment and Remuneration Committee, whose members are mainly independent Directors, is tasked with formulating proposals, to be submitted to the Board of Directors, for the remuneration of the Managing Directors and/or other directors appointed for specific offices. It may suggest, for example, the use of variable incentives linked to economic results achieved by the Company and/or the meeting of specific targets, including stock options. At the suggestion of the Managing Directors, moreover, it takes action to determine the criteria for the remuneration of the top management of the Company, without prejudice to the specific duties of the Managing Directors themselves.
The governance model of Cementir Holding SpA also provides for a Manager responsible for financial reporting, appointed by the Board.
The Board has granted to the Manager responsible for financial reporting the powers necessary to perform his duties as in points 2 and 3 and in art. 154 bis of the Consolidated Finance Act.
Lastly, the governance model chosen by the Company provides for the role of Lead Independent Director to serve as the representative and coordinator of the requests and contributions of the non-executive directors and particularly those of the independent directors.

Internal control and risk management system

The Company's internal control and risk management system consists of a set of rules, procedures and organisational structures established to ensure, through the appropriate identification, assessment 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 aid of the Control and Risks Committee it updated the Internal Control and Risk Management System Guidelines which were approved at the meeting on 29 July 2015.

This document details the roles and responsibilities of the main supervisory bodies such as the Control and Risks Committee, the Director responsible for the internal control and risk management system, the Head of Internal Audit, the Head of Risk and Compliance and the Supervisory Body pursuant to Italian Legislative Decree no. 231/2001.

The Control and Risks Committee is responsible for:

a. assisting the Board of Directors in defining and updating these Guidelines;

b. assisting the Board of Directors in assessing the internal control and risk management system;

c. assisting the Board of Directors in approving, at least once a year, the work plan prepared by the Head of Internal Audit, after consulting the Board of Statutory Auditors (and the Director responsible for the internal control system);

d. examining periodic reports concerning the assessment of the internal control and risk management system, and those of particular significance prepared by the Internal Audit department;

e. monitoring the independence, suitability, effectiveness and efficiency of the Internal Audit department, reporting to the Board of Directors, at least once every six months, on the activity carried out as well as on the adequacy of the internal control and risk management system;

f. together with the Manager responsible for financial reporting and the auditors, and after consultation with the independent auditor and the Board of Statutory Auditors, assessing the correct use of accounting standards and their consistency for the purpose of drafting the consolidated financial statements.

The Internal Audit department is responsible for checking that the internal control and risk management system is always adequate, fully operative and efficient. The body is part of the Chairman's staff, it is not responsible for any operational area, it does not report to any head of operational areas but reports to the Director in charge of the internal control and risk management system and to the Board of Statutory Auditors on the management of risks, compliance with the plans defined for their mitigation, and assessment of the adequacy of the internal control system.

Organisational and Control Model pursuant to Italian Legislative Decree No. 231/2001

In 2008, the company adopted an Organisational and Control Model pursuant to Italian Legislative Decree no. 231, dated 8 June 2001. The organisational model, resulting from the analysis of risks of corporate offences in connection with operations carried out by Cementir Holding, was developed in line with the principles stated in Italian Legislative Decree no. 231/01, Italian best practices and Confindustria recommendations, and is suitable for preventing the offences envisaged in the aforesaid regulatory text. Following the update of Italian Legislative Decree no. 231/01 and the introduction of new categories of offence, including those indicated in Italian Law no. 190/2012 relating to "Regulations for the prevention and repression of corruption and illegality in the public administration", the Company updated its Organisational and Control Model, the content of which was formally approved by the Board of Directors on 26 July 2013.

This Model provides a further element of thoroughness and sense of responsibility in both internal and external relations, and at the same time offers shareholders sufficient guarantees of efficient and correct management. The Model contains a list of procedures aiming to cover risks deriving from sensitive operations that may be exploited for the purposes of committing the offences covered by the aforesaid decree.

The Code of Ethics is an integral part of the Model, and contains all the guidelines related to conducts

that may give rise to the categories of offence listed in Italian Legislative Decree no. 231/01, forming the basis for setting up the preventive control system.
Amongst the various types of ethical and behavioural principles, the Code includes protection of health, safety and the environment.
The Code has been distributed to company personnel and may be consulted on the website www.cementirholding.it. With the adoption of the Model, the Board of Directors of Cementir Holding appointed a Supervisory Body comprising an independent external member and two internal members (the head of Internal Audit and the head of risk and compliance).
The Supervisory Body is responsible for:

a. updating the Organisational and Control Model;
b. overseeing the implementation of the Model;
c. checking the effectiveness of the Model in preventing the perpetration of the offences envisaged by Italian Legislative Decree no. 231/01;
d. periodically performing targeted checks to ensure that the Model is efficient and complied with;
e. keeping watch on the validity and adequacy of the Model;
f. periodically notifying and reporting to the Board of Directors and the Board of Statutory Auditors on the activities it has carried out, reports received, corrections and improvements to the Model and progress on their achievement.

The Supervisory Body is authorised to access, or delegate others to access on its behalf, all the activities performed by the Company and the related documentation.

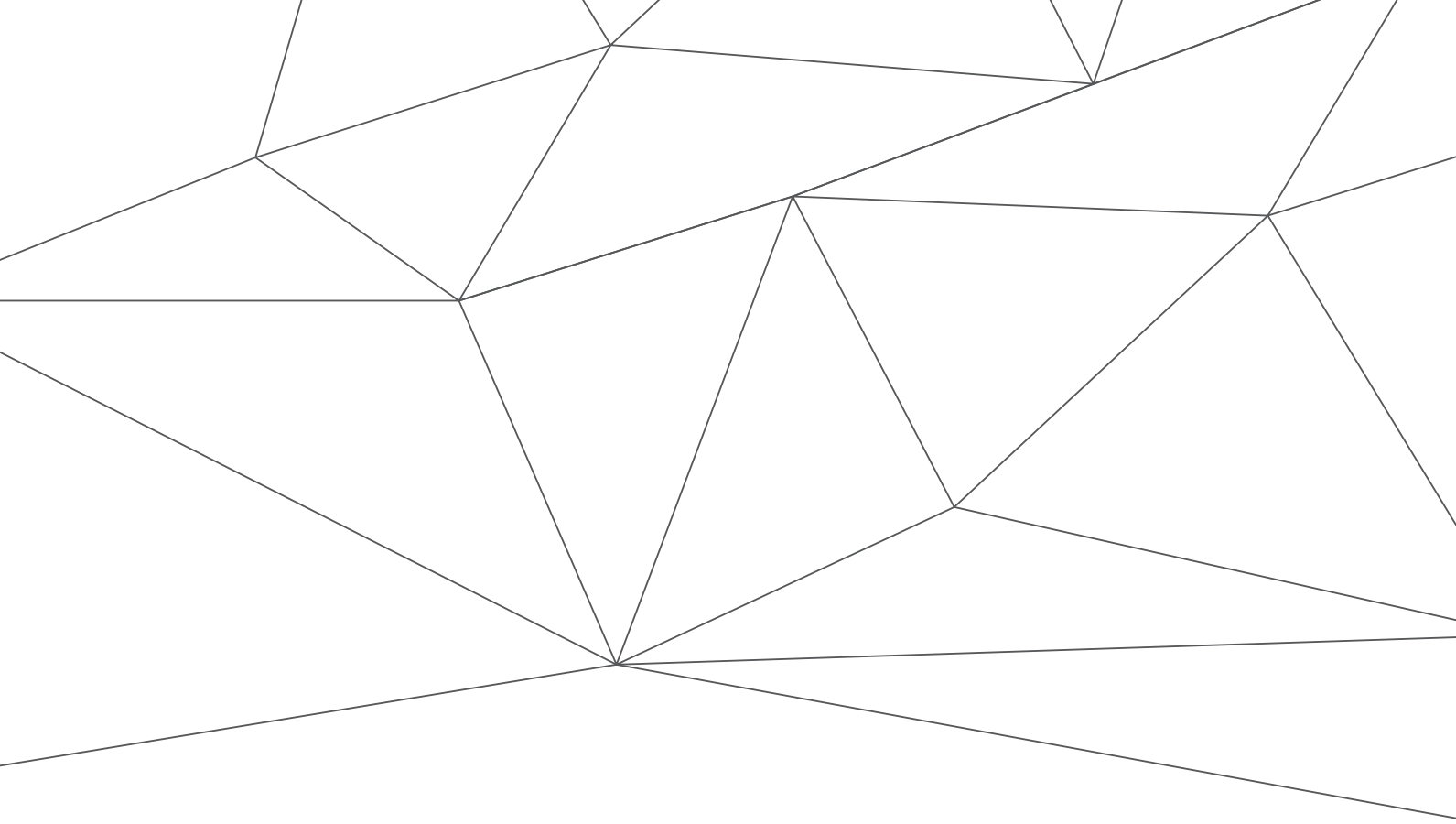
2015 Performance

HSE Goals	Status	Comment
Reducing specific emissions		Emissions of NOx per t/TCE decreased by 1.8% against last year
		Emissions of SO_2 per t/TCE decreased by 9.3% against last year
		Emissions of CO_2 per t/TCE decreased by 0.2% against last year
Controlling energy consumption		Consumption of thermal energy per t/TCE increased by 3.5%
		Consumption of electricity per t/TCE increased by 2.6%
Increasing use of alternative fuel and raw materials with specific projects in Italy, Denmark and Turkey		Use of thermal energy from alternative sources increased by 31.9% against 2014
Lowering accident rates		The frequency rate increased by 13.1% compared to 2014
		The severity rate increased by 38.3% compared to 2014
Maintaining and increasing ISO 14001 and OHSAS 18001 environmental certifications		The number of certified plants increased

2016 Goals

- Reducing specific emissions;
- Controlling energy consumption;
- Increasing use of alternative fuel and raw materials;
- Maintaining and increasing ISO 14001 and OHSAS 18001 environmental certifications;
- Lowering accident rates.

Quarry of Maddaloni ITALY



2 Environmental performance

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43 Innovation, Research and Development

The cement production cycle and environmental aspects

Cement is produced from natural raw materials such as limestone, gypsum and clay extracted in natural quarries and subjected to a crushing process. These materials are then properly dosed, mixed with other elements and ground to obtain the "raw meal". The latter is brought at very high temperatures in special kilns, which are fuelled mainly by fossil fuels, in order to obtain a semi-finished product known as "clinker", cement's main component.

Once cooled, clinker undergoes a process to grind and mix it with gypsum and other admixtures (such as slag, fly ash, limestone, pozzolan) to obtain the various types of cement.

The operations performed in the various phases involve a number of significant environmental aspects, briefly described below.

Natural resources

The raw materials used in the production cycle, generally gypsum, limestone and clay, are of natural origin and are extracted from quarries by various methods. Within this process, the focus is placed on all the environmental aspects connected with mitigating the effects on the ecosystem, restoring and recovering the areas concerned and the use of non-natural raw materials.

Their extraction requires careful consideration of all the environmental aspects, and must be planned to satisfy industrial efficiency and environmental sustainability criteria, while minimising the effects on the ecosystem and making possible recovery of the areas concerned. Particular attention is also paid to use of non-natural raw materials and recovered materials.

Energy resources

Cement production processes require considerable levels of energy, given the high temperatures that must be reached in the kiln (1500°C), the electricity used to grind the product and the quantity of material used.

Emissions into the atmosphere

Emissions into the atmosphere are principally composed of gases, such as sulphur and nitrogen oxides, greenhouse gases linked to the combustion process and raw material decarbonisation process and dusts produced during the grinding process.

Waste

The cement production process does not in itself generate waste. The only waste produced derives from accessory activities, such as maintenance, warehousing and office activities.

Noise emissions

Noise emissions are connected with some of the cement processing phases, such as grinding operations (raw materials, cement and solid fuels).

Water resources and discharges

The production process uses limited quantities of water, required essentially for the conditioning of gases output from the kilns and for cooling the machinery.

Transport

The method of transport of the raw materials and finished products is another point requiring attention, given the related environmental impacts.

Data collection process

The Cementir Group considers environmental friendliness to be a primary value of its business and, therefore, it complies with the regulations on environmental preservation and protection in all the Countries where it operates and guides its strategic choices in such a way as to comply with the principles of sustainable development, In this sense, it encourages Directors, employees and other workers of the Group to address environmental protection issues. The 2015 Environmental Report is the result of a complex process, implemented by Cementir Holding by setting up an operational group at Corporate level, made up of various functions representing the areas connected with the environmental and financial reporting of the Group.

The working group followed the data collection process, identified the performance indicators and prepared the reports. Environmental data was collected by sending out a reporting package to the

plants included within the reporting framework and entering and consolidating the individual reports in the SAP Business Warehouse.

Performance indicators

Performance indicators were used as reporting tools within the environmental performance assessment process – in particular with regard to emissions and consumptions – in that they describe the Group's performance in relation to production in a concise, uniform and easily comparable way. Production is indicated in equivalent tons of cement (Total Cement Equivalent - TCE), an indicator connected with the plant's production of clinker, based on the production of clinker and the average clinker/cement ratio of the plant. This decision was taken considering that production of clinker, the main component of cements, is the phase in which environmental impacts are concentrated. The graphs below show the data at consolidated level for the years 2015, 2014, and 2013. For further information on the abbreviations used and the method of calculation, please refer to the final section of the Report.

Reference framework

The data used to calculate the environmental performance refer to the cement production plants located in:

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

The production in these plants accounts for approximately 97% of the Group's total production of cement in 2015.

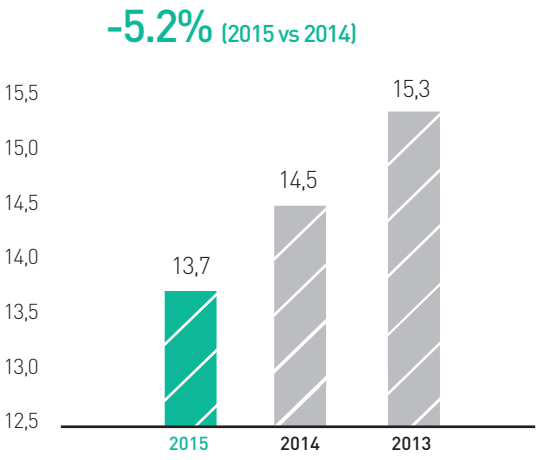
Natural resources

The cement production process begins with the extraction of raw materials in quarries. They are natural raw materials like limestone, gypsum, marl and clay. The raw materials are mainly used in two phases: initially they are mixed to produce the meal (first phase) used to produce clinker; then they are added to the clinker that has been produced and deposited in the mills (second phase) to obtain various kinds of cement. In 2015, Cementir Group plants used a total of approximately 13.7 million tons of raw materials to produce cement. This figure has decreased (-5.2%) against the amount recorded last year.

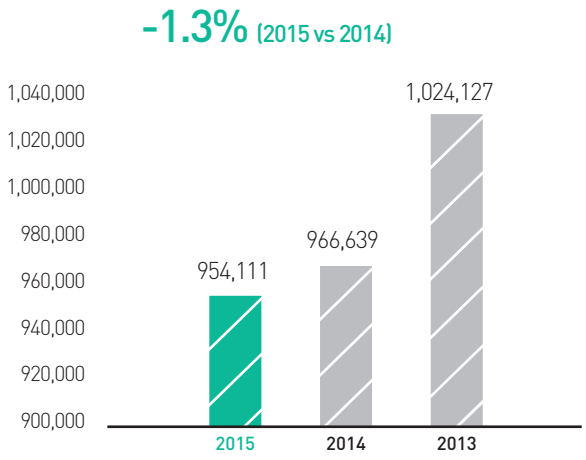
To limit or reduce consumption of non-renewable raw materials, the Cementir Group promotes the use of alternative raw materials (thus defined because they do not originate in quarries but from other production processes) such as, for example, foundry sand and slag from blast furnaces.

In 2015, Cementir Group plants substituted around 6.7% of non-renewable natural raw materials with alternative raw materials. The plants that predominantly used alternative raw materials were those in Aalborg, Izmir and Taranto, which account for over 81% of the Group's total production. Another strategy employed by Cementir Group plants to reduce the use of non-renewable raw materials is internal reuse of materials, such as for example the dusts trapped by filters, which are reused in the production process as raw materials. In 2015, Cementir Group plants reused over 842,000 tons of materials recovered internally in production.

Use of raw materials
(tons)



Use of recycled raw materials
(tons)



Energy resources

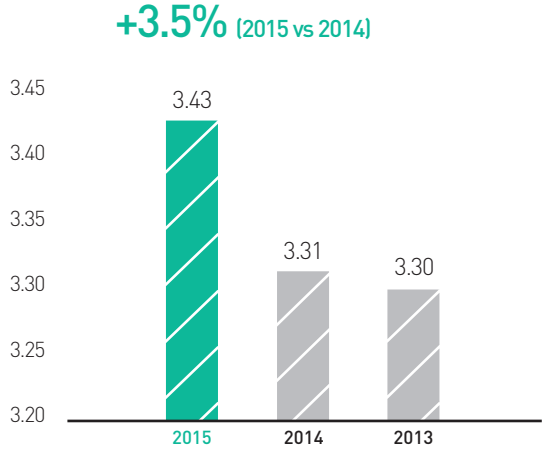
The process for producing cement requires a high consumption of energy resources in the various phases of production. Energy is used in the plants in the form of thermal energy and electricity. Thermal energy is used for start-up and operation of the kilns (1,500°C) and for operation of the burners or boilers required to increase production efficiency and optimise the production process (for example to dry raw materials and fuels). Electricity, on the contrary, is mainly used to operate the mills that grind raw materials, clinker and fuels.

In 2015, Cementir Group plants used approximately 29,646 TJ of thermal energy and 3,820 TJ of electricity with a consumption coefficient per ton of cement produced respectively equal to 3.43 GJ/tTCE and 0.44 GJ/tTCE. The figure for thermal energy is 3.5% higher than the corresponding figure for 2014, while the one for electricity increased by 2.6%. Thermal energy is traditionally produced with fossil fuels (fuel oil, pet coke, coal, natural gas) and partly with alternative fuel, the use of which is promoted by the Group, if authorised by the local authorities and in compliance with the regulations in force in the various countries.

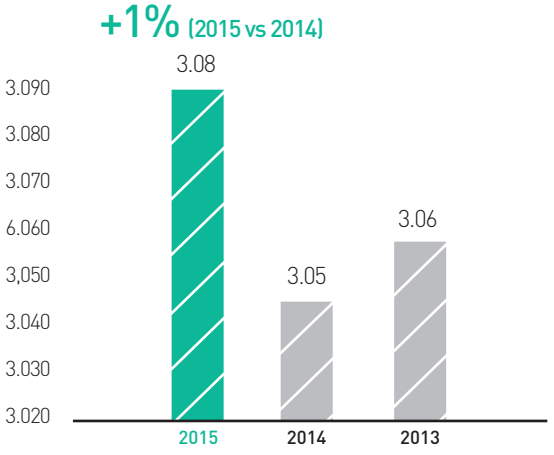
In 2015, the Cementir Group used alternative fuels to produce 10.2% of the total thermal energy.

In particular, use of these fuels was significant at the plants in Aalborg in Denmark (approximately 38.2% for production of grey cement) and Edirne in Turkey (24.1%). At the Aalborg plant, additionally, part of the heat is recovered from the exhaust fumes and used for domestic heating in the nearby city. In 2015, heat recovery amounted to approximately 0.64 GJ per tTCE produced, generating energy for a total of 337.300 MWh and serving a population of around 24,300 families.

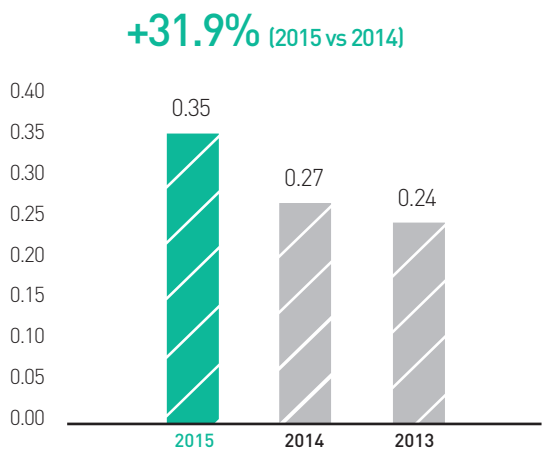
Consumption of thermal energy/ton cem Eq
Thermal energy (Gj/tTCE)



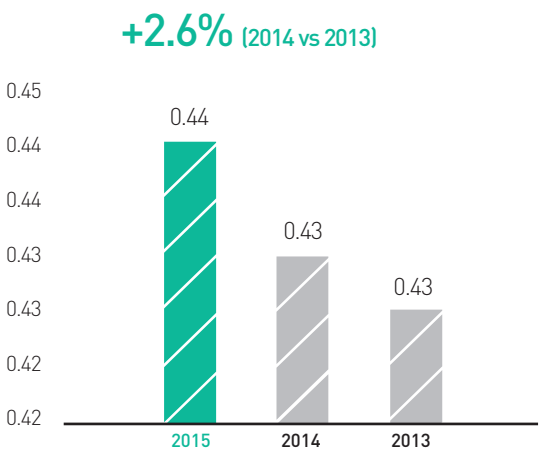
Use of thermal energy from fossil sources
Thermal energy (Gj/tTCE)



Use of thermal energy from alternative sources
Thermal energy (Gj/tTCE)

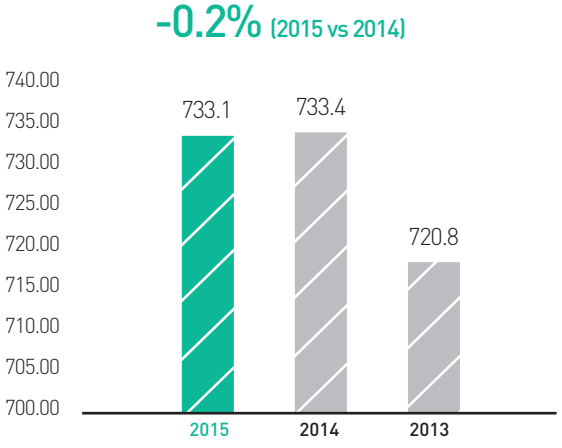


Consumption of electricity/ton cem Eq
Electric energy (Gj/tTCE)

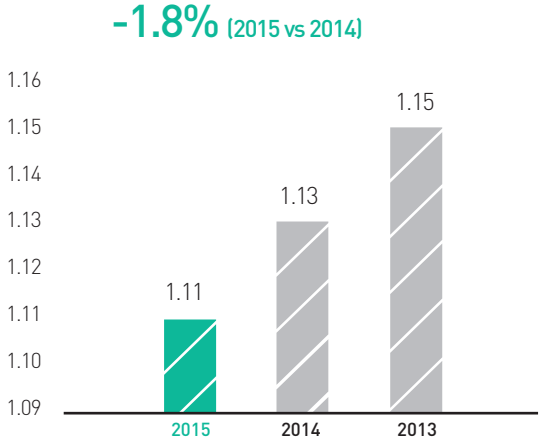


Emissions into the atmosphere

Carbon dioxide emissions
CO_2 (kg/tTCE)



Nitrogen oxide emissions
NOx (kg/tTCE)



Environmental impact in terms of emissions into the atmosphere, principally of carbon dioxide, dusts and nitrogen and sulphur oxides, are associated with the cement production process.

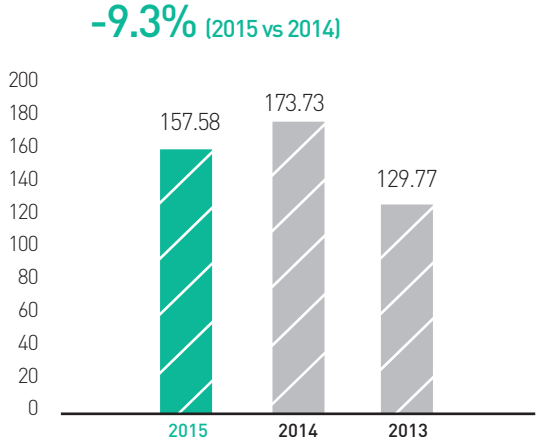
Emissions from the kiln are piped and filtered, before being emitted into the atmosphere. Carbon dioxide (CO2) emissions are generated in the raw materials heating and pre-calcination phases and through the consumption of fossil fuels. Carbon dioxide emissions at Cementir Group plants in 2015 amounted to 6.40 million tons, a figure that decreased from that of 2014 (6.78 million tons). Also the emission coefficient per ton of cement produced in 2015, amounting to 733,1 kilograms per ton of cement equivalent (Kg/TCE), slightly decreased against the coefficient measured in 2014 (733,4 Kg/TCE).

Emissions of nitrogen oxides (NOx) are linked to combustion, in particular to some types of fuel used; in 2015, emissions of NOx at Cementir Group plants totalled 9,927 t, with and emission rate per ton of cement (kg/t TCE) of 1.11; there was therefore a reduction of 1.8% against the figure measured in 2014. Sulphur dioxide (SO2) emissions are linked to the presence of sulphur in the fuel and raw materials used; in 2015, SO2 emissions at Cementir Group plants amounted to 917 t, with an emission rate per ton of cement (gr/t TCE) of 157.58, showing a decrease against 2014 (-9.3%).

Dust emissions of Cementir Group plants, in 2015, amounted to 395 t with an emission rate per ton of cement (g/t TCE) of 45.21.

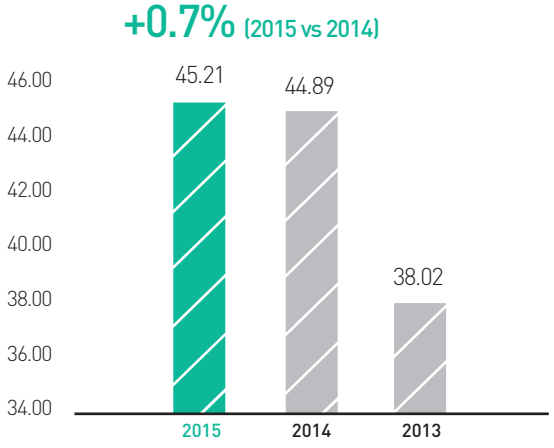
Sulphur dioxide emissions

SO_2 (gr/tTCE)



Dust emissions

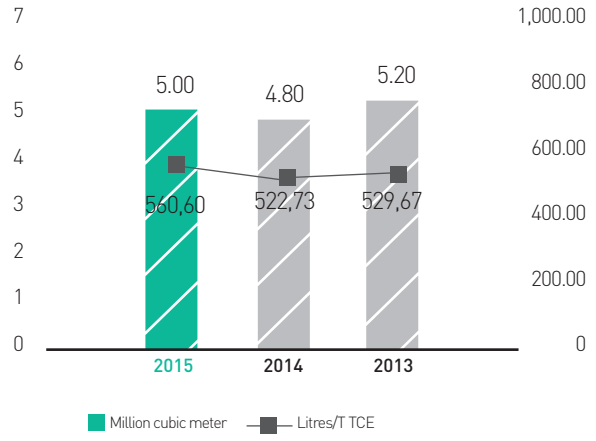
Dust (gr/tTCE)



Water resources and discharges

Impacts of the cement production process on water resources are principally linked to consumption, since the discharge of water is not significant either with regard to quantity or to concentration of pollutants.
In dry cement production processes, water is used principally to cool the systems and for the conditioning of the kiln gases; in wet and semi-wet production processes, on the contrary, the specific consumption of water resources is higher in that the water is vaporised during the production process. In 2015, Cementir Group plants have used a total of 5.0 million cubic metres of water, against a consumption in 2014 of 4.8 million cubic metres. The Cementir Group's commitment to a more efficient use of water resources has led to the installation of industrial and rainwater recovery plants; in 2015, the technology used resulted in a level of internal reuse of process water of 4,850 thousand cubic metres, a slightly lower figure than that of 2014, which was 5,407 thousand cubic metres. The average rate of specific consumption per ton of cement produced in 2015 was 560.60 Litres/tTCE, with an increase over the rate of 2014.

Water consumption



Transport

Production operations in a cement manufacturing plant involves numerous transport activities:
- inside the plant, for material handling;
- outside the plant, for incoming materials and fuels and for outgoing products.

Considering the distances travelled and the connected environmental impacts (emissions and traffic generated), transport outside the plant – which may make use of various means, such as motor vehicles, trains, ships and conveyor belts – is the most important of these; the choice of the means of transport to be used is mainly influenced by the location of the plant and by the local infrastructure.
In 2015, incoming materials and outgoing products were transported mainly by motor vehicles; the plants in Aalborg, Izmir, Ipoh, Anqing and Taranto also used transport by ship thanks to the presence of the necessary infrastructure.
With regard to incoming materials:
- 88.86% arrived at the plants by motor vehicle (88.92% in 2014);
- 5.22% arrived by ship (4.68% in 2014);
- 6.36% arrived by conveyor belt connecting the quarry with the plant (6.41% in 2014). Such material handling is to be considered outside transport.

Of the total products leaving the Cementir Group plants in 2015, 77.51% was transported by motor vehicle and 22.49% by ship (in 2014, these figures were respectively 77.18% and 22.82% of the total).
The following table shows the Group plants that used transport by sea with the respective percentages for the years 2015, 2014 and 2013.

Plant	Country	% of product transported by ship		
		2015	2014	2013
Aalborg	Denmark	73.5	76.0	71.0
Izmir	Turkey	30.9	37.0	30.2
Ipoh	Malaysia	83.4	73.8	78.5
Anqing	China	51.0	51.0	51.0
Taranto	Italy	31.0	36.0	44.0

Waste

The cement production process does not in itself generate waste; the quantities of waste produced in the plants can be attributed to accessory activities, such as maintenance, warehousing and office activities, which generate waste in the same way as every production plant.
Management of waste produced in Cementir Group plants is governed by the regulations in force in the countries where the Group operates, privileging reuse and recovery of materials. The total quantity of waste produced by Cementir Group plants in 2015 was 144,741 t, slightly more than the figure recorded in the corresponding period of 2014 (140,523 t). The percentage of the total to be recovered, however, was 62.4%, with a marked increase compared to the corresponding period of 2014 (27.6%).

Noise emissions

The cement production process generates noise emissions in various phases, in particular during the handling of raw materials and fuels and during grinding.
Even though the production plants are located in industrial areas, with limited discomfort for the population, the Cementir Group monitors the noise generated by regular sampling and assessments of acoustic impact, in order to ensure compliance with the regulations in force and mitigate acoustic impacts. Besides limiting the discomfort perceived by the surrounding structures, mitigation of acoustic emissions aims to ensure a better working environment for Cementir Group employees.

The ready-mixed concrete production cycle and environmental aspects

Ready-mixed concrete is made by mixing aggregates, cement and water, with the aggregates serving as bulk, while the cement, reacting chemically with water, serves to bond the other elements. Sometimes admixtures of various kinds diluted in water are added to obtain specific results or performances, for example greater fluidity or rapid setting.

Ready-mixed concrete is made and pre-packed in plants known as concrete mixing plants where the mixture is dosed directly in special equipment. The mixing stage may take place directly at the plant (thanks to premixers) or during transport by special vehicles (mixer trucks) able to ensure the continuous mixing of the product so that it maintains its fluidity, an essential characteristic of building works.

When the ready-mixed concrete reaches the building site it is ready for use, i.e. the "pouring" phase. Often, before being "poured", the ready-mixed concrete is subjected to a special process known as "pumping". This consists of a second transport phase through piping, which makes it much easier to reach particular heights to form floor slabs, tunnels, etc.

The operations performed in the various phases involve a number of significant environmental aspects, briefly described below.

Natural resources

The natural raw materials used in the production cycle, sand and crushed stone of various sizes, derive from exploitation of quarries. Within this process, the focus is placed on all the environmental aspects connected with mitigating the effects on the ecosystem, restoring and recovering the areas concerned and the use of raw materials.

Emissions into the atmosphere

Emissions into the atmosphere are mainly connected with the handling of aggregates, during unloading of cement and loading of the mixer trucks. All emission points are fitted with special filters, subject to periodical maintenance, which are able to significantly reduce dust emissions. Emissions are constantly monitored by collecting samples and performing laboratory tests.

Water resources

In the ready-mixed concrete production process, water is used to bond aggregates, cement and admixtures together.

Noise emissions

Noise emissions are limited and are connected exclusively with operations to load mixer trucks and to handle aggregates.

Performance indicators

The graphs below show the data at consolidated level related to ready-mixed concrete production, raw materials used and water resources used for the years 2015, 2014 and 2013.

Reference framework

The data used for the environmental performance related to the ready-mixed concrete sector refer to the production plants located in Italy, Denmark, Norway and Turkey. The production in these plants accounts for approximately 95% of the Group's total production of ready-mixed concrete in 2015.

Natural resources

In 2015, Cementir Group plants used a total of approximately 7.9 million tons of raw materials to produce ready-mixed concrete.

Use of non-renewable raw materials

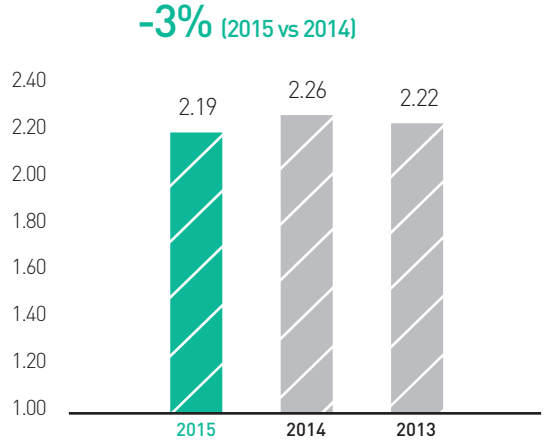
(tons)

	2015	2014	2013
Sand	2,057,798	2,007,372	2,051,278
Cement	1,207,481	1,120,384	1,073,244
Crushed stone	4,358,165	4,292,726	4,494,030
Other raw materials	2,089	1,338	2,000
Admixtures	230,726	113,203	257,818
Total	**7,856,259**	**7,535,024**	**7,878,370**

The 4.3% increase against 2014 is the consequence of the more than proportional increase in the production of ready-mixed concrete in the period (+7.4%). Consumption of raw materials per cubic metre of ready-mixed concrete produced in 2015 decreased against the corresponding figure for 2014 (-2.9%).

Use of non-renewable raw materials in the production of ready-mixed concrete

Tons of raw materials per m^3 of ready-mixed concrete



To limit and reduce consumption of non-renewable raw materials, the Cementir Group promotes the use of alternative raw materials (thus defined because they do not originate in quarries but from other production processes) such as, for example, fly ash and microsilica with the aim of replacing natural raw materials with alternative raw materials. In 2015, Cementir Group plants used 175,736 tons of alternative raw materials in the production cycle, with an increase of +27.8% compared to 2014 (137,520 tons).

Use of alternative raw materials

Values in tons

	2015	2014	2013
Fly ash	158,411	126,268	113,496
Microsilica	17,325	11,252	14,165
Total	**175,736**	**137,520**	**127,662**

Transport

Production operations in a plant manufacturing ready-mixed concrete involve transport of incoming raw materials and fuel, and of outgoing finished product (ready-mixed concrete).

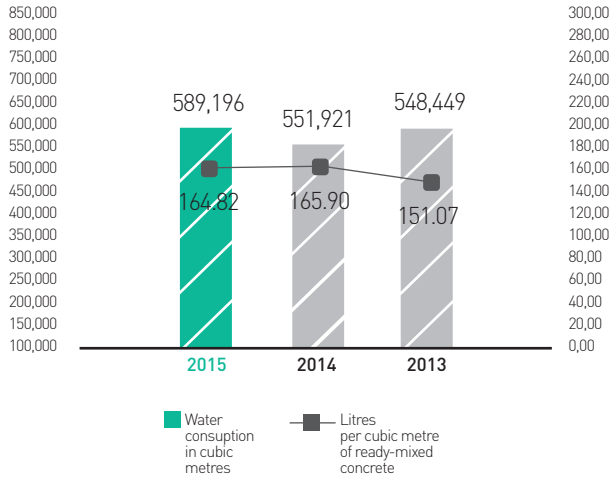
In 2015, incoming materials and outgoing products were transported mainly by motor vehicles (86%); the Unicon plants in Norway also used transport by ship for 60% of all the materials arriving at the plants, a figure that was substantially in line with that of the same period of 2014.

Water resources

Water consumption in 2015 totalled around 0.59 million cubic metres, in line with the consumption figures of 2014 (0.55million m^3). Specific consumption in cubic metres of water per cubic metres of ready-mixed concrete produced dropped slightly against 2014 (-0.7%). Thanks to the recycling and settling systems, it has been possible to limit, as far as permitted, the drawing of water for use in the production cycle, guaranteeing reuse of process water and elimination of discharges. The figure for 2015 was 75,888 cubic metres, showing an increase over the previous year's figure (70,864 m^3).

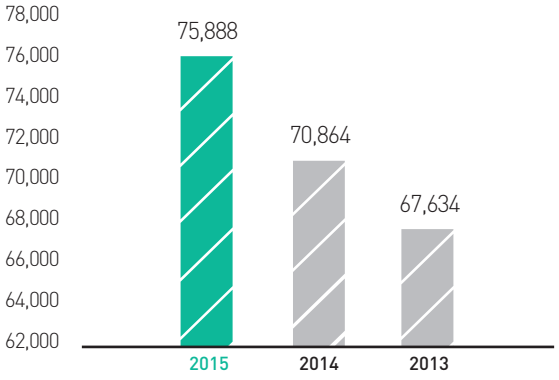
Water consumption

(m^3) **-0.7%** (2015 vs 2014)



Recycled water

(m^3) **+7.1%** (2015 vs 2014)



The waste management cycle and environmental aspects

The main objective of the waste management process is to recycle waste and produce alternative fuel and thermal energy using the most advanced biological technologies, reducing waste sent to landfills. In fact, waste is a source of recyclable materials as well as of alternative fuel with a high heating capacity.

Cement production requires very high temperatures in the kiln and fossil fuels, which generate greenhouse gas emissions, are used to obtain these temperatures. Using alternative fuel derived from industrial and solid urban waste has a very positive impact on the environment, both because it reduces the employment of fossil fuels and the related CO2 emissions, and because it offers a solution to the problems of storage and disposal of urban waste.

Storage of urban waste causes release of methane a gas that causes more harm to the environment than carbon dioxide. Pollution by methane has in fact an effect that is 21 times higher than carbon dioxide pollution. Using urban waste as alternative fuel in cement plants is therefore fundamentally important in contributing to sustainable disposal of solid urban waste and reducing the negative effects of greenhouse gases. Moreover, unlike the process in waste-to-energy plants, use of waste as alternative fuel in cement plants does not produce residues. The ash deriving from combustion is recycled in cement production.

The Cementir Group has used applicable and well-tried integrated solutions, and has invested in the development and the widespread use of innovative technologies for waste management and fuels from waste, such as for example sorting, recycling and biodrying.

In Kömürcüoda (Istanbul), the Cementir Group has invested heavily in the recycling of solid urban waste and the production of alternative fuels for use in the cement industry. The waste processing plant in Kömürcüoda is able to supply fuel to Cimentas plants and to the whole cement industry, besides providing a sustainable solution to the problem of solid urban waste in a great metropolis like Istanbul.

Additionally, in order to use the dried sludge deriving from the municipal sewer system as an alternative fuel, investments have been made in the feeding systems for this material in the plants in Izmir and Edirne. At the same time, at the Edirne plant, an automatic feed system with a capacity of 12 tons/hour has been completed, allowing urban waste to be fed into the production system. In the immediate future, the aim will be to use up to 70,000 tons/year of urban waste as an alternative fuel. Feeding large quantities of waste into the cement production system is possible only with efficient and controlled automatic feed systems chosen according to the type of waste processed.

Kula Plant TURKEY

Solid urban waste management cycle

Waste collection

Collection

Solid urban waste is transported by lorry into the processing plant.

Pre-mechanical processing plant

In the processing plant, the waste is subjected to mechanical biological separation in order to divide the organic fraction and recyclable materials.

Mechanical separators such as vibrating finger screens, ballistic separators, automatic pneumatic lines and magnetic separators are used to classify and divide plastic fractions like PET, HDPE, LDPE, PP and PS and metal materials (aluminium, iron and others). The organic fraction measuring less than 70 mm and the low quality LDPE plastic are sent to the biodrying process. The remaining heavy and inert material is sent to the landfill. Glass materials are also collected and all the recycled materials are pressed for later sale.

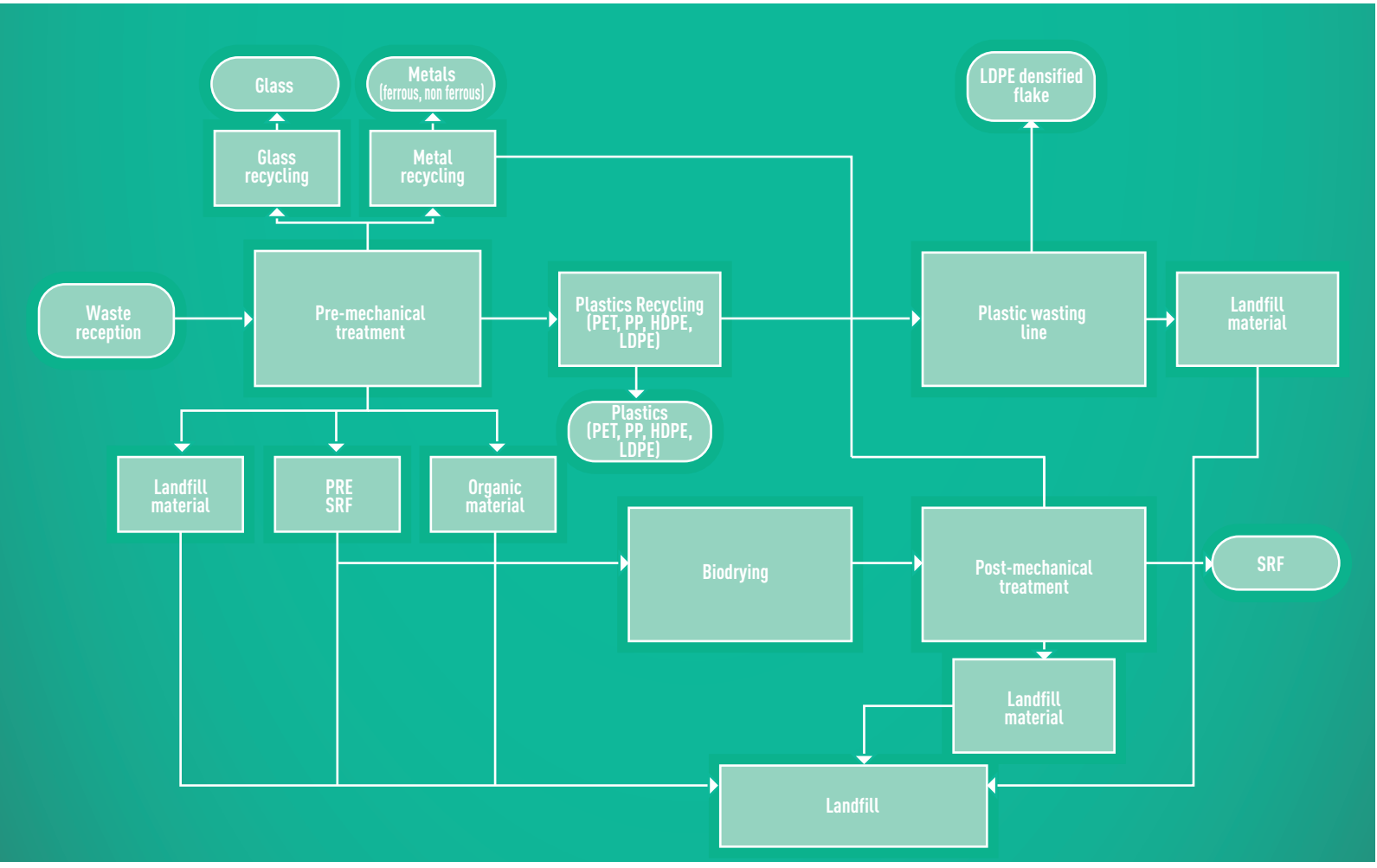
Alternative fuel production

Biodegradable waste (organic food waste) and other plastic materials are dried in bio-dried sheets. The stacked material is kept under special membranes without using extra heat, but with special aeration that makes it possible to reduce the level of humidity contained from 55% to less than 25% in three or four weeks.

Using post mechanical treatment, this material is processed to produce alternative fuel with a unitary measurement of 30 mm.

Plastic washing plant

Selected transparent films (LDPE) are converted into clean plastic flakes through various processes, such as crushing, washing and using special equipment like centrifuges, special tanks, reactors and other machinery.



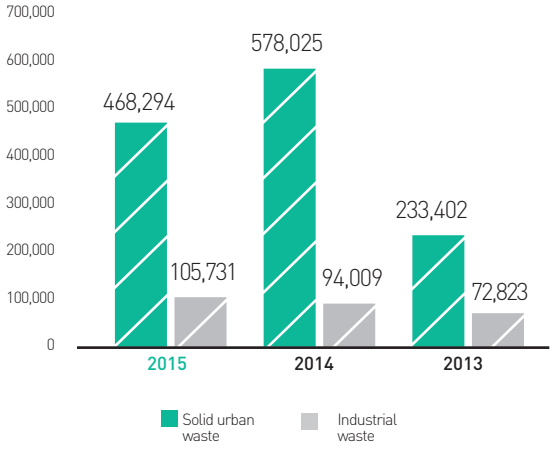
Reference framework

The data used to calculate the environmental performance refer to the waste processing plants located in Turkey (Kömürcüoda and Kula) and England (Blackburn and Clayton Hill).

Processed waste

During the course of 2015, over 574,000 tons of waste were collected for processing at the Group's plants. Of this, 468,294 tons were solid urban waste, the majority of which (460,486) was collected at the Kömürcüoda plant in Istanbul. Processed industrial waste, on the other hand, totalled 105,731 tons, 47,857 of which were collected by Sureko at the plant in Kula (Turkey), while 57,874 tons were processed at the Neales Waste Management plant in the UK.

Processed waste
(tons)

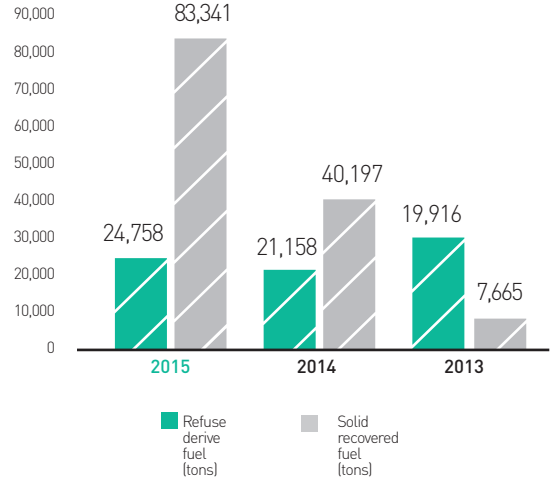


Alternative fuel production

Waste can be treated, using biomechanical processes and drying, to produce refuse-derived fuel (RDF) and solid recovered fuel (SRF). The latter is distinguished from the former by the fact that it complies with specific quality standards since it is in conformity with the European EN 15359 standard that requires that the maker specify the net thermal value and the chlorine and mercury content of the fuel produced.
During 2015, the Group's waste processing plants produced 108,000 tons of alternative fuel from waste with a 76% increase over 2014. Of these, around 25,000 tons were RDF and 83,000 were SRF.

Alternative fuel produced
(tons)

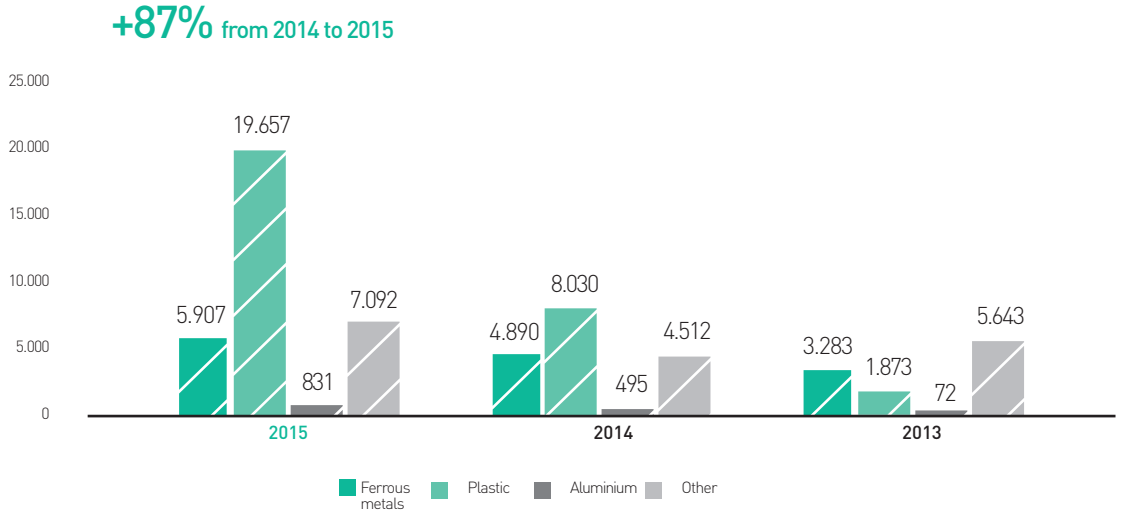
+76% from 2014 to 2015



Recycled materials

In 2015, 33,487 tons of material have been recycled at the Group's plants, using mechanical selection and processing, with an 87% increase over 2014.

Recycled material produced (tons)



Sureko Plant TURKEY

Innovation, Research and Development

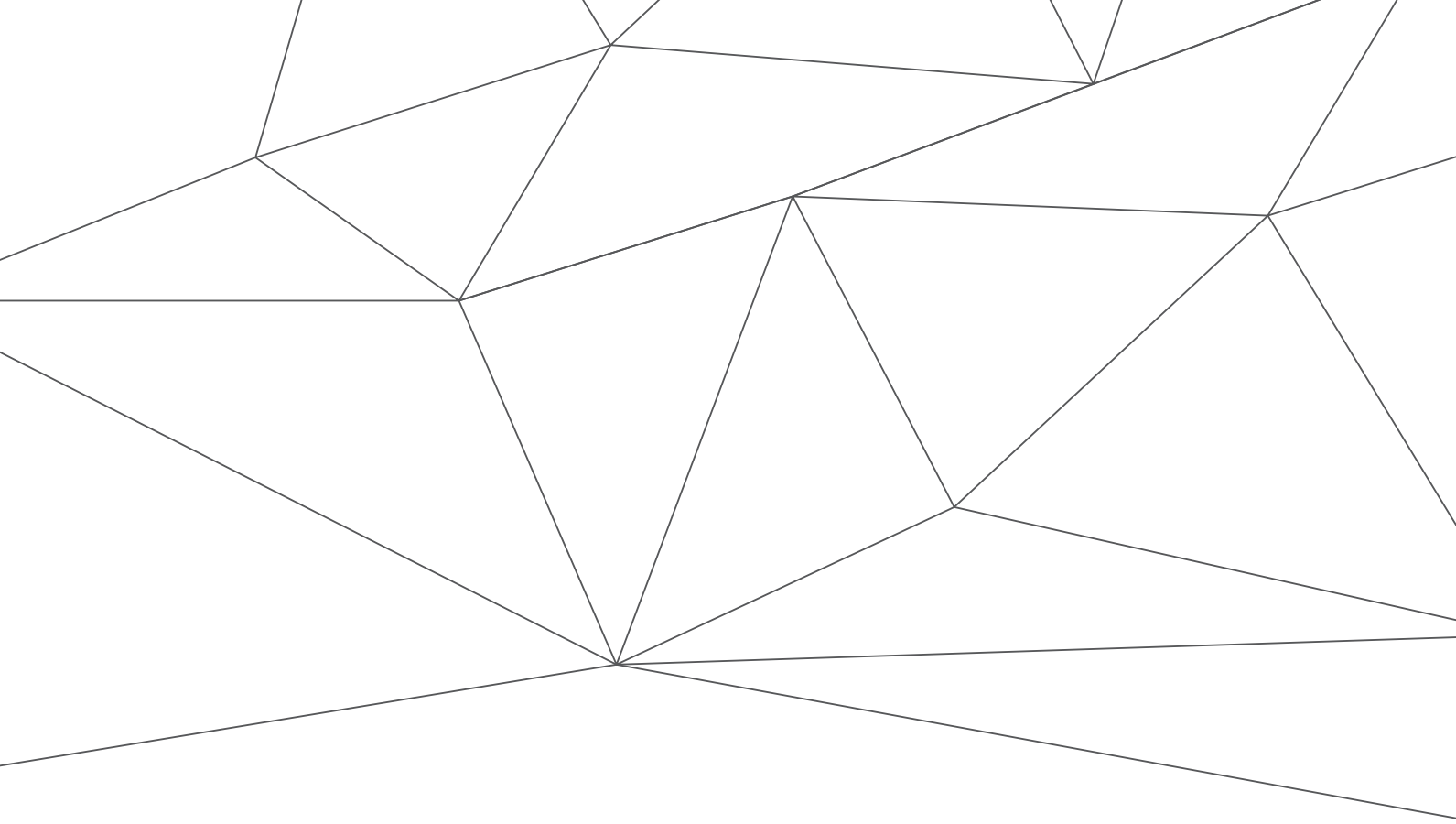
Innovation, research and development are essential to the Cementir Group and have the dual aim of improving product quality and cutting production costs. Innovative operations are defined and supported by an "Innovation Committee" through which the Top Management constantly shares the innovative methodologies applied by the various operating companies on products and production processes. We also seek to increase our capacity for innovation through close cooperation with our customers and with all the major stakeholders, both in our traditional sectors of cement and ready-mixed concrete and in the waste management sector.

Cement and ready-mixed concrete

Cement and ready-mixed concrete R&D centres are run by Aalborg Portland in Aalborg (Denmark), by Cimentas in Izmir (Turkey) and by Cementir Italia in Spoleto (Italy). The centres are located near the main production facilities to facilitate close collaboration between R&D specialists, including engineers, chemists, geologists, industrial technicians and product technicians. The centres conduct research into cement and ready-mixed concrete as well into raw materials and fuel used in production, with a view to improving the quality of our products and the efficiency of our production processes and the related environmental issues.

Innovation focuses primarily on developing production processes that minimize CO2 emissions from the cement production cycle and on expanding the portfolio of value-added products. The objective is to reducing CO2 emissions from cement production by using locally-sourced raw materials combined with various compositions of clinker and by making greater use of biological fuels to replace fossil fuels.

Centre for research of Aalborg Portland DENMARK



3 People and the environment

46 Health and Safety

50 Glossary

Health and Safety

The health and safety of employees is a primary commitment for the Group.

Methods used to improve its safety record involve:

- ongoing health and safety training, both on specific matters and on the technical skills required for the correct use of machinery (see paragraph on "Training");
- investments and expenditure in safety devices (both personal and for the plant) and machinery to maintain a high level of technology (see paragraph on "HSE investments");
- use of systems to manage the health and safety of workers (see paragraph on "Certifications").

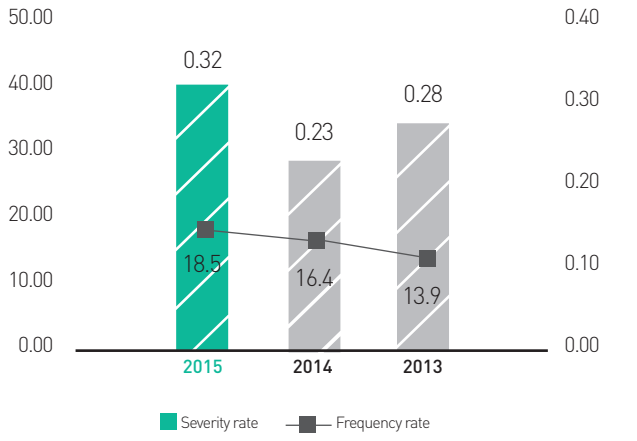
During 2015, there has been an increase in the overall severity and frequency rates in the Group's cement factories, ready-mixed concrete plants and waste processing facilities.

In particular, the severity rate went from 0.23 in 2014 to 0.32 in 2015 (+38%), while the frequency rate measured in 2015 was 18.5 against 16.4 in 2014 (+13%).

Over the last year, no fatal accidents occurred in the Group's production facilities. Additional specific actions are planned to lower the accident rates, including the review of the safety system, delivery of training and performance of audits.

Total Group Accident Rates

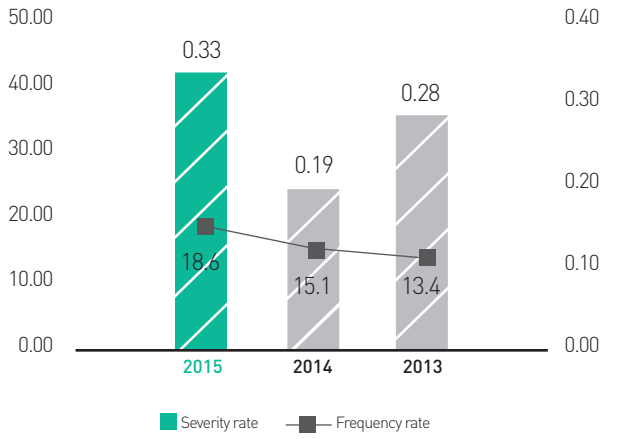
+13.1% Frequency rate **+38.27%** Severity rate



The figures related to the cement plant confirm the overall trend within the Group.

Cement Plant Accident Rates

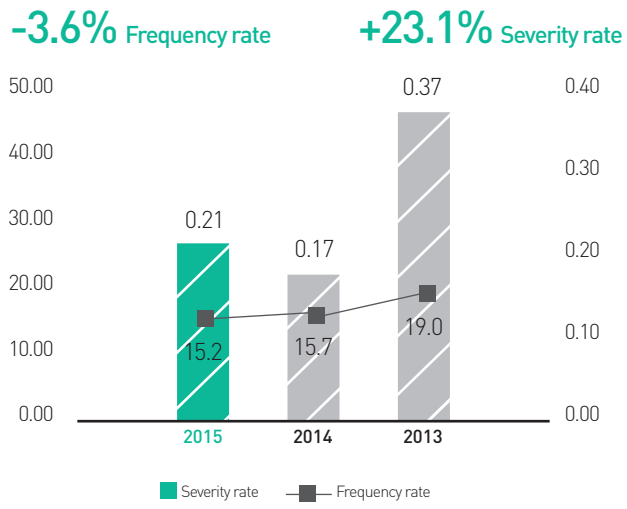
+23.7% Frequecy rates **+74.1%** Severity rate



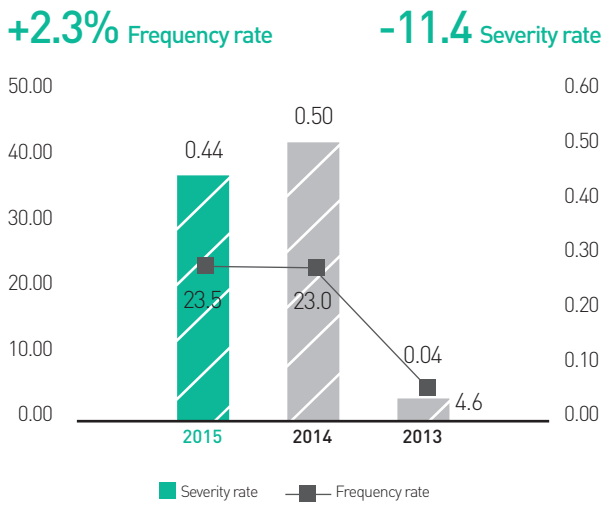
The safety performance, as far as ready-mixed concrete production units are concerned, is positive with regard to the frequency rate, which dropped from 15.7 in 2014 to 15.2 in 2015, while the severity rate increased from 0.17 in 2014 to 0.21 in 2015.

In the waste processing area, the performance was positive with regard to the severity rate, which decreased from 0.50 to 0.44 from 2014 to 2015. On the contrary, the frequency rate increased from 23.0 in 2014 to 23.5 in 2015.

RMC Plant Accident Rates



Waste Plant Accident Rates



Training

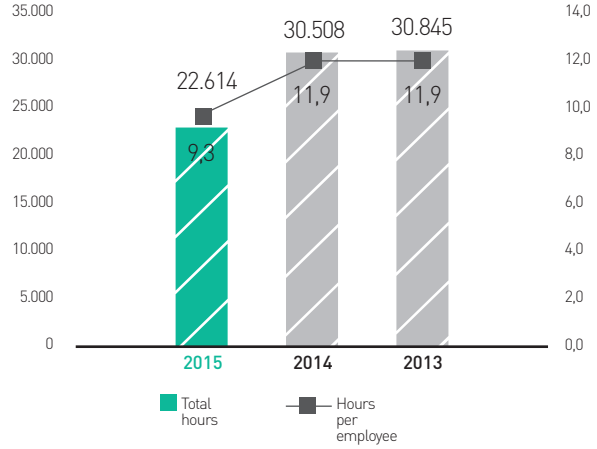
A key element in the strategy of the Cementir Group for continuous improvement of its HSE performance is training on matters regarding the environment, health and safety.

All Group employees receive training and the courses are organised according to specific needs, based on the responsibilities of each employee in the various HSE areas. In 2015, the hours of HSE training in the Group's cement plants totalled 16,925, with an average of 11.3 hours per employee.

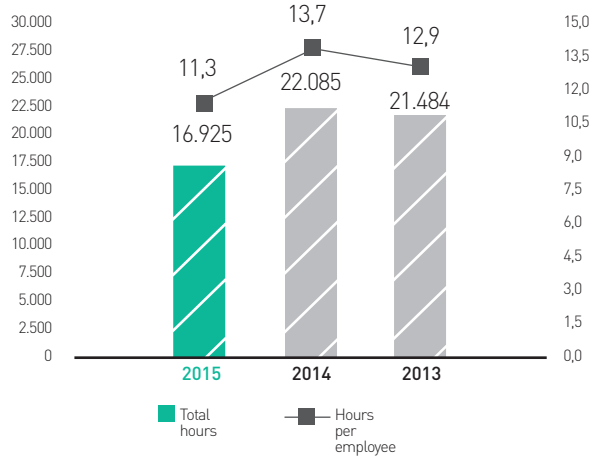
With regard to employees at ready-mixed concrete production plants, in 2015, the hours of training delivered were 1,081, with an average of 1.7 hours per employee.

In the waste processing sector, the hours of training in 2015 were 4,608 with an average of 15.6 hours per employee.

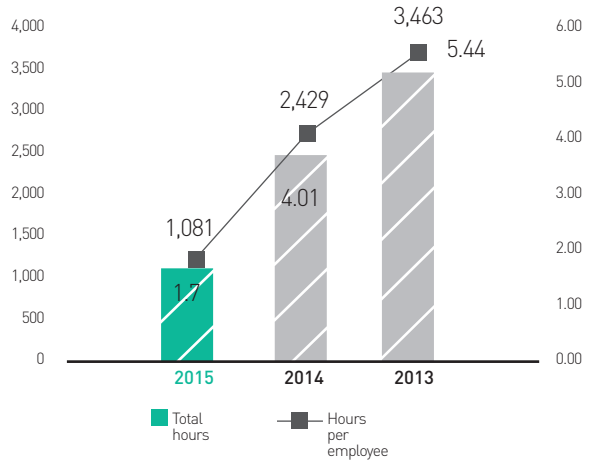
Hours of Group HSE training



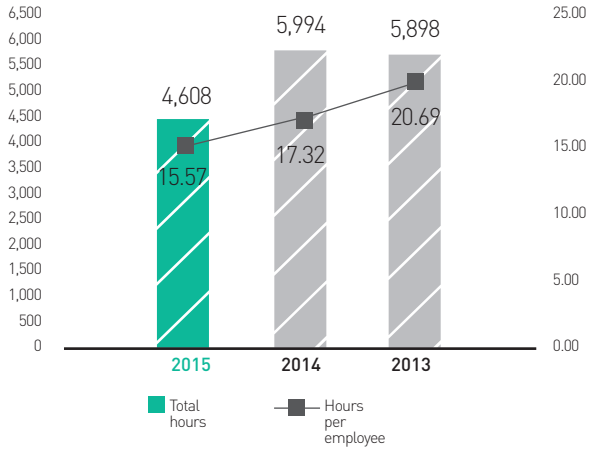
Hours of training per employee - cement



Hours of RMC HSE training



Hours of Waste HSE training



Certifications

The Cementir Group uses environmental management systems certified according to the ISO 14001 standard, and occupational health and safety management systems certified according to the OHSAS 18001 standard, with a view to continuously improving its environmental performance and achieving high standards of safety and protection in the workplace. The ISO 50001 standard for energy management systems has been adopted at our Danish subsidiary, Aalborg Portland.

The following table shows details of the plants certified pursuant to the above standards as well as the EMAS and ISO 9001 standards.

Certified plants	ISO 14001	OHSAS 18001	ISO 50001	EMAS	ISO 9001
Aalborg	x	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				
Spoleto	x				
Taranto	x				x
Ready-mixed concrete					
Unicon Denmark					x
Unicon Norway	x				
Waste					
Sureko	x	x			x
Hereko	x	x			x
Neales Waste Management	x	x			x

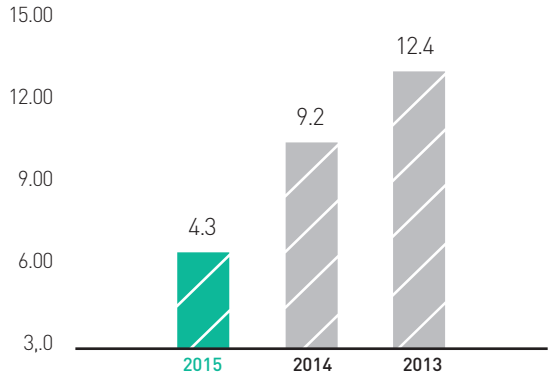
HSE expenditure and investments

The Cementir Group's commitment to health, safety and the environment (HSE) is proved by its economical and managerial efforts towards:

- reducing environmental impacts deriving from production activities;
- ensuring safety in workplaces;
- guaranteeing the health of the workers.

In 2015, the Cementir Group's total investments in HSE came to EUR 4.3 million, 2.7 million of which were for environmental investments and 1.6 million for investments in safety. Over the three-year period 2013-2015, total HSE investments were EUR 25.9 million.

HSE Investments
(millions of euro)



Aalborg Plant DENMARK

Glossary

Cement equivalent (Total Cement Equivalent - TCE): this is an indicator related to the plant's production of clinker and is calculated based on the clinker produced and the average clinker/cement ratio for the year.
CO_2: carbon dioxide.
Direct energy: energy produced in the plant.
Indirect energy: energy purchased outside the plant.
g/tTCE: grams per ton of cement equivalent.
Joule: this is the unit of measurement of energy (one joule is the work required to exert a force of one newton for a distance of one metre). A gigajoule (GJ) is equal to $1*10^9$ joules, while a terajoule (TJ) is equal to $1*10^{12}$ joules.
Frequency rate*: this is the rate used to calculate the size of an accident; it is the number of accidents that have occurred in a year divided by the hours worked in the same year. In order to make the result more easily understood, this ratio is then multiplied by 1,000,000 (one million). The rate gives the number of accidents that have occurred during every million hours worked.
Severity rate*: this is the rate used to calculate the extent of injury (that is the severity of the consequences of accidents at work); it is the number of days of work lost due to accidents divided by the number of hours worked in the same year. In order to make the result more easily understood, this ratio is then multiplied by 1,000 (one thousand).
Accident*: an accidental event that occurs during work and that has caused a temporary and/or permanent physical or psychic injury or the death of the worker.
PPE (personal protective equipment): any equipment designed to be worn or held by a worker with the aim of protecting him/her against one or more risks that may threaten his/her safety or health during work, as well as any supplementary equipment or accessory intended for that purpose.
FPC (fire prevention certificate): a certificate stating compliance with the requirements of fire prevention regulations and with fire safety requirements.
RDF (refuse-derived fuel): a solid dry shredded fuel obtained by the processing of solid urban waste, generally collected in cylindrical blocks known as waste bales.
SRF (solid recovered fuel): a solid dry shredded fuel obtained by the processing of solid urban waste compliant to European standard EN15359.
ISO 14001: a voluntary international standard, establishing the requirements that an efficient environmental management system must have. The ISO 14001 standard is a certifiable standard, meaning that certification of compliance with the requirements contained in it may be obtained from an accredited certification agency operating within given rules. ISO 14001 certification is not mandatory, but is the result of a voluntary choice by the company/organisation which decides to establish/implement/maintain/improve its environmental management system. Using the ISO 14001 standard allows an organisation to identify and monitor the impact of its activities on the environment, and improve its environmental performance by implementing a systematic approach that involves definition and achievement of specific environmental goals.
OHSAS 18001: the international standard that sets the requirements for developing a system for the management and protection the health and safety of workers (OHSAS means Occupational Health and Safety Assessment Series). OHSAS certification verifies the voluntary application, within an organisation, of a system that guarantees sufficient control of occupational health and safety, as well as compliance with the mandatory regulations.

* For calculation of the accident rates included in the 2015 Environmental Report:
- only accidents with injuries lasting more than one day (excluding the day of the accident) were considered;
- travel accidents were excluded.

ISO 50001: a voluntary international standard that specifies the requirements for creating, implementing, maintaining and improving an energy management system. The aim of this system is to make it possible for an organisation to use a systematic approach to continuously improve its energy performance, including energy efficiency as well as energy consumption and use.

(EMAS) Eco-Management and Audit Scheme: a voluntary scheme created by the European Community which can be joined voluntarily by organisations (companies, public bodies, etc.) to assess and improve their environmental performance and provide the public and other interested parties with information on their environmental management. The main aim of EMAS is to help to create sustainable economic development, highlighting the role and responsibilities of enterprises. To obtain (and maintain) EMAS certification (registration), organisations must subject their environmental management system to a compliance assessment by an Accredited Auditor, and have the same auditor validate their Environmental Report (and its updates, which are usually annual).

ISO 9001: a voluntary international standard published in 1987 by the International Organization for Standardization, regarding the requirements of Quality Management Systems for organisations in any sector and of any size.

SNCR (selective non catalytic reduction): is a method to lessen nitrogen oxide emissions.

PET (Polyethylene terephthalate): common thermoplastic used in fibers for clothing, containers for liquids and foods.

HDPE: high density Polyethylene.

LDPE: low density Polyethylene.

l/t: Litres per ton

m^3: Cubic metre

NO: Nitrogen oxide

NO_2: Nitrogen dioxide

NO_x: Nitrogen oxides (NO and NO_2)

SO_2: Sulphur dioxide

Maddaloni Plant ITALY

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