

# 2015

Sustainability report SOL Group



**SOLGROUP**  
a breath of life

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## SOL Spa

### Registered office

Via Borgazzi, 27  
20900 Monza

### Share Capital

Euro 47,164,000.00 fully paid up.

C.F and company register of Monza e Brianza  
n° 04127270157  
R.E.A. n° 991655  
C.C.I.A.A. Monza e Brianza

### Compiled by

SOL Group Industrial Risk Management Office  
SOL Group Quality, Safety  
and Environment Head Office

### To know more contact:

sustainability@solgroup.com  
Comments and suggestions  
are particularly welcome

April 2016



## Sustainable development: our responsibility and our commitment

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*Our commitment to sustainable development stems from a profound conviction that is part of the DNA of our company: sustainable development is a moral obligation, a consequence of the responsibility we feel towards our children and future generations, but it is also the only way to attain healthy and lasting development both for our Group and for the Society in which it operates.*

*Our strategy for reaching this objective does not consist of important declarations or a few major objectives. Rather it is based on a constant commitment, day after day, which demands that we be always critical and innovative towards ourselves and towards our way of producing and working. The pillars of our commitment are: continual innovation, organisational changes and modifications in production processes, aimed at improving efficiency in the use of resources and reducing the environmental impact of our activities.*

*Today we are presenting the seventh SOL Group Sustainability Report. This year we have aimed to enrich it by following the directives of the GRI-G4 Standard.*

*In all sectors in which we operate attention to safety, which must always be the condition in which we all operate every day, has a primary role. For this reason, every quarter board meetings begin with an analysis of the report of the Central director for Quality, Safety and the Environment and the Safety manager, to share the progress made and any problems arising. The Technical Gases sector, in which the SOL Group operates, mostly uses physical processes to produce gases and has a very limited impact in terms of atmospheric and water emissions. The commitment to reducing energy consumption remains a priority for us, since electrical energy is a raw material in our production processes. Improving the energy efficiency of plants is thus a constant objective.*

*Here too there is the commitment that has seen the Group develop in the past decade projects for hydroelectric plants in certain Southeast European countries. Today, with its 10 power stations in Slovenia, Albania and Macedonia, the latter completed during 2015, the SOL Group can produce from renewable sources up to 20% of the energy it consumes in its gas production plants.*

*Also aiming to improve the environmental impact of our activities are our research and development initiatives in installing increasingly sophisticated "on-site" plants, which produce the gases, in an automatic and remotely controlled manner, directly on the premises of our industrial customers and not in our main establishments, which makes it possible to reduce considerably the transport of liquid cryogenic products, which, because of their nature, has to be done by road.*

*In the Home Care sector, which in 2015 accounted for more than 50% of total Group turnover, attention to sustainable development means for us studying, developing and finally proposing to public health systems, in the countries where we operate, projects and solutions that make it possible to follow patients needing treatment in their own homes, reducing the number of in-patients and thus minimising the social burden of treatment.*

*2015 was another complex year, since the countries in which the SOL Group operates suffered economic stagnation, as in Italy, or only slight growth. In addition, 2015 was for us the first year in which our main customer from the past, the Lucchini steelworks, now Aferpi, was practically at a standstill for the whole year.*

*So it is all the more striking that the SOL Group managed to grow by more than 5% in 2015, maintaining very good profitability. This was possible thanks to constant attention to the development of our collaborators, to strict cost control and finally to the considerable resources provided for development. In 2015, €120 million were invested in production and distribution, research and development and acquisitions.*

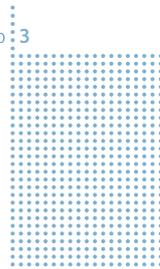
*In the Technical Gases sector in 2015 we purchased 100% of the Flosit company in Morocco, which opens up an extremely interesting window on Africa and the Arab world and will certainly enrich culture and opportunities for the entire Group.*

*In the Home Care sector, Vivisol entered Brazil with a majority joint venture in the Inspirar company, with two partners who are experts in the health sector. Brazil, a country with great potential despite the economic and political difficulties it is currently going through, will allow us to see how we do in a context that is new and unusual for us, stimulating our ability to understand and adapt, as has already happened successfully in India.*

*Again Vivisol purchased 100% of PMT (Pielmaier Medizin Technik), an efficient home respiratory care company operating in Bavaria, which was integrated into its German network.*

*In the Biotech sector, SOL purchased a majority stake in the Cryolab company, a partnership with the prestige Tor Vergata University in Rome, and saw an important success for its subsidiary Diatheva which sold to the United States company Agenus, quoted on the NASDAQ, the world rights to its patent for the development of an anti-cancer drug.*

*Today SOL operates in 27 countries: in Europe, in India, Turkey, Morocco and Brazil. It is a Group rich in talent, culture, experiences that we try to develop day after day as we believe our multicultural nature is a great strength and a great chance for development. In 2015 the Group increased the number of its collaborators in Italy and abroad by 189, an index of our solidity and healthy development strategy, bringing the total to more than 3,000.*



*“Values”, “strategy”, “innovation” and “heart” remain the pillars of our daily actions, striving to improve company performance but always with respect for the environment in which we operate and for all stakeholders we relate to.*

*We are not blind to the fact that we are still living in difficult years: perhaps Europe is showing some sign of improvement, but the slowdown of Chinese economy and the excessively low price of oil, which creates dangerous economic and political tension in every continent, do not make us overly optimistic. So we are careful to manage resources prudently and responsibly, but we are also confident that, as has always happened in the past, our Group has what it takes to continue developing, to supply high quality products and services and innovative solutions to its customers, and to bring satisfaction to its collaborators, customers and shareholders.*

  
**Aldo Fumagalli Romario**  
Chairman, SOL Group

  
**Marco Annoni**  
Vice-chairman, SOL Group



## The Governance of operations

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*The 2015 Sustainability Report has been drawn up to the GRI-G4 standard with the creation of a matrix of “materiality” which better defines our accounting perimeter and provides a guideline for all our internal functions that makes it easier to identify initiatives that will assist continual improvement.*

*The involvement of everybody, starting from the headquarters and local managements, is fundamental in guaranteeing the results the Report describes.*

*Teamwork, awareness of behaviour and “know-how” were the slogans that characterised earlier editions of the report.*

*This year we want to highlight the essential nature of the “Governance of operations” to underline that in every sector of activity, from the most standardised to the most innovative, commitment to the environment and safety does not just mean respecting laws, regulations and procedures but is the compass that must guide the development of the business and characterise every operation, from the simplest to the most complex, that we are called on to carry out.*

*Only in this way can the system of governance recognised, shared and implemented by our entire organisation provide the best guarantee of respect for the principles and ethical values mentioned in the Report and which have always inspired our Group.*



**Alessandro Castelli**  
Quality, Safety, Environment  
and Regulatory Affairs Manager,  
SOL Group



**Roberto Mariotti**  
Personnel and Legal Affairs  
Manager, SOL Group

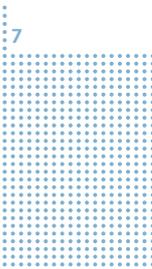


**Vincenzo Comparada**  
Industrial Risk and Insurance  
Manager, SOL Group

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# Note on methodology





**Reference guidelines**

In drawing up the Report we referred to the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines, with the aim of progressively approaching full conformity.

The standard used for the 2015 Report is the GRI-G4 with the option “In accordance-Core”.

**Materiality analysis**

The new G4 edition of the GRI Guidelines stresses the need for organisations to concentrate their accounting process on aspects significant for their activities and stakeholders.

They are thus requested to carry out a materiality analysis aimed at identifying aspects that reflect significant economic, environmental and social impacts and substantially influence the evaluations and decisions of stakeholders.

The GRI-G4 Guidelines require companies to account only for aspects identified as being material.

Our analysis process was developed as below:



**Benchmarking analysis**

Benchmarking analysis on relevant topics considered by analysing documents and public information on comparable companies (sustainability reports, materiality analyses stakeholder engagement activities etc.).

**Stakeholder analysis**

Analysis of SOL stakeholder mapping and updating where necessary of categories identified.

**Topic identification**

Identification of topics to evaluate in the materiality analysis process using the relevant methodology references and the results of the benchmarking analysis.

**Evaluation of relevant topic**

Evaluation of material topics through interviews with company top management to obtain both the perspective of external stakeholders and that of the Organisation.

**Materiality matrix**

Analysis of materiality, construction of the SOL materiality matrix and sharing and validation of results.

The analysis led to the identification of 32 topics subdivided into six macro categories – Governance, Human resources, Product responsibility, Economic responsibility, Social responsibility, Environmental responsibility – and to the construction of the Materiality matrix, which was validated by top management.





The results, in addition to defining the accounting perimeter, are guide for internal functions in identifying areas where initiatives should be focused to improve the impact of the SOL Group on the environment and on society.

The analysis is a dynamic process that will be repeated at least every two years, to update the evaluation of risks and opportunities relating to sustainability, also by listening to stakeholders and monitoring the evolution of the context.

### **Accounting perimeter**

The Report deals with the same Group Companies whose accounts were presented in the consolidated balance sheet. The data given generally refer to all Group Companies. In some cases, the data relate only to some Group Companies. These cases are highlighted in comments in the individual sections or in the correlation table, with reasons given for omissions (data not significant or not available, etc.).

In line with the rules adopted in drawing up the balance sheet, following the coming into force of the amendment to IFRS 11 (joint control agreement) which does not permit the consolidation of companies in which a stake of  $\leq 50\%$  is held, this Report does not consider the data of the two Indian companies.

All data refer to the period 1/1/2015 - 31/12/2015, except for certain information relating to events occurring in the first few months of 2016 that we feel are particularly significant.

### **Data collection**

Data were collected using a standard form sent to and used by all managers of the companies involved.

### **Equilibrium**

The parameters used reflect trends in performance, independently of whether it is better or worse than in the past, and are objectively and systematically presented.

### **Accuracy**

The data have been checked by the managers responsible.

Economic data and numbers relating to the Group refer to the Group consolidated balance sheet.

### **Earlier editions**

The SOL Group has since 2009 published Reports covering the environment, social responsibility, personnel and sustainability.

With reference to the previous edition of the Report, no revision of the information supplied was necessary.

The topics dealt with in this edition are in line with those of the previous one.



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The SOL Group

The SOL Group is made up of more than 70 operating Companies, with about 3000 employees, active in 27 countries in the sectors of technical, pure and high purity gases, medical gases and medical devices, home care, biotechnology and energy production from renewable sources

## 2.1. Group structure

Consolidated turnover in the financial year 2015 was € 674.2 million.

The parent company SOL Spa is quoted on the Milan Stock Exchange with a market capitalisation, at 31.12.2015, of € 749 million.

The Group's production is spread over more than 100 plants: in primary processing plants, gases are produced from raw materials such as electrical energy, atmospheric air, natural gas, calcium carbide and ammonium nitrate, while the secondary processing plants bottle, store and distribute gases in general (mostly coming from the primary processing plants) and produce high purity gases and precision mixtures.



**SOL**



**VIVISOL**



**BIOTECHSOL**



**HYDROSOL**

Technical and  
Medical Gases

Home Care  
Services

Biotechnologies

Renewable  
Energy

## 2.2. New initiatives and acquisitions

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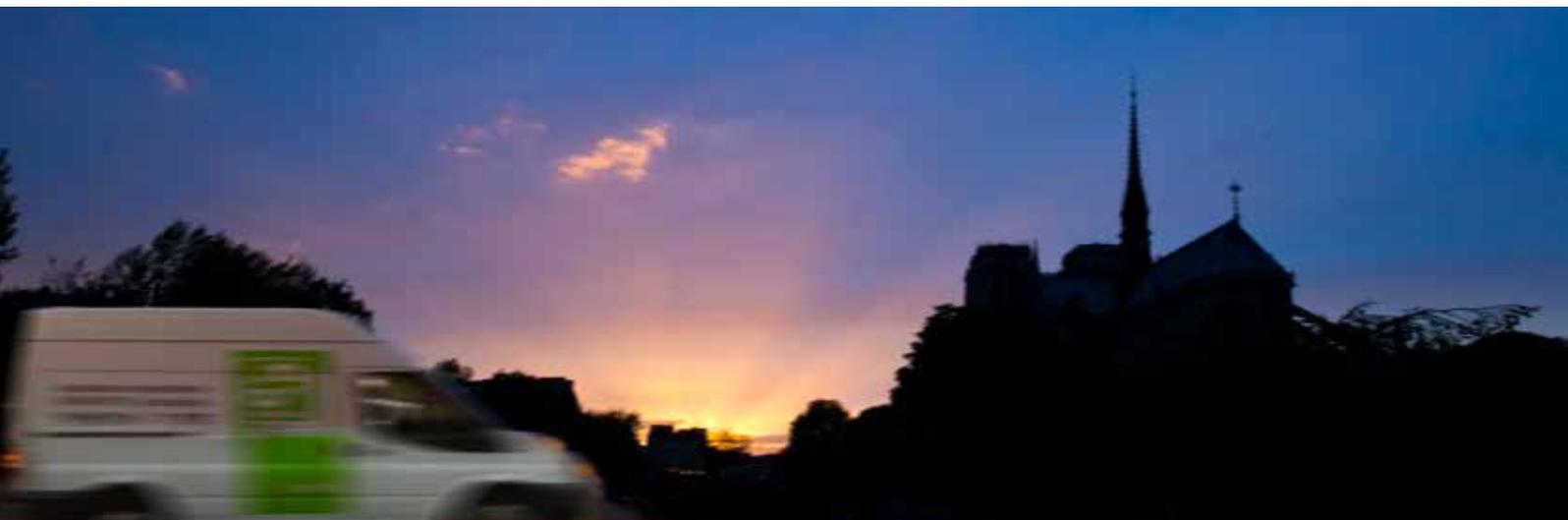
In February 2015 SOL Spa acquired the Flosit SA company, based in Nouasseur (Casablanca – Marocco) and active in the production and sales of technical gases. With this acquisition, the SOL Group expanded for the first time into the African continent.

In the Home Care sector, Vivisol entered Brazil thanks to a majority joint venture in the Inspirar company.

Vivisol also acquired 100% of PMT (Pielmaier Medizin Technik), the company active in Bavaria in the home respiratory care sector.

The most significant investments, particularly in terms of environmental impact, were:

- In Belgium, in the Feluy primary plant, interventions to improve efficiency, also involving the water reintegration system, were completed
- In Italy, in Mantova, in the primary technical gases production plant, investments were made to further increase the reliability and continuous working of the plants.
- In Macedonia, work was completed on a hydroelectric power station on the Lipkovo river and, in the Skopje plant, a new hydrogen production plant was installed.
- The modernisation and rationalisation programme in the secondary production plants in Europe continued. This particularly involved the units in Ancona, Cremona, Caserta and Bari in Italy, in Krefeld and Gersthofen in Germany, in Vitrolles in France, in Salonicco in Greece, in Wiener Neustadt in Austria e in Bucharest in Romania.





## 2.3. Sectors of activity

### 2.3.1. The technical gases sector



#### Data on the sector:

- 26 countries
- 1,528 employees
- more than 45,000 customers

#### Activities:

- Production and marketing of industrial, medical, pure and high purity technical gases.
- The design, construction and operation of on-site gas production plants, storage and distribution plants, apparatus and usage systems including, for example, apparatus for cryogenic applications, freezing tunnels, oxy-fuel burners, ozonisers, welding machines and apparatus.
- The supply of services related to the use of the gases produced.

#### Gases produced and distributed:

Oxygen, Nitrogen, Argon, Hydrogen, Carbon dioxide, Acetylene, Nitrous oxide, Gas mixtures, High purity gases, Medical gases, Food grade gases and gaseous Helium.

#### Main gases marketed:

Liquid helium, Gases for electronics, Ammonia and Combustible gases for industrial use.

### Our commitment to the environment and safety

For more than 30 years, the SOL Group has been developing applications for gases and the related technologies and services, which allow its customers to improve safety in the workplace and reduce the environmental impact of their activities.

The applications concern almost all the industrial sectors, as illustrated in detail on the following pages.

### On-site plant

Producing gas directly on customer premises using on-site plants significantly contributes to environment protection:

- a reduction in atmospheric pollution, compared with traditional supply in bottles or tanks delivered by road
- a reduction of energy consumption, since the production process specialising in a single gas with specific characteristics normally consumes less energy than a traditional centralised plant.

Applying the "Life Cycle Assessment" method, **the lower quantities of CO<sub>2</sub> emitted into the atmosphere** in 2015 using on-site plants instead of traditional ones **amounted to 20,452 tonnes, an increase of more than 20% on the previous year.**



## FOOD & BEVERAGE

### Industries served

- Agriculture
- Fish
- Red and white meat
- Fruit and vegetables
- Milk and derivatives
- Ready meals
- Bread and pastries
- Ice cream
- Beverages
- Wine and oil
- Catering

### Technologies and solutions for:

- Carbonic fertilisation with CO<sub>2</sub>: increase in production and in quality and look of the product
- Fumigation and pest control with CO<sub>2</sub> of biological agricultural products for which no chemical products, such as phosphine, can be used
- Fish and mussel farming with O<sub>2</sub>: increase in production and quality of the finished product.
- Cooling, flash freezing, cryogenic freezing, IQF with Lin o LCO<sub>2</sub>: improved quality of frozen product, taste characteristics maintained, better aesthetic aspect, reduced freezing times and space saving.
- Packaging in atmosphere modified with N<sub>2</sub> and CO<sub>2</sub>: shelf life optimisation, improved aesthetic aspect, freshness maintained
- Transport at temperature controlled with Lin or dry ice: safeguarding of freezing chain to preserve quality of food and avoid spread of bacteria
- Gassing, pressing with nitrogen, water dosage: plastic bottle weight reduction.



## METAL PRODUCTION

### Industries served

- Carbon and stainless steel
- Aluminium
- Ferrous products and cast-iron
- Nonferrous products: zinc, lead, copper, magnesium
- Semifinished products and forges
- Mineral extraction
- Precious metal processing
- Glass and ceramics
- Cement and lime

### Technologies and solutions for:

- Oxy combustion and hyper oxygenation with oxygen: reduction of exhaust gas volumes and methane used for combustion, helping safeguard the environment and at the same time increasing productivity
- Wall and fall burners, with conforming flame, low NO<sub>x</sub>: plant designed to optimise emission reduction and limited environmental impact, adaptable to the various types of furnace present.
- Inertisation and degassing with argon, nitrogen and SF<sub>6</sub>: maintenance and improvement of quality of metals produced, reduced waste. Substitutes such toxic chemical compounds as chlorine
- Controlled protective and reactive atmospheres with nitrogen, hydrogen, Solmix: production of high-quality metal products in line with design specifications.
- After burners with oxygen: complete treatment of emissions, limiting quantity and environmental impact



## METAL FABRICATION

### Industries served

- Thermal treatments
- Carbon and stainless steel processing
- Aluminium and nonferrous metal processing
- Automotive industry
- Aeronautical and railway construction
- Shipyards
- Construction sites
- Boilers
- Tools

### Technologies and solutions for:

- Controlled protective and reactive atmospheres with nitrogen and hydrogen
- Endothermic and exothermic atmospheres with solmix controlled carbon potential
- Keying with Lin: products made not using heat but cold, limiting fuel consumption.
- Lin soldering of electronic cards: reduced waste and manual elimination of defective cards, increasing production quality
- Cutting and laser welding with nitrogen and oxygen: increased productivity and product quality
- Oxy cutting and oxyacetylene welding, Mig/Mag, Tig and plasma welding and welders.
- Gas distribution automation and plant: reduced manual operations help reduce risk of accidents
- Pressure & fugitive tests with helium and nitrogen: guarantees tightness of components treated, reducing risks of leakage of products, also toxic products, from plant where they are used (e.g. offshore oil wellhead valves).



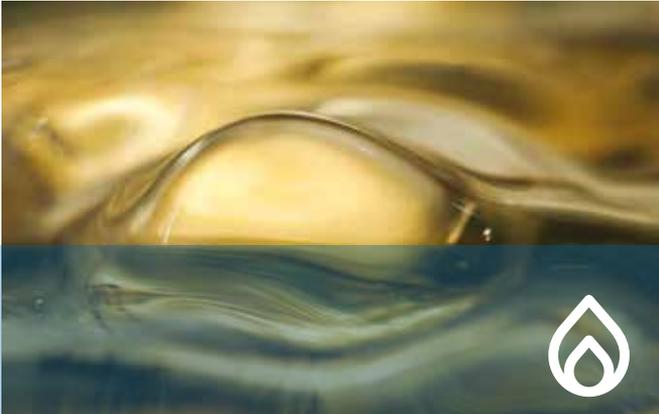
## CHEMISTRY & PHARMA

### Industries served

- Basic and inorganic chemistry
- Synthetic intermediates
- Polymers
- Fine chemistry
- Bulk pharmaceuticals
- Pharmaceutical specialities
- Cosmetics
- Herbalism
- Plastics and rubber

### Technologies and solutions for:

- Inert and protective atmospheres with nitrogen: reduction of risk of accident from contact of products with oxygen, at the same time preserving their quality.
- Fluxing, pressurisation and stripping with nitrogen: plant cleaning with reduced use of polluting chemical additives.
- Grinding and micronisation with Lin and gaseous nitrogen: increased quality of ground product.
- Packaging in inert and sterile atmosphere of pharmaceutical products: preserving and guaranteeing product quality.
- VOC treatment and solvent recovery with Lin: reduced environmental emissions and at the same time recovery of the chemical products they contain
- Cryogenic cleaning with CO<sub>2</sub>: replaces cleaning methods using water, solvents or sandblasting, thus limiting the environmental impact of residues.



## OIL & GAS

### Industries served

- Extraction
- Transport and pipelines
- Refining
- Raw materials and finished products stocking
- Off-shore
- Components and equipment

### Technologies and solutions for:

- EOR processes with nitrogen and CO<sub>2</sub>: increased extraction productivity avoiding the need for new wells
- Fluxing, pressurisation and stripping: plant cleaning with reduced use of polluting chemical additives.
- Controlled cooling with Lin: reduced plant maintenance times, faster cooling and less risk for operators.
- Inertisation and drying with nitrogen: plant maintained in controlled stand-by, limiting accident risks and permitting fast restart
- Cryogenic cooling with Lin: permits work on filled pipes without need for emptying.
- Claus processes with oxygen: improved and optimised recovery of sulphur from refinery flows and lower emissions.
- Control and regulation of technical and special gases, management and maintenance of emission control units: emission control units are kept efficient, reducing the risks of accidental emissions.



## ENERGY & ENVIRONMENT

### Industries served

- Multiutility
- Wastewater purification
- Purification
- Waste Management
- Special waste management
- Incineration
- Chemical, pharmaceutical, fabric and leather, food, paper, petrochemical and extraction industries.

### Technologies and solutions for:

- Treatment of wastewater with O<sub>2</sub>: better purifying and purifying capacity with less environmental impact and better control of treatment
- Treatment of wastewater with ozone: reduced colour, micro contamination, nitrates: treatment optimisation with less environmental impact
- AOP processes with ozone: on-site environmental clean-up, less removal of terrain and combustion treatments with higher environmental impact
- Wastewater deodorisation with oxygen: reduced environmental impact
- Disinfection with oxygen: watercourses receiving wastewater after treatment are protected from bacterial pollution without the use of chlorine compounds
- Surplus sludge reduction with oxygen: less surplus sludge to send to dump, reduced environmental impact
- pH control with CO<sub>2</sub>: replaces mineral acids (sulphuric and hydrochloric) that pollute the water
- Re-carbonisation and re-mineralisation of drinking water with CO<sub>2</sub>: drinking water can be made to meet legal requirements using a certified food additive
- Oxy-combustion of waste with oxygen: reduction of gaseous emissions and increased control of incinerator plant with widely varying refuse loads (tourist areas)
- After burners with oxygen: full treatment of emissions, limiting their quantity and environmental impact
- VOC treatments and solvent recovery: low environmental emissions and at the same time recovery of the chemical products they contain

### 2.3.2. The medical gases sector



#### Data on the sector:

- 26 countries in which Technical Gases Sector companies operate
- more than 500 large customers
- 39 pharmaceutical plants, 19 in Italy and 20 elsewhere in Europe

#### Activities:

- The production, distribution and sale of medical gases with Marketing Authorisation, other mono gases and gas mixtures classified as Active Pharmaceutical Ingredients (API), gases and therapeutical mixtures.
- The production, distribution and sale of gases and mixtures certified as Medical Devices.
- The design, manufacturing, management and operation of such Medical Devices as centralised gas distribution plant and plants for the endocavitary aspiration and the evacuation of anaesthetic gases; complementary materials, accessories and consumable materials for the administration of medical drugs and the use of fluids.
- The design, manufacturing, management and operation of on-site plant for medical air Ph.Eu, endocavitary aspiration and self-producers of very high purity gases for laboratories.
- The design, production and management of processes for handling supplies, services, materials, and the sanitising of air, water, plants, environments, surfaces and devices, and for environmental monitoring; management services and accounting of consumption, costs and inventories.
- Gas quality control services with an EN17025 (Accredia n°1415) accredited laboratory and mobile analysis units with highly qualified operators.
- The design and management of integrated hospital services: Total Gas Management, Cryo-management, Cell-management, management of the entire process of distribution of pharmaceuticals and patient records in health structures.
- The management and maintenance of electro-medical apparatus resources (Clinical Engineering services), medical devices for diagnosis, spirometry and other specific applications.
- The design and operation of ECM accredited training services for staff, also on workplace safety topics, both residential and distance training with highly qualified instructors.

#### Gases produced and distributed:

Gases with Marketing Authorisation: Oxygen, Nitrous oxide, Synthetic and compressed air, Neophyr and Donopa mixtures.

Other gases Ph.Eu: Nitrogen, Carbon dioxide

Mixtures for therapeutic use on prescription

Gases and certified mixtures

Gases and certified mixtures for diagnostic and instrumental use

Special gases and mixtures to very high levels of purity



## Our commitment to the environment and safety

The safety of patients, operators and all those present for various reasons in the places where medical gases and services are supplied, managed and administered is a primary objective for us.

The experience we have built up and a continual exchange of information allows us to bring innovation to the products and services, also with the aim of making them intrinsically safer: examples are the integrated reduction valves for compressed gas packages, safety and protection devices for handling cryogenic gases and safety and monitoring devices for rapid analysis of dangerous atmosphere.

Reduction of the environmental impact of these activities is achieved by the optimisation of transport and computerisation of financial documents and reports. Reports are produced using verification and anti-counterfeiting systems, digital signatures and validated software so as to ensure the security of private information.

## Management services

The **Total Gas Management Service** offers health structures the possibility of reducing to a minimum the risks connected with handling of medical gas packages and containers and their supplying. TGM is planned case by case,

so as to satisfy the requirements of different organisational models. The safety objectives of the TGM service are retained also by using InfoHealth software, for tracing drugs within the hospital and planning and accounting for the maintenance of plant and Medical and electro medical Devices.

In the biological samples management services sector, **“Disaster Recovery”** is an integrated organisational, logistic and plant service that guarantees customers the safety of the biological material stored in the structure in catastrophes or emergencies. The service can also put in motion special transport to remove the samples from the affected location quickly, ensuring safety and quality.

Through its subsidiary **TESI Tecnologia & Sicurezza**, SOL can today become a partner in the ordinary management, operation and emergency management for electromedical apparatus, from the simplest device to diagnostic machinery and life-saving therapy devices.

## Training services

Training in the safe use of medical fluids, their containers and accessories is fundamental for correct product administration and handling.

Training is provided through ECM courses, which can be accredited at customer request. They can be held both residentially and at a distance, to satisfy the needs of structures and individual students.

All participants are encouraged to contribute their experiences and express their opinion on the effectiveness of the events. These data are then analysed and used to identify areas for improvement, following the evolution of technologies and procedures in the health sector.

## Plant and accessories for gas usage

Plants for medical gas distribution are designed to meet the essential requirements of community legislation on Medical Devices and the related technical regulations, with the main aim of safety: the gas required must be supplied with the right quality and the right quantity to each patient for whom it has been prescribed. All accessories needed for the use of gases are designed, manufactured and maintained to guarantee safe administration to the patient.

## On-site plant

On-site plants, which have been used now for more than 20 years, are continually revised and redesigned to improve constantly their performance, with particular attention to their strong points: reduction of acoustic and atmospheric pollution, of energy consumption and of the production of waste and refuse.

### 2.3.3. The home care sector



#### Data on the sector:

- 21 companies
- 12 countries
- 1,542 employees
- more than 300,000 customers
- 20 pharmaceutical plant, six in Italy and 14 elsewhere in Europe

#### Activities:

The supply of services, apparatus and products for home oxygen therapy with liquid or gaseous oxygen and concentrators

The supply of services and apparatus for home mechanical ventilation

Home treatment of the obstructive sleep apnoea syndrome (OSAS)

The supply of products and apparatus for home artificial feeding

The supply of integrated home care services

The supply of apparatus and services for home care of bedsores

#### Our commitment to the environment and safety

Vivisol operates with awareness of the need to maintain and further develop a quality management policy aimed at continuously improving home care services and with an overall management vision of its activities.

Home solutions and services have been perfected with strong points including the safety of the user and the defence and protection of the environment. Principal among these are:

- a logistics system that optimises the routes of delivery vehicles, reducing atmospheric pollution thanks to lower mileage
- progressive substitution of delivery vehicles with the introduction of at least Euro 4 certified vehicles
- a system that optimises home visits by nursing and medical personnel and the routes of the vehicles they use
- an emergency telephone helpline for patients who have technical problems with the apparatus
- a technical assistance service with ready availability
- software for planning the transfer of materials between warehouses and centres, leading to a reduction in the number of supply trips needed



### Home oxygen therapy service

Vivisol operates throughout Italy and in the main European countries, providing care for patients with respiratory insufficiency. Thanks to VIVITRAVEL, patients can continue to use the service even when they are travelling in Italy and in the main European countries.

### Ventilotherapy

Vivisol offers mechanical ventilation apparatus that can be interfaced with various remote monitoring systems thanks to agreements with leading world producers. The Vivisol service includes installation, ordinary and extraordinary maintenance, instruction and training for the patient and caregiver.

### Treatment of sleep apnoea

Analysis of the quality of sleep is a new science that makes it possible to intervene with suitable therapies on certain pathologies that are often hidden or latent. The VIVIDREAM service offers an accurate analysis of sleep, using sophisticated apparatus that can remotely monitor clinical data obtained directly in the patient's home.

### Aerosol therapy

Aerosol therapy is a natural, ancient and effective method, with no counter indications and recognised benefits. The service offered includes installation of the apparatus in the patient's home, training for the patient and his family and a technical assistance service.

### Alternative communication

Vivisol is able to offer a service dedicated to those affected by pathologies that limit or prevent communication, for example neuromuscular pathologies. The reacquisition of the possibility of communicating autonomously offered by the service leads to an improvement in the patient's quality of life.

### Artificial feeding service

When enteral or parenteral feeding is used for long periods, doctors may decide to have the patient continue the therapy at home. Vivisol provides all the feeding products, the apparatus and accessories needed to administer the treatment, guarantees training for patients and caregivers and offers ongoing technical and health assistance.

### Telemedicine

Telemedicine is an important result achieved by Vivisol in patient care and assistance. It can overcome time and distance, making it possible for doctors to monitor patients at home with an effectiveness and immediacy comparable to hospital care.

### Home healthcare

The high-intensity home care service offered by Vivisol is specially formulated to satisfy the user's social and health care needs, offering in the home services typical of the hospital that demand the integration of technological and health resources.

### Therapy aid and antidecubitus treatment management

Vivisol has also specialised in the management of certain therapy aids, including, among others, those for preventing and treating decubitus lesions.

### Training services

Vivisol organises training meetings, for example those held in Holland for 250 professional doctors on oxygen (Breathless symposium) and sleep apnoea (Sleepless symposium). It also participates with trainers at seminars organised by hospitals for their nursing staff.

## Home Healthcare excellence, from a prompt and safe hospital discharge to self-management of chronic patients.

Home Healthcare excellence, from a prompt and safe hospital discharge to self-management of chronic patients.

Transition from hospital to home is one of the most critical aspects of patients care.

For Vivisol and hospital teams to provide excellent therapies to chronic Patients, the pressing question was how to make their specific needs meet the challenging efficiency targets of modern healthcare provision.

In England Vivisol and the NHS joined forces and introduced a novel approach proving that an 80%\* reduction in post-discharge prescription changes can be achieved.

In fact multiple errors were often found on hospital discharges and equipment requirements were often subsequently changed, generating wasteful activity and costs. Based on a partnership approach, the service was redesigned providing new equipment and training to specialist respiratory teams within hospitals to promote efficient and safe discharge for those patients requiring home oxygen.

Vivisol trained the clinicians on use and supplied written documentation on safety. The clinicians identified appropriate patients based on clinical assessments and issued them with the appropriate modality with the support of a web-based modality selection tool designed by Vivisol.

Transition from hospital to home was achieved with a high degree of clinical accuracy in home oxygen ordering. Staff reported that they felt particularly for patients who were end of life that it promoted patient centred care by allowing prompt discharge.

In 2015 Vivisol decided to push the boundaries even further and another important step was taken on this journey of development.

In France the Pascaline programme selected Vivisol to bring innovation to the treatment of sleep disorders. With the aim of integrating all stakeholders through a common online platform, we provide Patients with their own therapy data for the first time, allowing them to improve self-management and bringing them closer to their clinicians.

Vivisol's service incorporates countless hours and more than 30 years experience, years of research and innovation.

The benefits arising from this work, including social, economic and environmental sustainability are the result of Vivisol's continuous pursuit of excellence and are provided to every one of our Patients.



\* published in Thorax: Hamilton F, Luxford, G and Bott, J (2015) - Using a transportable oxygen concentrator (TPOC) to facilitate prompt and safe discharge. Thorax 70 (3) A226-227.

## 2.3.4. The biotechnologies sector



### Data on the sector:

- three companies in Italy: BiotechSol, Diatheva and Cryolab
- 20 employees
- more than 300 customers
- 1 pharmaceutical plant and two being built/awaiting authorisation

### Activities:

Clean Room laboratories and cell and tissue processing and conservation centres; design, construction and management of cryo-biological rooms: design, construction and operational and documentary management of the rooms and the samples stored there; event and emergency management (Disaster recovery)

Biological sample conservation services for third parties

Pre- and post natal diagnostic services

Biological sample transport services for third parties (bioshipping)

Production and sale of diagnostic systems and services

GMP production of monoclonal antibodies and recombinant proteins

Scientific, pre-clinical and clinical research on new biological pharmaceuticals

Research and development of new protocols for cell manipulation

### Design and Creation of Biobanks

The service of designing and creating ISO 9001 certified cryo- biological rooms is aimed at public and private structures that carry out scientific research and manipulation for cell, tissue and organ transplants and need to preserve their biological samples for long periods of time in liquid nitrogen.

### Disaster Recovery

The complementary Disaster Recovery service guarantees public and private structures the transfer, in emergency situations, of biological samples to cryo-biological rooms owned by the SOL Group. In particular Cryolab is authorised by the Ministry of Health and National Transplants Centre for long-term and disaster recovery conservation of human gametes.



### Bioshipping

The Cryolab Bioshipping service provides transport of biological samples between health structures in conditions of total security and traceability, with continuous control of parameters.

This service is growing continually and is of particular importance for numerous uses and applications, in particular for delicate and often unrepeatable samples such as gametes. The SOL Group, through Cryolab, can satisfy the requirements for reliability and very high specialisation required by the regulations governing structures for Medically Assisted Procreation and follow its continual evolution. Through its subsidiary Cryolab the SOL Group is now active in the research and development of protocols for cell manipulation, in particular of stem cells, the new frontier of regenerative medicine.

### Advanced Diagnostics

The pre- and post natal diagnostic screening services are important for ensuring correct development of the newborn baby since they permit early diagnosis of numerous and insidious diseases which can be cured if diagnosed in time.

### Biotechnologies

Through its subsidiary Diatheva the SOL Group entered the sector of the development, production and sale of diagnostic systems for clinical, diagnostic and analytical application. Diatheva diagnostic systems are innovative because they permit identification and quantification using DNA amplification techniques of food pathogens in any matrix and for any requirements.

Compared with traditional techniques such as cultures they can reduce the time required to

obtain results to just a few hours and are aimed principally at the food and environmental control sectors where fast analytical results are critical for taking decisions that will affect the safety of people and the environment.

### 2.3.5. The energy production from renewable sources sector



CO<sub>2</sub> emissions to atmosphere  
reduced by  
**22,000 t**



#### Data on the sector:

- 3 companies:
  - Energetika doo, with 6 hydroelectric power stations operating;
  - Hydroenergy Sh.p.k, with 2 reservoir fed hydroelectric power stations in operation;
  - SOL Hydropower d.o.o.e.i., with 4 hydroelectric power stations, three operational and one in start-up
- 18 employees

#### Activities:

Production of electrical energy in hydroelectric power stations

The exploration and identification, design, construction and management of hydroelectric power stations connected to the national high tension electricity distribution network.

### Our commitment to the environment and safety

The production of technical gases is strongly dependent on electrical energy, mostly produced from such fossil fuels as gas, carbon and petrol which have a considerable negative impact on the environment.

Among the objectives the SOL Group has long had is to meet part of its energy needs by itself producing electrical energy from renewable

sources, so as to benefit the environment by reducing its dependence on fossil fuels. Various projects have been launched, some still under development, which have led over the years to the construction of a number of hydroelectric power stations that are already able to meet part of the Group's energy needs.

**The reduction in CO<sub>2</sub> atmospheric emissions in 2015 thanks to the electrical energy generated in the Group's power stations is estimated at more than 22,000 t per year.**



3

## The Governance system



The SOL Group sustainable development model aims to create balanced economic growth and constant development in the long term, employing resources efficiently and orienting them constantly towards change while minimising the impact of its activities on the environment and safeguarding the health and safety of its employees.

We are well aware that the expectations of shareholders must be balanced with those of all parties who interface with the company, since they have legitimate interests.

Our mission is to supply customers, with constancy and continuity, innovative and technologically advanced solutions and to offer patients the finest home care.

## 3.1. Mission, values and ethical principles

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Correct and loyal behaviour, the distribution of information, a willingness to listen, the ability to realise that the problems of those we have contact with are our problems, an awareness that the economic process must continually be coordinated by a system of values.

This is the SOL Group project, which is the foundation of the principles in our Code of Ethics.

The Code is adopted by all Group companies and passed to all employees, who are asked, also in periodical training sessions, to commit themselves constantly to operate in line with these principles.

### 3.1.1. The Code of Ethics

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The Group's Code of Ethics came into force on January 1, 2006 and its validity was confirmed by the Board of Administration of SOL Spa in a meeting on February 19, 2009.

The document, among other things:

- highlights the principles of behaviour to be followed by all employees and collaborators;
- highlights the principles of behaviour the SOL Group follows in managing business activities, both internally and externally;
- identifies the stakeholders of the Group and describes the approach to each of them
- expresses the principles that inspired the "personnel policies" and the activities for the "safeguard of safety, health and the environment";
- expresses the commitment to a prudent and responsible use of resources and information;
- lays down the sanctions for failure to respect the Code.

Among the ethical values, particular importance is given to loyalty, correctness and transparency in relationships with third parties and in particular with public administrations.

### 3.1.2. The model of organisation, management and control under D.Lgs 231/01

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SOL Spa and Vivisol Srl have each adopted their own Model for organisation, management and control as laid down by Legislative Decree 8/06/2001 n. 231.

The first versions of the two Models date back to 2006 and have been subsequently updated to take account of the experience built up in management, the introduction of new offences and the related jurisprudence.

During 2013 the SOL Spa Model was updated following the introduction, among the offences laid down by D.Lgs. 231, other criminal offences laid down by certain European Community Directives on environmental crimes (n. 2008/99/CE and n. 2009/123/CE) and the extension to companies, with article 25-undecies of D.Lgs 231, of the administrative responsibility for certain environmental crimes.

The updating of the Model was approved by the Board of Directors on March 29, 2013 (that of Vivisol Srl had been approved in 2012 by the Board of Directors on December 13). Both the Code of Ethics and the Model distributed to all employees and collaborators of the companies concerned, and also published on [www.solgroup.com](http://www.solgroup.com).

Every employee is encouraged to report to his superior possible violations of the Code of Ethics. In particular for SOL Spa and Vivisol Srl a specific email address has been created for reports to the Supervisory Body.

## 3.2. Governance and sustainability

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The model of governance adopted to ensure sustainability objectives are met consists of the corporate governance system, the internal control system and the integrated quality, safety and environment management system.

The latter, in particular, makes it possible to manage in all company environments development plans, aiming for continual improvement, and ensures that company activities with risk potential are tackled with a precautionary approach, even as concerns situations that are very unlikely to occur, without restricting preventative action to known risks.

### 3.2.1. The Corporate governance system

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The parent company SOL Spa has adopted a model of corporate governance that it feels is substantially adequate for its structure, size and market capitalisation and that can continue to guarantee, at this time, the transparency required by market practice and a balanced and effective system of controls.

The organs making up the governance structure of SOL Spa are:

- the Shareholders' assembly;
- the Board of Directors;
- the Board of Auditors;
- the Audit firm.

For further information, see the section "Investor relations" on [www.solgroup.com](http://www.solgroup.com).

### 3.2.2. The internal control system

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The Board of Directors of the parent company SOL Spa has created the internal control function, with the job of ensuring that internal operational and administrative procedures, laid down to ensure clean and efficient management and to identify, prevent and handle risks of a financial and operational nature and attempts to defraud the company, are effectively respected.

Those responsible for the internal control function do not answer in hierarchical terms to any operational area managers but directly to the Board of Directors. Both SOL Spa and Vivisol Srl have also instituted a “Supervisory Body”, with suitable means and the necessary autonomy, which verifies that the organisation, management and control model under D.Lgs. 231/2001 is respected.

The internal control system is integrated by the Code of Ethics and the regulations and procedures in the integrated system of quality, safety and environmental management.

### 3.2.3. The Management Systems

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The SOL Group has opted to impose in an integrated way its Quality, Safety and Environmental management System (SHEQ/MS), to guarantee coverage of all its activities, eliminating pointless duplication and emphasising synergies.

Application of the Management System is aimed at:

- improving the quality, efficiency and effectiveness of the various company processes, thus continuously reducing impacts on the health of employees, safety conditions in the workplace and the external environment;
- managing the risks involved in the various company processes, adopting the procedures needed to identify and prevent in a timely way situations which could have serious and undesired repercussions on Group activities.

#### **The organisational structure**

The governance of the Management systems is entrusted to the “Quality, Safety and Environment Management System Steering Committee” (CGSQ) made up of the executive directors, general managers and central directors. This has the task of re-examining the Management system to ensure its efficacy and adequacy over time.

The CGQS:

- examines the progress of the SHEQ/MS;
- evaluates and define strategic interventions;
- verifies and, when necessary, updates the quality, safety and environmental management policies;
- deliberates objectives and activity programmes for quality, safety and environmental management that appear necessary after Committee discussions.

In operational terms, the Management systems are under the responsibility of central quality, safety and environment Management (DIQS), which reports annually to the CGSQ. Progress and any updates are presented by DIQS to top management at quarterly report meetings and the investment summit.

Matters relating to organisation, labour and industrial relations are handled by Central Personnel and Legal Affairs Management, which presents the following data on human resources management annually to the managing directors and general managers:

- the main indicators relating to human resources and their cost
- data on turnover, absenteeism, over time, hours worked, holidays
- the types of contract used
- the state of industrial relations with union representatives and any disagreements
- the principal training initiatives and investments for improving human resources management

### Policies

The basis of the Management system is the Policies.

The Policies are documents underwritten by the President and General Managers of the Group that outline the principles behind the operations of Group companies and define the objectives that top management intends to pursue in the various sectors.

**SOL Group companies quality management Policy:** this document from the integrated quality, safety and environment management system was published for the first time in 1993 and revised and updated in March 2013.

The document is made available to the all Group employees through publication on the company intranet.

The Policy expresses the concept that SOL Group companies carry out their activities aware of the need to maintain and further develop a quality management system oriented towards continuous improvement, in an overall vision of their activities, in the conviction that quality is a value that everybody creates together, day by day, through dialogue, participation, agreement and involvement.

**SOL Group companies safety and environment Policy:** this document from the integrated quality, safety and environment management system was published for the first time in 1993 and revised and updated in June 2013.

The commitments and fundamental principles expressed in the Policy are:

- respect for health, safety and environmental rules, laws and regulations;
- the carrying out of activities with the aim of preventing all accidents and injuries;
- a review of performance aiming for continual improvement;
- the identification, elimination or control of potential risk situations connected with activities;
- continual improvement in personnel training at all levels, technical updating of plant and the sharing of best practices with partners and in category associations.

Because, as the “Policy” states:

- safety and respect for the environment mean consciousness and awareness
- safety and respect for the environment mean teamwork
- safety and respect for the environment mean a sense of responsibility
- safety and respect for the environment mean professionalism

The safety and environment policy document is published on the Group website and is distributed internally, at all levels, and to suppliers.

It is periodically revised to ensure that any needs to update objectives are recognised and integrated in the document.

Units to which the “Seveso Directive” applies or which are certified BS OHSAS 18001 or under the ISO 14001 standard also issue their own documents of environmental and safety policy which include the principles of Group policy and integrate them with the specific objectives of the site.

### Responsible Care



SOL Spa was, in 1995, one of the first companies in Italy to subscribe to Responsible Care, the voluntary programme of the world chemical industry supported, in Italy, by Federchimica, in which it plays an active part, with its own representative on the managing Committee.

As part of this programme, several environmental and workplace safety performance indicators are collected each year, and are also used in this report.

On January 7, 2015 SOL adhered to the “Responsible Care Global Charter”, committing itself to promoting the principles and contents of the initiative in all countries where the Group is present.

On April 23, 2015 the subsidiary Flosit adhered to the program promoted in Morocco by the “Federation de la Chimie et de la Parachimie”, a further indication of Group Companies’ sensitivity to the sustainability issue.

### The Charter of principles for environmental sustainability

SOL has adopted the “Charter of principles for environmental sustainability” produced by Confindustria and proposed at the beginning of 2012 to member companies.

SOL played a leading part in the drafting of the Charter of principles and of the relative Operational guidelines, with company directors participating in the working group set up by Confindustria.

### Certifications

**ISO 9001:** starting from the certification of the first Units in 1994, the Group has subsequently extended the perimeter and also in 2015 new Units were added. The certifications cover 96 (95 in 2014) Units in the various European countries, more than 75% of the total.

**BS OHSAS 18001:** with the coming into force in Italy of Legislative Decree 81/2008, which lays down, as a necessary condition for exemption from application of the sanctions laid down by Decree 231/01, the adoption of a Management system in line with Regulation

OHSAS 18001, certification becomes even more important as a guarantee for top management.

SOL Spa and Vivisol Srl obtained certification of the Safety management system for all their Units, as laid down by the Standard OHSAS 18001.

Later, other Units in Slovenia, Spain, Rumania and the United Kingdom were added to those certified in Italy.

A further extension of the adoption of the OHSAS 18001 Management System is among our objectives for the coming three years.



**ISO 14001 and EMAS:** considering the importance attached to respecting environmental issues, though the Group's production activities have a quite limited direct impact on the environment, the correct adoption of the Group Management System was verified with certification of some particularly significant Units.

The number of units certified is growing continually, from 16 in 2014 to the current 19. Two Italian Units also adhere to the EMAS regulation.

**Responsible care:** the implementation of the "Responsible care" Programme in SOL Spa was submitted, in 2014, to an "Audit of the verification scheme by Federchimica". This audit confirmed conformity with the principles and requirements of the Programme.



**ISO 50001:** the Frankfurt plant of SOL Spa Branch Deutschland and, since 2015, Slovenian SPG and TPJ plants and SOL Kohlensäure Gleys plant, are certified ISO 50001, the international standard whose adoption helps organisations to improve their energy performance, increasing efficiency and reducing climatic and environmental impact. Among the strategic objectives the 2015 was certification under the ISO 50001 standard of all Italian primary process plants: following the coming into force of the obligation to carry out Energy Diagnoses under EU Directive 2012/27, it was decided to give priority to these and postpone certification to a later time.



**ISO 27001:** the ISO 27001 standard defines the requirements for creating and running an Information security management system (logical, physical and organisational security), with the aim of protecting data and information from threats of all kinds, ensuring its integrity, confidentiality and availability.

Certification under this standard was renewed in 2015 for the headquarters of SOL Spa, Vivisol Srl and Biotechsol Srl, in the two distinct areas of management and monitoring of centrally distributed IT services and the development of applications to support business processes.

The table below shows the situation at December 31, 2015 of certifications obtained by the SOL Group, subdivided by country and company.

## Certifications at December 31, 2015.

Company	Country	ISO 9001	OHSAS 18001	ISO 14001	EMAS	ISO 50001	ISO 13485	ISO 27001	FSSC 22000
<b>Technical gases sector</b>									
SOL Spa	Italy	17	24	3	-	-	1	1	1
SPG Srl	Italy	5	7	3	2	-			1
ICOA Srl	Italy	1	-	1	-	-	-		-
SOL Welding	Italy	1							
SOL Spa Belgium	Belgium	1	-	1	-	-	-		-1
SOL Spa Deutschland	Germany	1				1			1
BTG BVBA	Belgium	1							
SOL Nederland	Netherlands	2							2
TGS AD	Republic of Macedonia	3	-	-		-			3
SOL SEE doo	Republic of Macedonia	2							2
SOL TG GmbH	Austria	1	-	-			1		
UTP doo	Croatia	2							
Kisikana	Croatia	3							
SOL France SA	France	1					1		
SPG doo	Slovenia	1	1	1		1			1
TPJ	Slovenia	1	1	1		1			1
SOL Hellas	Greece	3					1		3
SOL Srbija	Serbia	1							
GTS	Albania	1							
TGP	Bosnia-Herzegovina	1		1					1
TGT	Bosnia-Herzegovina	1							
SOL Deutschland	Germany	2							2
SOL Kohlensäure	Germany	1				1			1
GTH	Romania	1	1						
SOL Bulgaria	Bulgaria	2							2
SicgilSOL	India	1							
<b>Home care sector</b>									
Vivisol Srl	Italy	20	20	1			2	1	
Vivisol Napoli Srl	Italy	1							
Vivisol Silarus Srl	Italy	1							
Vivisol Calabria Srl	Italy	1							
Vivisol Deutschland GmbH	Germany	5					4		
Pielmeier Medizin Technik	Germany	1							
Vivisol Nederland	Netherlands	1							
Vivisol Austria	Austria	2							
Vivisol Hellas	Greece	2							
Dolby Vivisol	United Kingdom	1	3	4				1	
Vivisol Iberica	Spain	3	3	3					
<b>Biotechnologies sector</b>									
Biotechsol Srl	Italy	1					1		

### 3.3. The SOL Group stakeholders

The SOL Group is aware that no company organisation should conduct its activity without taking into due account the indications and expectations of all its stakeholders. It is the stakeholders who guide our behaviour and drive us to continual improvement: for this reason we keep channels of communication constantly open with all those who can influence our decisions and actions and whose actions and decisions can be influenced by us.

We believe that doing business in a sustainable way must lead to the creation of value for all those involved and in the three dimensions: economic, environmental and social. The materiality analysis this year confirmed the list of stakeholders with which two-way channels of communication are open.

In the absence of a GRI standard for the technical gases sector, we have sought to select information we feel is useful for our stakeholders, on the basis of the nature of our activity and the risks and opportunities associated with it. This information is in addition to specific information for each category of Stakeholders shown in the specific sections.

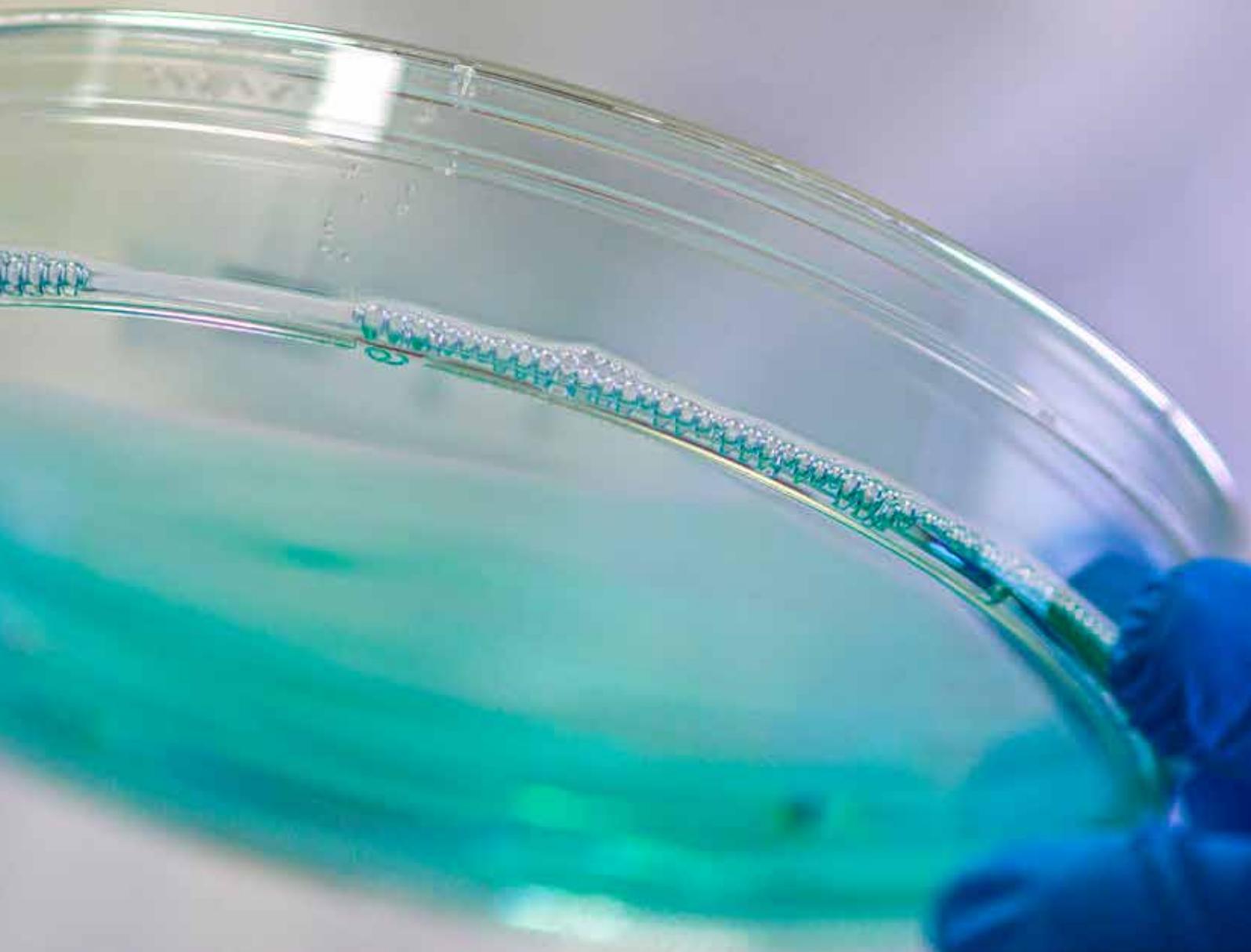
#### Stakeholder and report sections





4

## Economic dimension



## 4.1. Financial data

Net sales in 2015 grew to

**674.2** million euro

**↑ + 5.9%**  
on 2014

Net sales in 2015 grew to 674.2 million Euro (+5.9% compared with 2014).

In more detail, the turnover of the technical, special and medical gases sector (363.6 million Euro), despite the general decrease in production in almost all European countries, grew nevertheless (+3.4%) over 2014.

In general there was a slight increase in sales volumes to certain economic sectors. The exception was Italy where, while most sectors remain substantially stable, the metalworking and mechanical sectors suffered a decrease.

The home care sector saw good growth, with a turnover of 339.8 million Euro (+8.6%), both in Italy and overseas countries, thanks to a continuous commitment to develop new products and services alongside and integrating oxygen therapy activities.

The cash flow was 112.9 million Euro (16.7% of sales).

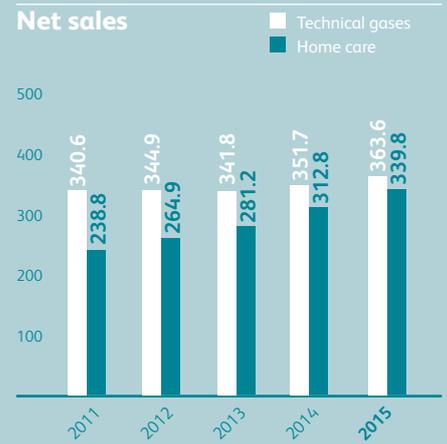
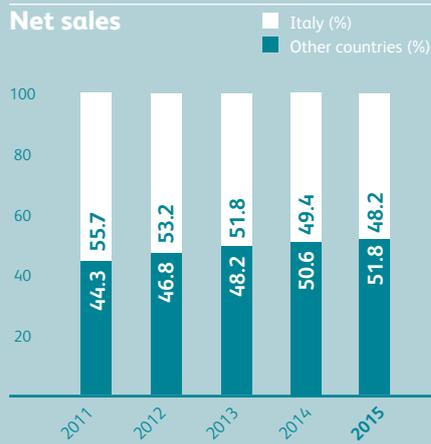
Recorded investments were 89.8 million Euro (98 million Euro in 2014).

For more information on Group trends, see the balance sheet published on our website [www.solgroup.com](http://www.solgroup.com).

NOTE: Financial data refer to the draft balance sheet approved by the Board of Directors on March 30, 2016

**Revenue**  
million Euro

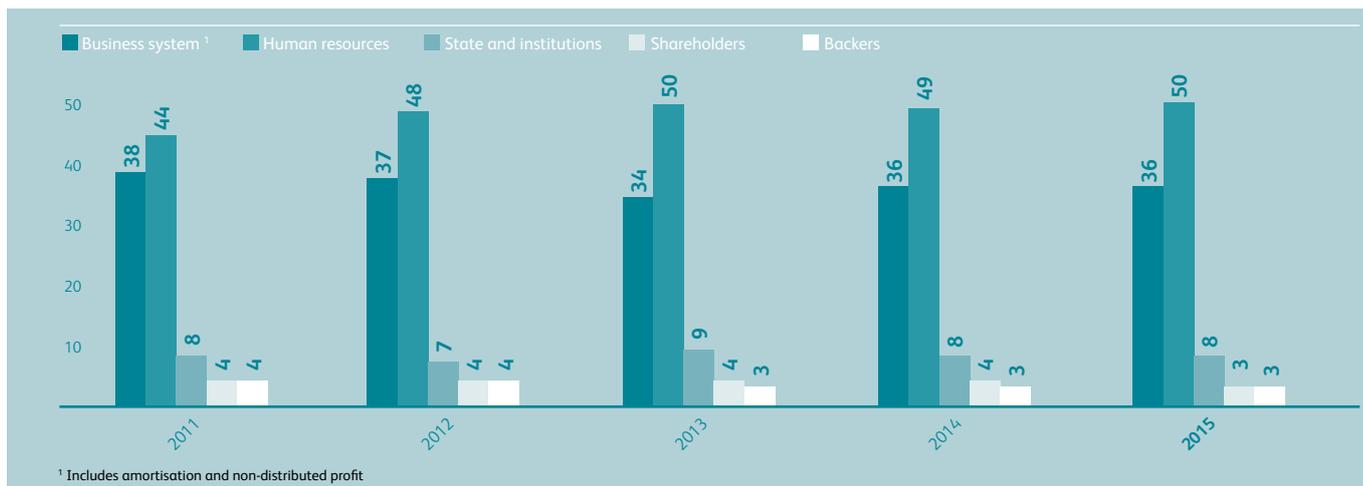




	2015	2014	2013	2012	2011
Net sales	674.2	636.4	595.4	583.0	555.7
EBITDA	148.4	142.9	131.8	132.2	130.4
EBIT	65.6	61.9	53.5	56.5	59.6
Net profit	32.4	29.2	21.6	29.0	31.1
Cash-flow	112.9	106.2	92.4	98.5	97.0
Investments	89.8	98.0	92.0	85.4	84.7
Employees	2,995	2,806	2,580	2,479	2,251
Number of countries	27	24	24	23	21

## 4.2. The distribution of added value

The distribution of added value allows the relationships between the SOL Group and the main stakeholders to be expressed in monetary terms.



## 4.3. Shareholders and investors

### The strategic success of a company is pursued also by maximising value for shareholders

*Code of ethics, article 2 – Conduct of business activity management*

The principal means of communication with shareholders is the Balance Sheet, published in the “Investor relations” section of the Group website [www.solgroup.com](http://www.solgroup.com). For this reason, as well as fulfilling legal requirements, the Balance Sheet has been expanded, especially in the sections “Additional notes” and “Management report”, with information giving greater detail on the activities carried out.

Communication with shareholders and investors also includes:

- the periodic publication of press releases on the Group website and their transmission to institutional investors
- participation in conferences promoted by financial institutions
- meetings and conference calls with investors and analysts
- roadshows

## 4.4. The supply of goods and services

### Suppliers

The SOL Group implements a supply policy that guarantees to all potential suppliers equal opportunity to propose their products and services and that relationships with them are managed with the criteria of impartiality, correctness and openness to competition. In the selection of partners for the supply of goods and services that are critical for safety, quality and the environment, SOL uses a qualifying process that verifies the possession of requisites demanded by company procedures.

Possession of these requisites is verified by objective methods such as the compilation of questionnaires and, where it is felt necessary, the carrying out of audits at supplier headquarters.

Suppliers are required to acquaint themselves with the Group Code of Ethics and, in Italy, with the Organisation, management and control Model under D.Lgs 231/01, and with the safety and environment Policies, and must adopt their content in carrying out their activities.

The responsible management of the Group means both constant attention to cost optimisation, including efficiency in purchasing, and the safeguarding of local interests and the maintaining of equitable and correct relationships with suppliers, aimed at creating value in the long term.

### The supply chain

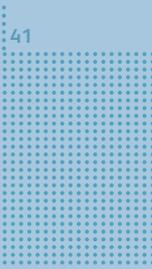
The principal goods and services purchased by the Group in all countries include electrical energy, sales containers (cylinders, tanks etc.), apparatus and consumables for the home care sector, transport and technical assistance, services and components for production plants.

Given the types of goods and services, it is normal that a high percentage of purchases are made in the same country in which they are used: in this way it is possible to reduce the distances travelled and, as a result, costs and emissions, in addition to favouring local economies.

In particular, the percentage of local suppliers of the Italian Group Companies is equal to 93% of the overall value of goods and services (a value superior to the 90% in 2014). Similar data are not available at this time for other countries, but, for the reasons outlined above, it can be reasonably supposed that local suppliers represent similar percentage values.

### Indirect economic aspects of the supply chain

In carrying out its activities, the SOL Group uses the collaboration of outside companies. Particularly important among these are those that provide specialist personal care activities and those that transport and deliver the various products.





5

Safety and the environment



**Safeguarding the health and safety of its human resources are basic, inalienable values for the SOL Group. These values are based on an ethical vision of work which guides daily action in all Group companies.**

## 5.1. Health and safety in the workplace

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**Conformity with legal requirements is a priority requisite for SOL and for all its collaborators and employees. SOL is constantly engaged in the safeguarding of the environment, health and safety in the workplace.**

*Code of Ethics, article 5 – Safeguarding of safety, health and the environment*

### Organisation

The importance of the subject led to the creation back in 2005, as part of central Quality, Safety and Environmental Management, a specific function serving all the companies in the Group that has the job of handling all activities safeguarding:

- people: health, accident prevention and workplace hygiene;
- company property: fire prevention, plant safety and environmental hygiene;
- administrative company responsibility pursuant to D.Lgs 213/01: company management system for health and safety, in accordance with BS OHSAS 18001.

The Function defines the lines of action, verifies their application and coordinates operations of the territorial Units and the other Functions.

In every Group company, each unit has one or more people trained to acquire specific competences in the areas of safety and the environment, and so able to implement company directives and ensure they are correctly applied.

For each company a “Safety and Environment Reference Person” (SERP) has been unequivocally nominated. The SERP:

- is the first point of reference for all communications regarding safety and the environment
- is responsible for distributing these communications within the company and the consequent training activity
- takes part in periodical training meetings where experiences are also shared

### Seveso Directive

Eighteen Group Units, because of the kind of gases they produce and the quantities stocked, fall into the field of application of Directive 2012/18/UE (“Seveso directive”).

They are the Italian units in Piombino and Mantova (upper tier), in Cremona, Cuneo, Salerno, Ancona, Marcianise, Verona and Pisa (lower tier), and those in Feluy (Belgium), Frankfurt, Gersthofen and Krefeld (Germany), Cergy Pontoise and Saint Savin (France), Tillburg (Holland), Jesenice (Slovenia) and, from 2015, Devnya (Bulgaria).

Directive 2012/18/UE makes it obligatory to adopt a specific safety management system (which has much in common with the provisions of OHSAS 18001), and this further reinforces the commitment of the units involved, which are periodically subjected to controls by the Authorities (four during 2015, all with positive outcomes).

### Training and awareness

Workforce training plays a fundamental role in the correct application of the company Management System.

All employees are thus involved in constant awareness and training activity aimed at avoiding or at least minimising the impact of our activities on the environment and ensuring a high level of safety.

The training needs of individual Units are determined annually by their managers and take concrete form in customised training programmes for personnel of all levels.

The training and updating of managers is also crucial.

To this end, periodical meetings are organised, with interventions also from outside specialists, to extend competences and also to stimulate collaboration among Units and share management methods.

A further reminder of safety problems comes from the periodical publication (in Italian and English) of:

- “Safety alerts”, documents which, starting from incidents that have happened in the sector, encourage the respect of rules of correct conduct;
- “Quarterly Accident Reports”, documents which illustrate and analyse any incidents that have occurred during the period within the Group and in other companies in the sector belonging to Assogastecnici and EIGA.

### Safety training

During 2015, the Italian companies of the Group organised 625 training meetings, with 4,200 people taking part, and a total of 4,299 hours, covering more than 80% of personnel.

### Environmental training

During 2015, the Italian companies of the Group organised 83 training meetings with more than 600 attending, for a total of 413 hours.

### Audits

Audits are the main instrument for verifying that the health, safety and environmental management system is working properly and for identifying and implementing any corrective measures.

Audits may be internal, carried out by SOL Group staff, or external, carried out by outside organisations. normally when certifications have to be renewed or obtained.

The aim of the internal audits is:

- to verify that activities are carried out in accordance with company rules and procedures, taking corrective action if this is not the case;

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4,299 hours  
of safety training

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- to assist the Units subjected to audit in making improvements, making use of the experience of other Units and reinforcing company health, safety and environmental culture.

External audits are carried out by the certifying body, with methods similar to those of the internal audits, and are designed to verify the correct application of the management system and observance of the regulations of reference (ISO 9001, ISO 14001, OHSAS 18001, EMAS, etc.).

Number of audits – SOL Group	2014	2015
Internal audits	202	188
Certification bodies	84	92
Total	286	280

### Accident Indices

The trend in accident indices shown below shows that the entire organisation is constantly engaged in respecting good company practices, as laid down by the Management System. In 2015 the frequency (IF) and severity (IG) indices of accidents within the Group (accidents that involved absence from work for at least a day, excluding that of the accident) were, respectively 7.1 and 167.

The frequency index shows a further reduction compared with previous years, while the severity index has significantly increased mainly because of accidents in the home care sector, in particular during delivery to customer homes, that led to long absences from work.

The frequency index for Italy is about 30% lower than that of the chemical industry (as determined by INAIL which, however, only considers accidents leading to an absence of more than three days, while SOL also considers absences of more than one day). This is about 35% lower than the average for manufacturing industry.



#### Frequency rate (SOL Group)

Accidents/10<sup>6</sup> hours worked



#### Severity rate (SOL Group)

Days lost/10<sup>6</sup> hours worked



The tables show the indices for countries where at least 100 workers operate.

The indices of almost all the countries taken into consideration show a positive trend.

Where, as in the United Kingdom and in Germany, the indices are significantly above Group averages, accidents were minor and mostly due to operator distraction: in all cases corrective measures were taken to reach the objective of zero accidents.

#### Frequency rate Accidents/10<sup>6</sup> hours worked

	Italy	France	Germany	Netherlands	Belgium	Republic of Macedonia	UK
2015	3.5	15.6	11.4	0.0	5.2	0.0	20.0
2014	4.2	6.3	18.7	2.8	0.0	0.0	31.0
2013	5.6	15.2	16.7	3.5	0.0	22.5	24.1
2012	6.0	0.0	8.3	4.0	14.6	0.0	18.9
2011	6.8	4.0	6.2	4.0	29.8	0.0	n.d.

#### Severity rate Days lost/10<sup>6</sup> hours worked

	Italy	France	Germany	Netherlands	Belgium	Republic of Macedonia	UK
2015	103	605	248	0.0	141	0	86
2014	60	76	105	8.8	0	0	228
2013	75.2	284.2	159.8	34.5	0.0	472.8	334.5
2012	46.5	0.0	108.8	8.0	114.4	0.0	163.4
2011	80.3	57.8	141.7	87.7	268.5	0.0	n.d.

“Zero accidents” objective  
achieved by 75%  
of the Group’s production units

#### “Zero accidents” objective

Retaining the “Zero accidents” objective is the challenge that each Unit of the SOL Group sets itself each year, almost always with success, thanks to the commitment of the entire workforce.

The success is closely linked to an awareness that safety in the workplace is above all an ethical matter, because it involves the quality of life of the people working in our Group. This is how we are able to create and maintain over time a shared culture that makes safety the basis of all activities carried out.

During 2015, the “Zero accidents” objective was attained by 53 Group Units, representing 75 % of the Group’s production units.



Many Units have been able to repeat this result over time, as shown by the fact that, in the past three years:

- 16 Units have reached five consecutive years without accidents
- 6 Units have reached ten consecutive years without accidents
- 3 Units have reached 15 consecutive years without accidents
- 6 Units have reached 20 consecutive years without accidents

### Worker health

All personnel potentially exposed to health risks are given medical checks, as laid down by law in the various countries and at intervals fixed by the doctor involved.

To maximise the quality of these checks in such complex organisations as SOL Spa and Vivisol Srl a coordinating Doctor has been nominated to set guidelines and verify the health protocols followed by local doctors.

Starting from 2012, health control monitoring, formerly limited to SOL Spa and Vivisol Srl, was extended to all Group companies. The percentage of employees undergoing health surveillance is shown in brackets.

	Italy	Other countries
Medical examinations (n° of employees)	419 (43.9%)	482 (24.0%)
Clinical analyses (n° of employees)	294 (29.8%)	273 (13.6%)
Further checks (n° of employees) <sup>(1)</sup>	237 (24.0%)	216 (10.7%)

<sup>(1)</sup> elettrocardiogrammi, spirometrie, audiometria, ecc.

The lower percentages of employees subjected to health monitoring in “other countries” are mainly due to a difference in regulations.

The outcomes of the checks carried out revealed 39 cases of pathologies deriving from work activity, mainly from manual load handling.

There were no positive results in tests for the assumption of psychotropic or narcotic substances.

There was no evidence of professional illnesses.

## HSE project of the year

The annual meeting of the SOL Group Prevention and Protection Service in Italy saw the first edition of the “HSE project of the year” prize for the best initiative for the protection of the environment or health and safety in the workplace, conceived and implemented autonomously by production units in the territory. Six units took part and the projects

presented concerned the protection of environmental resources (two projects) and the promotion of the best conditions for safeguarding health in the workplace (four projects).

The winning project was chosen by members of the Prevention and Prevention Service taking part in the meeting.

The 2015 winner was the “SOLHeart” project, for equipping all the main Italian units of the Group with automatic defibrillators for treating unexpected cardiac arrest and training more than 100 employees in their use.



## 5.2. Customers

**The ability to realise that our customers' problems are our problems; complete satisfaction of their requirements; a commitment to work together on single objectives to reach the most advanced results. These have always been the goals that SOL pursues in managing customer relationships.**

*Code of Ethics, article 2 - Conduct in managing business activities*

The SOL Group aims to satisfy its customers' needs in all the sectors where it operates, not only with the punctual supply of specified products but also and above all with assistance in identifying the best conditions and methods of use of the gases and apparatus supplied.

Given the growing sensitivity of customers to environmental and safety matters, SOL has invested in the identification and development of technologies which, during usage of the products supplied, permit an improvement of working conditions, reducing for example atmospheric emissions or making water purifying processes more efficient.

In addition, our customers increasingly often ask us to demonstrate the implementation of a management system, in particular for quality and the environment, sending questionnaires and carrying out audits in our production Units.

The rapid response to these requests that SOL habitually gives is a further qualifying element for customers.

In recent years, in addition to requests concerning the Quality and Environment management systems there have been requests on the ways Sustainability is managed in the broad sense. The information gathered for compiling this report is a fundamental source for satisfying such requests.

The personal data of our customers are protected in all countries where the Group operates, in accordance with a specific “Services supply policy”. Thanks to the application of this policy, there are no significant complaints about the privacy and security of the data handled.

## 5.3. Product management

11.000 Safety Data Sheets (SDS)  
in 14 languages

Product safety is monitored both in the production phase, during transport and through to use by customers, using risk evaluation processes

Management of the safety instructions of all substances and for all companies operating in the European Community is centralised in the Monza headquarters. Currently the database consists of more than 11,000 documents in 14 languages.

All these instructions, together with the labels applied to mobile containers, conform to CLP (Classification, Labelling and Packaging), aimed at standardising the classification and labelling of dangerous substances and preparations in Europe.

As far as REACH (Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals) is concerned, the only substances that required registration were calcium hydroxide (in Italy and Croatia) and acetylene (in Croatia).

The registration required for other substances that have already been preregistered (acetylene in other countries, nitrous oxide and calcium carbide) has been postponed until the 2018 deadline after verification that the quantities produced or imported are below the limit of 100 t per year.

The SOL Group takes part in national and international working groups on product safety matters so as to be constantly updated on the evolution of regulations and operate in harmony with other companies in the sector.

Particular attention is paid to the production and management of medical gases, where good Manufacturing practices for pharmaceutical products are applied and a pharmaceutical vigilance system is in action.



## 5.4. Production activities, their environmental impact and the raw materials used

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The materiality analysis shows that, given the characteristics of SOL production activities, emissions into the atmosphere and water do not constitute a significant environmental aspect and, in any case, show appreciable values only in primary process plants.

On the other hand, consumption of electrical energy is significant in the primary process Units, as is fuel consumption by vehicles used for deliveries of gases produced.

For these two environmental aspects, from this year we account for the total of equivalent emissions of CO<sub>2</sub>:

- Deriving from the mix of the various sources of electrical energy supplied (Scope 2 emissions)
- deriving from the kilometres driven and the type of vehicles used for deliveries (Scope 3 emissions)

The environmental indicators presented in this section thus relate to:

- Air separation plant
- Hydrogen producing plant
- Acetylene producing plant
- Nitrous oxide producing plant
- Plant for purifying and liquefying carbon dioxide
- Plant for producing special gases

The environmental parameters are shown separately for Italy and for the other countries where the Group is present, since production activities in Italy represent about 50% of the total.

The table shows the most significant information on plant whose environmental indicators are taken into consideration in the Report.

### AIA <sup>(1)</sup>

The plant has Integrated Environmental Authorisation as it falls in the field of application of the IPPC

### Certification <sup>(2)</sup>

The plant is certified under one or more of the following standards: ISO 14001, ISO 50001, OHSAS 18001 or EMAS Registration.

### Seveso Directive <sup>(3)</sup>

The plant falls in the field of application of Directive 96/82/CE ("Seveso Directive")

Company	Country	Unit	Plant type	AIA <sup>(1)</sup>	ISO 14001 <sup>(2)</sup>	EMAS <sup>(2)</sup>	ISO 50001	OHSAS 18001 <sup>(2)</sup>	Seveso Directive <sup>(3)</sup>
SGP Srl	Italy	Mantova	Air separation (ASU)						X
		Verona	Air separation (ASU)						X
		Cuneo	Air separation (ASU)						X
		Salerno	Air separation (ASU)						X
		Ravenna	Air separation (ASU)	X					
SOL Spa	Italy	Piombino	Hydrogen production						X
		Cremona	Nitrous oxide production	X					X
		Ancona	Acetylene production	X					X
		Caserta	Nitrous oxide production	X					X
		Pisa	Cylinder filling unit						X
		Monza	Special gas production						
SPG	Slovenia	Jesenice	Air separation (ASU)						X
SOL France	France	Cergy Pontoise	Cylinder filling unit						X
		Saint Savin	Cylinder filling unit						X
SOL Spa Branch	Belgium	Feluy	Air separation (ASU)						X
SOL Spa Branch	Germany	Francoforte	Gas liquefying from air separation						X
SOL Kohlensäure	Germany		Carbon dioxide production						
SOL Nederland	Netherlands	Tillburg	Nitrous oxide production						X
UTP	Croatia	Pola	Acetylene production						
Kisikana	Croatia	Sisak	Air separation (ASU)						
SOL SEE	Republic of Macedonia	Kavadarci	Air separation (ASU)						
TGS	Republic of Macedonia	Bitola	Carbon dioxide production						
		Volkovo	Carbon dioxide production						
		Lotepro	Air separation (ASU)						
		George Petrov	Acetylene production						
SOL BG	Bulgaria	Varna	Carbon dioxide production						
		Devnya	Air separation (ASU)						X
TGP	Bosnia-Erzegovina	Petrovo	Carbon dioxide production						

**Air separation plant**

The process of air separation for the production of oxygen, nitrogen and argon is a physical one. It is a process that uses atmospheric air as raw material and has a high consumption of electrical energy, as shown in detail below.

**Environmental aspects:** the process of air separation has significant indirect environmental impacts because it uses a great deal of electrical energy. On the other hand, it does not use raw materials and emits negligible amounts of CO<sub>2</sub>, sulphur oxides (SO<sub>x</sub>) and oxides of nitrogen (NO<sub>x</sub>) already present in the air treated.

**Hydrogen production plant**

These use natural gas and water as raw material in a chemical reaction that produces hydrogen.

**Environmental aspects:** hydrogen production plants emit CO<sub>2</sub> as a sub product of the reaction and negligible quantities of oxides of nitrogen (NO<sub>x</sub>).

**Nitrous oxide production plant**

These use as raw material ammonium nitrate, either solid or in water solution, in a thermal disassociation process.

**Environmental aspects:** not significant

**Acetylene production plant**

These use as raw material calcium carbide, a solid that decomposes in water.

**Environmental aspects:** the process produces calcium hydroxide, which is normally recycled for use in industry or agriculture.

**Carbon dioxide purification and liquefying plant**

The raw material is carbon dioxide itself, obtained as a sub product of chemical plant or from natural underground deposits. The carbon dioxide is purified and liquefied, through the use of energy.

**Environmental aspects:** the carbon dioxide obtained in this way is reused in industrial applications instead of being emitted directly into the atmosphere.

**Units subject to I.P.P.C. and I.E.D. (Industrial Emissions Directive)**

Some Units of SOL Spa and of SGP srl fall into the field of application of the EU Directive n.75 (21/11/2010) "Industrial Emission Directive" (I.E.D.), extending the scope of application of the I.P.P.C. (Integrated Pollution Prevention and Control) regulations, which govern the granting, renewal and re-examination of Integrated Environmental Authorisation.

The company has authorisation for its hydrogen (Ravenna), nitrous oxide (Cremona and Caserta) and acetylene (Ancona) production plants.

## 5.5. Energy and climate protection

### 5.5.1. The use of energy

**14.7%**  
self-produced electrical energy from renewable sources

SOL Group activities use as energy vectors electrical energy, methane and steam. Consumption of these latter two is negligible so we only analysed the consumption of electrical energy, which is one of the critical factors in the air separation process for the production of cryogenic gases: both the compression of the gases and their liquefaction are operations that consume a great deal of energy, and the consumption of energy of the ASU represents about 95% of the Group's energy consumption.

The Group is particularly careful to monitor energy consumption, not just for the economic aspects but also to meet the sustainability criteria that are a fundamental part of SOL Group culture.

Investments in the energy production from renewable sources sector are a further demonstration of the Group's commitment to defending the environment. The amount of self-produced electrical energy accounts for 14.7% of overall electrical energy needs, less than the 16.4% of 2014 because of the lack of rain.

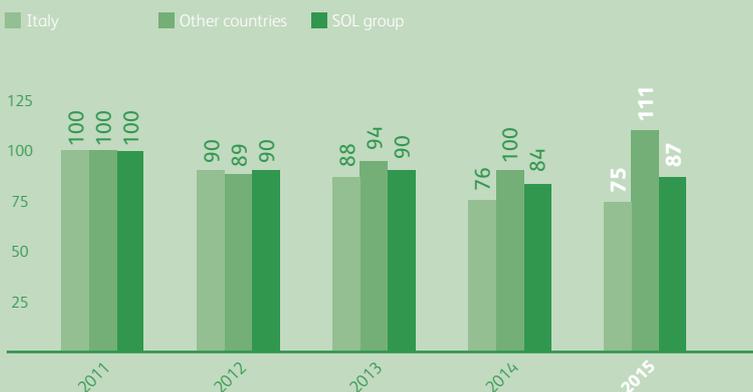
Interventions to contain energy consumption are not limited to the optimisation of processes and careful plant operation, but also extend to the design and choice of solutions for plant and the renewal of machinery used in the plant, to which an important slice of investments is destined annually.

Consumption is however considerably influenced by customer demand and the start-up (or shutdown) of production plant.

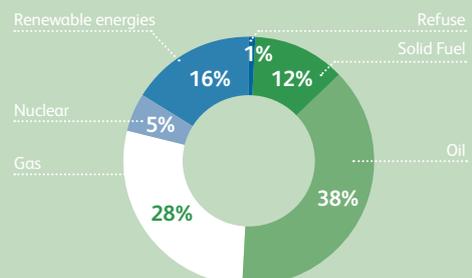
In particular, the negative trend of pipeline consumption is one of the major causes of the reduction of electrical energy consumption in Italy. In other countries, the positive trend in sales has led to an increase in consumption.

Starting from this year we have calculated the mix of energy sources, as in the graph below.

MWh of electrical energy consumed base 2011 = 100



Breakdown of electrical energy supplied by energy vector



## 5.5.2. Climate protection

Calculations were made starting from electrical energy consumption in each nation where the SOL Group is present with primary production plants, assuming that the energy mix is equal to the average of the company further plant is located. This produced a “weighted average” for all types of energy sources.

### Greenhouse gases emissions

Starting from this year we monitored not only direct emissions but also indirect emissions deriving from:

- electrical energy supply
- deliveries to customers

#### a. Direct emissions

The direct emission of greenhouse gases is made up of:

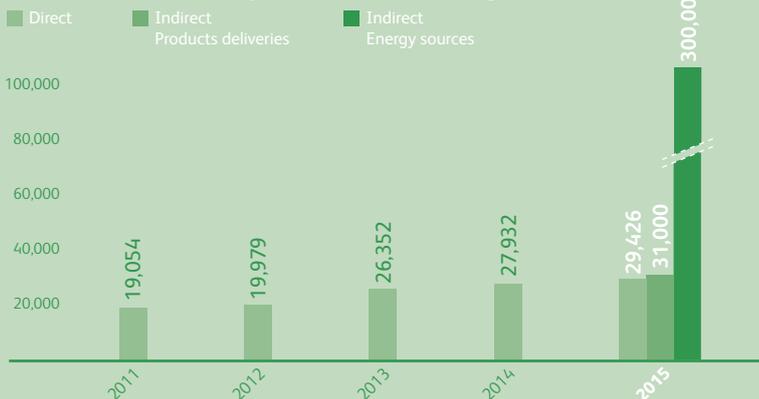
- carbon dioxide, a sub-product in plants producing hydrogen by steam reforming from methane, emitted from plant producing CO<sub>2</sub> from wells
- nitrous oxide, emitted from plant producing N<sub>2</sub>O from ammonium nitrate
- HFC (hydrofluorocarbons), used in plant refrigeration circuits.

The table shows the quantities of greenhouse gases emitted by production units, in equivalent tons of carbon dioxide.

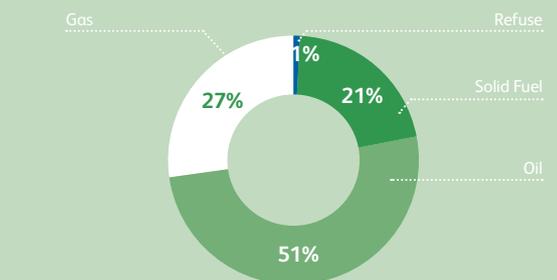
#### b. Indirect emissions from electrical energy supply

Starting from an analysis of the mix of energy supply we evaluated indirect emissions generated by the production of the electrical energy used by the SOL Group. These emissions were about 300,000 tonnes of CO<sub>2</sub>, subdivided as follows:

Gas emissions from production units (tCO<sub>2</sub> equivalent/year)



CO<sub>2</sub> emissions by energy source



(\*) Emissions from electrical energy supply

### c. Emissions from product deliveries

In 2015, the vehicles used for the delivery of refrigerated liquid products or the delivery of bulk products (hydrogen cylinder stacks) drove a total of about 28 million km, with emissions estimated at about 31,000 tonnes of carbon dioxide.

### Climate protection products

Many of the gas applications proposed by the SOL Group allow our customers to produce in a more efficient way and significantly to reduce their emissions.

A typical example is the use of oxy-combustible burners in the metals and glass industries which permits more efficient combustion than using only air, with a consequent reduction of energy consumption and atmospheric emissions.

The SOL Group is constantly committed to seeking solutions for sustainable mobility, aimed at eliminating emissions deriving from the circulation of cars, buses or lorries, in particular solutions using hydrogen as a fuel (see box)

## Filling station for hydrogen vehicles in Capo D'Orlando - Italy

Buses for urban transport and power assisted bicycles for bike sharing: all powered by hydrogen produced by solar energy. This is the i-Next project implemented by CNR-ITAE in Messina in which SOL, with the collaboration of highly qualified partners, has supplied the hydrogen filling station.

In the setting of the small Sicilian city of Capo D'Orlando overlooking the Aeolian Islands, the project is truly unique in many aspects and is integrated in a broader platform for the development of the technologies needed to implement the so-called smart cities, where innovative solutions create synergies for reducing the pollution of our cities and guaranteeing us a better quality of life. On the basis of past experience, SOL designed, developed and supplied a hydraulic vehicle filling station that could work fully autonomously, made up of modular units that ensure ease of installation and great scope for enlargement on the basis of future needs.

It all starts from photovoltaic panels, positioned on top of the shelter for vehicles not in service. Then a specific software analyses radiation at every moment thus calculating how much electrical energy can be produced: on the basis of the analysis, parties accumulated in a special group of batteries and part used to recharge electrical vehicles. The remainder is sent to the plant designed by SOL for the production of compressed hydrogen at 350 bar, thus exclusively using renewable energy.

The pump at the plant thus serves to supply hydrogen daily to a bus in the municipality of Capo D'Orlando and to two power assisted bicycles (also hydrogen powered) available to residents in a bike sharing service. Among the main innovative aspects, the Capo d'Orlando station is the first hydrogen filling station in Sicily and one of the few in Europe to be completely autonomous in energy terms. And it is designed and produced entirely by Italian partners.



## 5.6. Transport

### 5.6.1. Deliveries to customers

More than **28 millions**  
of kilometers

Attention to transport is of fundamental importance for environmental and safety aspects. Products are distributed mainly by road and to an extremely widespread customer base.

The chemical and physical characteristics of the main products also make it necessary to use special vehicles for transport (super isolated tankers for cryogenic liquids) or special containers (cylinders for compressed gases and base units for liquid oxygen for home care use). In both cases, the unfavourable ratio between the tare weight and the weight of the products transported makes for low fuel consumption efficiency per product unit.

Bearing in mind these limits, SOL action to reduce fuel consumption and hence environmental impact consisted of:

- the creation of production units spread as widely as possible over the territory, to reduce vehicle mileage
- investments to purchase new generation super isolated tankers, with a higher ratio between weight of product transported and total weight
- the adoption of logistics management methods aimed at optimising routes.

Rainbow, a software for planning the distribution of liquid products adopted and perfected in 2012 for companies operating in Italy, has now been adopted for all other companies, except for those recently acquired where introduction of the software is planned.

The graph shows the trend in the ratio between kilometres driven and product units transported (mc/kg), with the base reference 2011 = 100.

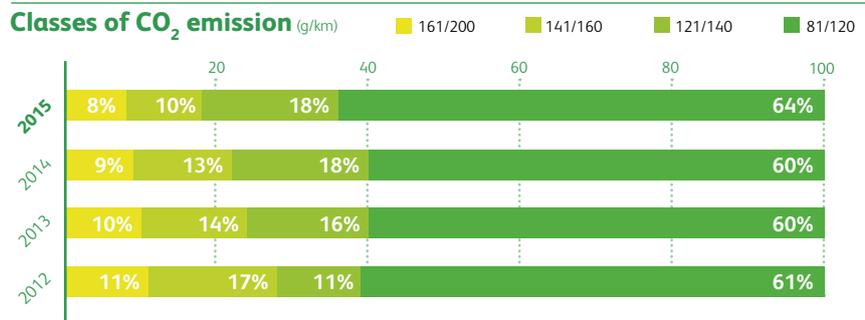
Ratio between kilometres driven and product transported (mc/kg)



## 5.6.2. Mobility of technical and sales staff

The environmental impact of the mobility of technical and sales staff operating in Italy is also kept under control through a policy of renewing the fleet of company vehicles acquired through leasing, favouring models with reduced CO<sub>2</sub> emissions.

In 2015 the percentage of vehicles in the middle-lower categories, between 81 and 140 g/km, rose from 78% to 82%, an increase of 5.1%.



## 5.7. Acoustic emissions

Acoustic pollution is mainly caused by machinery such as compressors and turbines, by the loading of tankers and by evaporation towers used to cool industrial water.

To reduce emissions, which already in the plant design phase have been limited by certain technical measures (for example, the encapsulation of compressors), further interventions have been carried out over the years, including the installation of silencers along the tanker loading lines and the soundproofing of evaporation towers.

For all plant, thanks above all to the above interventions, daily noise levels at the perimeter wall have been recorded as lower than 70 dB(A), thus within the limits allowed by law in industrial areas.

The company is however committed to monitoring constantly the levels of acoustic pollution and acting, where technically possible, to reduce it further with additional interventions on plant.

## 5.8. Emissions into the atmosphere

The nature of the production processes, described in 5.4, is such that no significant quantities of nitrogen (NO<sub>x</sub>) or sulphur (SO<sub>x</sub>) emissions are generated.

The levels of emissions are however periodically controlled, but are always found to be well below legal limits.

## 5.9. Waste and packaging

### 5.9.1. Waste

The production processes used in Group Units do not directly produce waste, with only one significant exception: the acetylene production process, which generates calcium hydroxide, which can be sold as a sub-product or sent for disposal.

In 2015 it was hard to find purchasers in Italy for the calcium hydroxide, and as a result almost all of it had to be sent to dumps for disposal.

If we exclude calcium hydroxide, other refuse is produced in modest quantities and so we thought it best to eliminate the distinction between refuse produced in Italy and in other countries, since it is not significant.

The Report gives the quantities of waste produced:

- in the primary process plants:
  - non-harmful waste produced by maintenance activity: prevalently scrap iron, packaging and insulating materials;
  - harmful waste produced by maintenance activities: prevalently oil formerly used for machine lubrication;
  - calcium hydroxide, a sub-product in the production of acetylene and ammonia solution, a sub-product of the conditioning of ammonia, both considered dangerous waste.
- in the activities of:
  - testing of cylinders and cryogenic vessels;
  - repairer of electrical and electronic apparatus;
  - activities on customer premises:
    - » harmful waste from maintenance activities: prevalently oil formerly used to lubricate machines and plant filtering systems;
    - » sanitary waste from home care activities.

Note that, given the origin of the waste produced, the type and quantity varies from year to year with the number and type of maintenance interventions carried out.

#### Waste (t/year)

	2015	2014	2013	2012	2011
<i>Non-harmful</i>	<b>515</b>	170	432	344	96
<i>Harmful</i>	<b>1,757</b>	582	2,421	2,209	2,728

The destinations of the waste produced are the following:

#### Dump (t/year)

	2015	2014	2013	2012	2011
<i>Non-harmful</i>	24	36	16	8	10
<i>Harmful</i>	1,660	482	2,309	2,024	2,566

#### Treatment (t/year)

	2015	2014	2013	2012	2011
<i>Non-harmful</i>	148	16	30	87	17
<i>Harmful</i>	40	99	70	50	154

#### Recovery (t/year)

	2015	2014	2013	2012	2011
<i>Non-harmful</i>	343	118	386	249	69
<i>Harmful</i>	57	1	42	135	8

## 5.9.2. Packaging

The amount of packaging that constitutes refuse is generally modest.

Gas products are prevalently distributed by pipeline or in liquid form in tanks, and since these products are consumable customers have nothing to return to us.

For the distribution of products in cylinders, cylinders, cylinder baskets, dewars and other mobile recipients are used. These can all be reused several times and last up to about 40 years.

Programmes for controlling the indices of rotation and stock checks are periodically implemented so as to reduce as far as possible the number of mobile recipients to be purchased.

## 5.10. Water resources

For the SOL Group, managing water resources means:

- optimising usage in its own plant. by reducing withdrawals to a minimum also through investments in recycling;
- research and application on customer premises of technologies which by using technical gases can improve processes such as wastewater treatment or making it drinkable for civil uses.

### 5.10.1. Water usage

Most of the water is used in the cooling circuits of machinery in production plant.

In 2015 we invested in the Sisak plant in Croatia and now in all plants with significant consumption water is cooled in evaporation towers and reused.

Consumption, which is lower than in previous years thanks to the investment made, is thus prevalently related to the integration of the quantities evaporated.

During 2015 we continue to optimise the "number of concentration cycles" in the cooling circuits to minimise the consumption of water for cooling.

In the same period, for some units producing nitrous oxide, which have a relatively low consumption of water for cooling, action was in any case taken to recover and reuse cooling water. In one of these units it was possible to obtain a reduction of water consumption of about 60% with the same production level.

#### Water usage (m<sup>3</sup> x 10<sup>3</sup>)

	2015	2014	2013	2012	2011
Italy	963	1,060	1,053	1,094	1,215
Other countries	1,172	2,052	1,990	1,616	5,560

## 5.10.2. Water discharge

Plant implement monitoring and control programmes on the quality of water discharged.

Analyses show that, over and above the absolute values of the quantity of pollutants shown in the tables below, their concentration is well below legal limits.

### Water discharge (t/year)

		2015	2014	2013	2012	2011
<b>Italy</b>	<i>COD</i>	8.16	6.59	15.59	24.61	22.15
	<i>Total nitrogen</i>	2.3	3.02	4.97	4.27	6.64
	<i>Suspended solids</i>	5.9	5.98	6.50	4.88	4.24
	<i>Total phosphorus</i>	0.3	0.18	0.54	0.37	0.46
	<i>Heavy metals</i>	0.03	0.04	0.12	0.09	0.11
<b>Other countries</b>	<i>COD</i>	1.72	1.98	1.64	2.77	
	<i>Total nitrogen</i>	0.32	0.29	0.35	0.65	
	<i>Suspended solids</i>	1.27	1.16	1.76	0.76	
	<i>Total phosphorus</i>	0.02	0.01	0.11	0.41	
	<i>Heavy metals</i>	0.0	0.0	0.0	1.50	

## 5.10.3. Technologies for customers

Among the principal technologies perfected by the Group for the management of water resources are:

- the treatment of wastewater with O<sub>2</sub>: makes purification more effective and increases purification capacity, reducing the environmental impact and giving better control over treatment;
- the treatment of wastewater with ozone: reduces colouration, micro-pollutants and nitrates and so reduces the environmental impact of the treatment;
- disinfection with ozone: this protects the watercourses where wastewater is re-emitted after treatment from bacterial pollution and also avoids the use of chlorine compounds;
- control of the pH with CO<sub>2</sub>: this substitutes mineral acids (sulphuric and hydrochloric) which leave pollutants in the water.

## Ammonia: an environmentally friendly fertiliser

The SOL Group helps reduce the environmental impact of agricultural activities, thanks to technologies using anhydrous ammonia as a fertiliser.

Anhydrous ammonia, besides offering agronomic and economic advantages, makes it possible to reduce the atmospheric emissions of carbon dioxide as it contains none, unlike the most used fertiliser, urea.

SOL has recently introduced alongside more traditional technologies an innovative process that makes it possible to use a traditional fluid fertiliser such as anhydrous ammonia also in the top dressing of maize, with distribution

between rows at a depth of about 20 cm, to favour the use of the products of bacterial degradation of the fertiliser (ammonia and nitrogen ions) directly by the roots.

To do this the SOL Group has designed and produced a machine that introduces the ammonia into the soil with special injected teeth, without damaging the cultivation.

It is thus possible to optimise the administration of nitrogen while maintaining the good practice of fractionating the quantities needed to satisfy crop requirements, limiting losses due to volatilisation (typical of the surface

distribution of granular fertiliser in very hot periods) and favouring production through better usage by crops of soil humidity thanks to the penetration of roots into the deeper layers of soil where the ammonia is injected.

The use of ammonia in cereal crops thus helps to reduce the quantity of the products of bacterial degradation of the principal nitrogen fertilisers (urea, nitrate etc.) in surface waters, reducing the nitrogen available for the growth of vegetable organisms (microalgae) and combating the eutrophication of lakes, rivers and lagoons.





## 5.11. Terrain and groundwater

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Oxygen, nitrogen and argon are produced by a process (air separation) which is physical in nature and excludes the possibility of the presence of substances that could contaminate to rain groundwater.

Nor does the production of oxygen with the steam reforming process involve chemical pollutants.

In the production of nitrous oxide, ammonium nitrate, as a concentrated liquid or solid, is used as the raw material. It is stored using methods designed to prevent any dispersal in terrain or groundwater.

In acetylene production, the reaction produces calcium hydroxide as a sub-product, and this is stored in special tanks before being transferred to users in various market sectors or sent for disposal.

Some SOL Units have been constructed in locations that have terrain and groundwater contamination problems, but these have other causes and predated the arrival of SOL.

### **Mantova**

Part of the SOL plant in Mantova, constructed inside the chemical Pole, falls within the boundary of the "Mantova Lakes and chemical Pole site of national interest".

Again in 2015 SOL took part in the annual "Planned groundwater monitoring campaign" promoted by the Mantova ARPA.

### **Ravenna**

The SOL plant is located inside the Ravenna chemical Pole, which has a groundwater pollution problem.

SOL has constructed a piezometer on its own land, as requested by the Ravenna ARPA, and takes part in periodical monitoring campaigns.

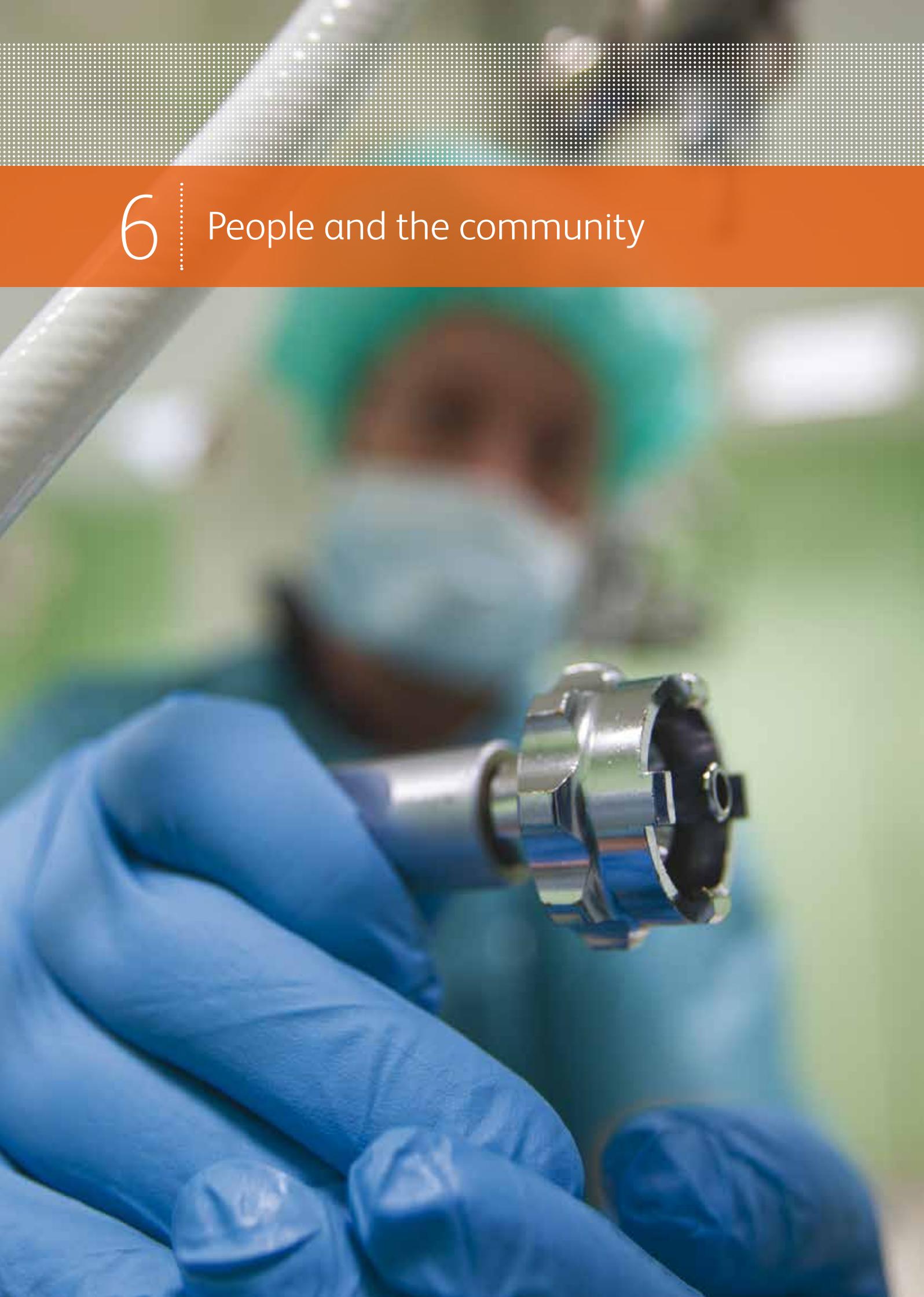
## 5.12. Biodiversity

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The activities of the SOL Group have a very limited impact on biodiversity, since the production units are relatively small in size and located in industrial areas.

6

People and the community





**Transparency, loyalty, impartiality, honesty, integrity, a continual commitment to quality, continual improvement of safety and respect for the environment are the fundamental values that SOL Group wishes to find and constantly encourage in all its employees.**

## 6.1. Human resources management policies

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**SOL attaches the maximum importance to those who work within the Group, contributing directly to the development of the company**

*Code of Ethics, article 4 – Personnel policies*

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To operate responsibly, respecting the environment and safeguarding health and safety, it is indispensable to involve all personnel.

For this reason the SOL Group favours free and transparent communication at any time and at all levels, regardless of necessary hierarchical relationships.

Also scheduled appointments, such as the periodical meetings between headquarters management and operational personnel, and the maintenance and continual enrichment of the company Intranet and publication of the company magazine “SOL News” are instruments designed to exchange information and experiences, and contribute to the personal and professional growth of employees.

It is above all through human resources that the SOL Group is able to develop and improve its performance.

All SOL Group employees, whatever their roles and with whatever type of contract they operate within the Group, are responsible for the objectives entrusted to them and must thus have the possibility, within the limits of their responsibility and with respect for the organisation, of taking decisions and working with a high degree of autonomy, in a strong relation of trust with the company.

In this sense the SOL Group undertakes to:

- develop the abilities and competences of its employees so that the commitment and the creativity of each of them can find full expression in realising their own potential, in harmony with the requirements of the organisation;
- maintain a close connection between the Holding company and the various subsidiaries in the field with a spirit of partnership;
- stimulate the exchange of information through internal communication media that are increasingly varied thanks also to the use of modern Informatics technology;
- make the most of human capital through the sharing of the main values on which the Group identity is based and the integration of diversity and best practices within the Group;
- guarantee to all its collaborators psycho-physical integrity with respect for their moral personality. In this sense the SOL Group is constantly committed to respecting national labour regulations, international conventions and recommendations, including the resolutions of such international organisms as the ILO (International Labour Organization) and the UN (United Nations Organization).

## 6.2. Employment and the management of diversity

Below are some general data, referring to the situation at 31.12.2015, on the personnel within the SOL Group.

In some cases, which are clearly indicated, the data refer only to companies operating in Italy.

We are progressively adopting procedures for systematic collection of data on overseas companies which, for the moment, relate only to the home care sector.

Employees at 31.12.2015

2.995



+ 6,7%  
with respect to 2014

### Employment trends

Despite the lasting market crisis, again in 2015 the number of employees grew both in Italy and in the other countries where the group operates, though slightly less than last year. Overall growth with respect to 2014 was 189 units, 6.7%.

Of the 189 units, 158 (+ 8.5 %) relate to overseas companies while the remaining 31 (+ 3.2 %) to those operating in Italy.

Note that, following the modification of the accounting boundaries following the coming into force of the amendment to IFRS 11 mentioned in the "Methodological note", employees of the Group's Indian companies have been excluded from the report, and data from previous years have been adjusted accordingly.

The percentage of turnover is further reduced, showing the consolidation of activities and greater structuring of the companies operating outside Italy

### Work-life balance

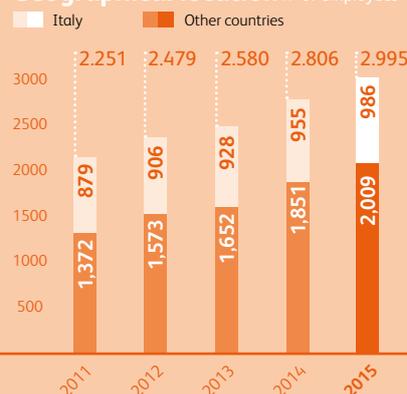
The SOL Group, compatibly with technical and production organisational needs, is sensitive to the needs of its employees to balance their working life with personal and family requirements, even of a temporary nature.

In fact the SOL Group operates forms of flexible working hours, is favourable to granting periods of leave on motivated the request, even beyond what is laid down by law or the

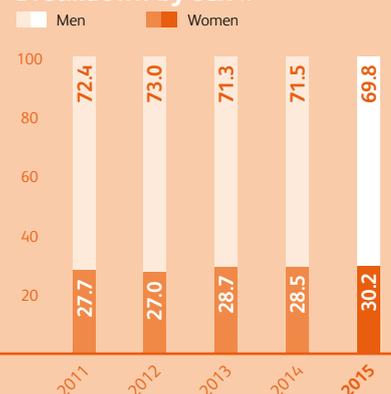
### Employment trends %



### Geographical location n° of employees



### Breakdown by sex %



<sup>(1)</sup> Calculated as the ratio between entrants in each year and the average workforce in that year.

<sup>(2)</sup> Calculated as the ratio between those leaving in each year and the average workforce in that year.



collective contract, has had positive experiences of tele-working. The percentage of part-time workers, more than 6% of the average Group workforce, is particularly significant. The concession of loans on favourable conditions is formally envisaged as is the willingness to concede advances on end of service payments, even for reasons different from those laid down by law.

### Management of diversity, equal opportunities and demographic trends

The progressive extension of our activities to new countries, and sometimes to new continents, demand is growing attention to the national and cultural differences in the companies of our Group.

To meet these needs, in 2015 we launched a diversity and inclusion management programme with online and classroom training for all Group personnel.

For the breakdowns by sex, length of service and age group of Group personnel, see charts. The percentage of women employed in Group companies is constantly growing, and in 2015 was 30.2% of the total workforce.

Of the 10 members of the Board of Directors of SOL Spa, 40% are women.

### Absenteeism

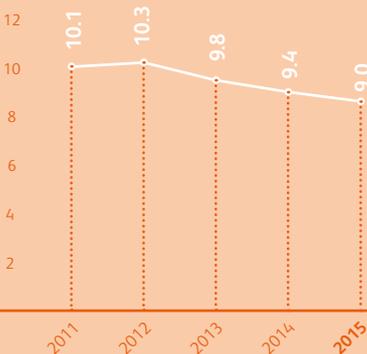
The SOL Group has for years in Italy had a level of absenteeism far below both the national average for the sector and the average for industry generally.

The 2015 figure for the Italian companies in the Group has slightly increased compared with the 3.1% in 2014, to 3.35%.

The parameter is not at the moment monitored in countries in other countries, but qualitative data suggests that the phenomenon is under control also in the overseas companies and thus does not represent a critical factor.

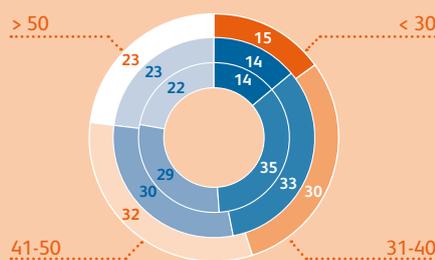
#### Breakdown by length of service

Average years of service



#### Breakdown by age group %

■ 2015 ■ 2014 and 2013



## 6.3. Remuneration and social benefits

The SOL Group operates with the aim of constantly developing in its human resources management policies optimal management of its personnel through the combined use of a series of instruments.

The SOL Group makes no distinctions of sex in the management of remuneration policies which, for each role, are based on competences and results.

In the countries where required by local legislation – a majority of those in which we operate – the SOL Group generally applies to personnel the collective contracts for the sector of reference or, alternatively, minimum salaries.

Retribution, which is monitored by local managers, is in line with or better than that laid down in the contracts of reference.

### Remuneration policies

In the Group companies, great attention is paid to the use of remuneration development incentives both at collective level and at individual level through a merit policy and bonuses for individual performance.

Normally the increases in retribution laid down by collective sector contracts or by law are guaranteed and, where union representation is present, integrity of contracts are negotiated that can include, as for example happens in Italy, bonuses for production and participation linked to the trend in parameters of productivity, company profitability and injury indices.

### Supplementary pension plans

In Italy, as part of the chemical industry national collective contract, there is the “FONCHIM” pension fund (to which SOL subscribed right from the start) which, with joint contributions from the employee and the company, creates individual pensions that supplement public pensions. The level of participation in the fund by personnel in the Group’s Italian companies is quite high, considering both the validity of the initiative in the constant promotion and information activity by the company both at the moment of hiring and during employment.

FONCHIM	Average participants	%	Contribution from the company
2015	575	73%	442,100
2014	580	74%	418,600
2013	582	73%	390,800
2012	567	77%	414,000
2011	569	77%	378,000

In line with differing practices in the various European countries, many Group subsidiaries also contribute to similar pension plans.

### Supplementary health plans

The supplementary health fund for the Italian chemical industry “FASCHIM”, also created by the national collective contract, is more recent.

The chemical sector was the first to introduce this coverage at category level, making it part of collective negotiations, being well aware of that the public health system would find it increasingly difficult to meet public health needs.

The majority of the contribution is paid by the company. Employees can also add their families. The fund has been an undeniable success, with a stable level of about 80% of company employees subscribing.

In this sector too similar initiatives have been taken by the principal overseas Group subsidiaries.

FASCHIM	Average participants	%	Contribution from the company
2015	634	80%	174.000
2014	630	81%	171.400
2013	613	79%	150.400
2012	574	79%	157.000
2011	572	79%	156.000

### Insurance

Company personnel required to travel abroad are protected by a specially stipulated insurance policy to cover medical expenses, theft of baggage and all other misfortunes.

## 6.4. Personnel selection and talent attraction

Recruitment and selection play a key role in succeeding in attracting on to the staff of Group companies highly qualified collaborators of great professional value.

To recruit for its staff a team of collaborators who are qualified and of professional value, particular attention is paid by the company to recruitment and selection.

In addition to the direct operational involvement of the central and local Human Resources functions, contact is often made with the leading universities, training bodies, schools and professional associations, with participation also in special recruiting events ("career fairs") and publication of the company profile in some of the leading career directories.

These contacts lead each year to university students entering the company, and not merely for professional orientation stages or thesis material gathering.

### Talent Day

To help young people approach employment with greater awareness and to supply useful tools for actively seeking jobs, the SOL Group (with the support of CSR Ambassadors) organised on November 21, 2015 a "Talent Day" in the Cergy Pontoise (Paris) of SOL France, dedicated to the children of SOL Group employees in France.

During this day of orientation or training, the children were brought into contact with human resource managers using a "classroom-laboratory" format.

These days, which will also be repeated in 2016 in other Group companies, are inspired by the principles of Corporate Social Responsibility and aim to help the children of company employees approach employment with awareness, and follow professional paths in line with the effective needs of the market and their own personal inclinations.

The workshops are organised as laboratories for developing awareness of the dynamics of companies, the tools and characteristics that characterise the employment market and its players, using an orientation model that stimulates participants to acquire information on the context and to perform self-evaluation.

The objectives of the Talent Day were thus:

- to offer the children of employees the chance to orientate themselves in the employment market
- to encourage the young people through the

involvement of their own company

- to effect "Employer Branding"
- to develop new employment search tools ("attraction") and to channel company "Corporate Reputation" messages B2B, B2C and B2B2C
- to integrate the initiative synergic Li with existing projects on welfare, school and university orientation and work

For this event the SOL Group received, in the hands of Dr Giovanni Annoni, recognition from CSR Ambassadors.





## 6.5. Training, development and communication

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2,400 training sessions  
30,000 hours

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Learning and training, in the broadest sense, are an integral part of SOL Group culture.

For this reason, the companies in the Group attach great importance to the training and development of personnel at both the technical and managerial levels.

In the SOL Group we believe that the main stimulus to improving our professionalism is to be found within ourselves: in our curiosity, in the determination with which we face new challenges, in the desire to learn and face up to new things.

In this context, in our Group training is primarily “in the field”, with more experienced colleagues constantly at one’s side.

During 2015, the Group organised more than 2,400 training meetings, lasting a total of more than 30,000 hours and covering all areas of company activities and all professional skills.

In addition to technical and obligatory and non-obligatory security training, Human Resources Management organises and coordinates each year special training plans dedicated, with an international viewpoint, to knowledge of the company and its culture.

## 6.6. Industrial relations

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Central Personnel and Legal Affairs Management directly handles industrial relations for all Italian companies in the Group and coordinates them for overseas companies, intervening when necessary.

SOL is an active member of the chemical industry Confederation (Federchimica) and takes part in negotiations for the renewal of the national contract and in other joint initiatives.

At company level, SOL has periodical meetings with union representatives aimed at maximum collaboration and transparency, and negotiates a company contract, complementary to the collective contract which, as provided for by the national contract, aims to reward objective improvements in productivity and profitability.

## 6.7. Authorities and Public Administration

**Relationships with the Public Administration must always be conducted by each employee and/or external collaborator with the principles of loyalty, correctness and transparency**

*Code of Ethics, article 2 - Conduct in managing business activities*

The Group's activities involve frequent contact with the Authorities and Public Administration, both for the handling of authorisation processes and for periodical verifications that laws are being respected.

On the second point, during 2015 Group Units were subjected to 73 days of audits by the Authorities on safety, environmental and pharmaceutical GMP issues (in 2014: 43 days).

In handling relationships with local and national Authorities, the SOL Group endeavours, while respecting the roles of the parties involved, to set up a constructive dialogue aimed at constant improvement, on the basis of objective data and technical and scientific evidence.

## 6.8. The community

About **400,000 €**  
of contributions paid in 2015

The characteristics of the production processes and of most products do not normally create problems in managing relationships with local communities.

The SOL Group is however always committed to maintaining a frank dialogue, seeking to understand the needs and requests of the communities in the neighbourhood of its production Units in order to obtain better acceptance of its presence. Active participation in the preparation of External Emergency Plans (where required) is further evidence of sensibility to the needs of the community.

An important initiative is the "Open Factory" events, promoted in Italy by Federchimica, which periodically allow the public (on different occasions: inhabitants, students, authorities, customers, suppliers etc) to visit a production unit and see with their own eyes how a complex industrial reality is managed.

The SOL Group gives its support to bodies, institutions, associations and sports clubs operating coherently with Group values, both with financial contributions and by making available its competences.

In 2014 contributions totalled about € 400,000.

Among the projects worthy of mention:

Italy: both **SOL Spa** and **Vivisol Srl** contribute to various non-profit organisations. SOL, in particular, is a sponsor and partner of Progetto SLAncio, promoted by the La Meridiana Cooperative in Monza, which supplies assistance to those suffering from invalidating neurological and neuromuscular illnesses.



Vivisol supports AISLA, an association with the mission of becoming the national point of reference for the protection, assistance and care of SLA sufferers and for the development of scientific research into a neurodegenerative disease which affects motoneurons and gradually limits muscular activity; TELETHON Onlus which since 1990 has invested in research into a cure for rare genetic illnesses; the Associazione Vivi Down Onlus, which every day supplies Down Syndrome sufferers and their families tools to alleviate the difficulties that this disability involves; UILDM, the national association of reference for those affected by dystrophies and other neuromuscular diseases.

Belgium: **Vivisol B** is the main supporter of Sleeponline, a non-profit organisation of pneumologists specialising in the study of sleep that promotes awareness of respiratory disturbances during sleep among other doctors.

Germany: **Vivisol D** supports, among others, the Deutsche Sauerstoffliga LOT eV (Association of patients in home oxygen therapy) and the QVH (Association for quality in home respiratory care).

Holland: **Vivisol Nederland** supports several projects and bodies, particularly significant among which is the “Homerum” research project of the for Dutch Academic Centres for Home Ventilation. The project carried out remote monitoring of a sample of patients receiving pulmonary ventilation and demonstrated that home treatment is just as safe as that applied in hospital structures, and costs less. Vivisol Nederland also supports several patient organisations, including the Dutch Apnoea Society and the Dutch Lung Foundation.

**SOL Nederland** supports the non-governmental body Stichting MOS which provides medical support during sports events.

Spain: **Vivisol I** supports the Catalan Pneumology Society (SOCAP).

United Kingdom: **Dolby Vivisol** supports several Associations including the BLF – British Lung Foundation; the ARTP – Association For Respiratory Technology & Physiology, of which it has been a corporate member since 2012; the BTS – British Thoracic Society; the CHSS – Chest, Heart & Stroke Scotland; the SEHTA - South East Health Technologies Alliance: projects for home care of patients; and the Scottish Sleep Forum.

## 6.9. Associations

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The SOL Group takes an active part in the activities of the main associations of companies in the technical and medicinal gases sector, in the home care and biotechnologies sector in Europe and in various European countries.

Group experts take part in several working groups in these associations, contributing to the exchange of technical knowledge and the drafting and updating of sector standards.

### International Oxygen Manufacturers Association (IOMA)

SOL Spa is a member of the IOMA, which includes all the world's main operators in the technical and medical gases sector; its principal objective is to coordinate the harmonisation of safety rules so that operational practices are the same throughout the world.

### European Industrial Gases Association (EIGA)

In addition to SOL Spa, members of EIGA, which includes all the main European operators in the technical and medicinal gases sector, are also Group companies SOL Nederland, BTG, SOL Deutschland and Vivisol Austria.

During 2015 the SOL Group further increased its involvement with associations and today has its own representatives on the Board of EIGA (of which Marco Annoni is chairman for 2015/2016), in the four Councils, in 11 working groups (ten in 2014) and in 14 ad hoc Groups (as in 2014), contributing to the definition of standards and best practices in the sector.

### National category associations

Among the national Associations of which Group companies are members we mention:

- industry and chemical and pharmaceutical industry associations: Confindustria, Assolombarda and Federchimica (Italy), UIC (France), Essenscia, Febeliec and Pharma. be (Belgium), Spectaris, VCI and BVMW (Germany), HACI (Greece), UGIR (Romania), CIA (Macedonian Republic)
- technical gases industry associations: Assogastecnici (Italy - SOL Spa), IGV (Germany – SOL Deutschland and SOL Kohlensäure), ÖIGV (Austria - SOLTG), VFIG (Holland – SOL Nederland), BIMGA (Belgium - BTG), AFGC and APHARGAZ (France - SOL France), HAIMG (Greece - SOL Hellas), GIZ TP (Slovenia – TPJ), BCGA (United Kingdom – Dolby Vivisol), BIGA (Bulgaria – SOL BG); AIIGMA (India – SicgilSOL).
- associations for biotechnology development: Assobiotec (Italy - Biotechsol)



- associations of home care sector operators: ÖGP (Austria - Vivisol A); Deutschen SauerstoffLiga LOT and QVH (Germany - Vivisol D); FHI (Holland – Vivisol Nederland); SYNALAM and FFAIR (France – Vivisol F and France Oxygene); Assobiomedica, which represents companies supplying medical devices to health structures (Italy – Vivisol)
- other associations: Unamec “Association of producers, importers and distributors of medical devices” (Belgium - Vivisol Belgio); ARTP “Association of Respiratory Technology and Physiology” (United Kingdom – Dolby Vivisol); Unternehmenschaft Niederrhein (Germany – SOL Deutschland)

### Various

Group companies are part of prestige associations, with their own representatives who, in many cases, hold positions of responsibility in governing Councils:

- FBN – Family Business Network, includes more than 6000 countries from 56 countries and has the aim of helping family companies to grow, succeed and prosper through the exchange of new ideas and “best practices”
- AIDAF – Associazione Italiana Delle Aziende Familiari, which includes Italian family companies that shared the guide values of business ethics, meritocracy, social responsibility and sustainability
- Aspen Institute Italia which promotes and encourages the development of enlightened leadership that is open to dialogue and able to face the challenges of a global society
- ISPI – Istituto Studi di Politica Internazionale, one of the most ancient and prestige Italian institutions specialising in international activities which, among other things, constitute a point of reference for companies and institutions intending to extend their range of action abroad, offering materials and ad hoc encounters

# 7 GRI - G4 - Correlation table

The “References” column indicates the paragraphs and the pages of the Report where the subject is covered.  
The “Notes” column gives additional information and clarification

Rif.	Description	References	Notes
<b>GENERAL ASPECTS</b>			
<b>1. Strategy and analysis</b>			
G4-1	Chairman's declaration	Sustainable development: our responsibility and our commitment, page 1	
<b>2. Organisation profile</b>			
G4-3	Name of organisation	Group structure, page 11	
G4-4	Main brands, products and/or services	Sectors of activity, pages 11-25	
G4-5	Headquarters		Via G. Borgazzi, 27 - Monza (Italy)
G4-6	Countries of operation	SOL Group, page 13	
G4-7	Ownership structure and legal form	Group structure, page 11	
G4-8	Markets served	Sectors of activity, pages 11-25	
G4-9	Dimension of the organisation	Economic dimension, page 36; Annual financial report	
G4-10	Employees by type of contract, sex, geographical area, position	Employment and the management of diversity, page 66	
G4-11	Employees covered by collective contracts	Industrial relations, page 71	
G4-12	Description of supply chain organisation	The supply of goods and services, page 39	
G4-13	Significant changes compared with preceding report	New initiatives and acquisitions, page 12	
G4-14	Method of application of welfare principle or approach	The management systems, page 29	
G4-15	Adoption of external codes and principles in the economic, social and environmental areas	The management systems, page 29	
G4-16	Participation in category associations	Associations, page 74	
<b>3. Materiality and report perimeter</b>			
G4-17	List of companies included in the consolidated balance sheet	Accounting perimeter, page 9	
G4-18	Explanation of the process of definition of the content of the Sustainability report and the way in which the organisation implemented the reporting principles	Note on methodology, page 6	
G4-19	Material aspects identified	Materiality analysis, page 7	
G4-20	Material aspects inside the organisation	Materiality analysis, page 7	
G4-21	Material aspects external to the organisation	Materiality analysis, page 7	
G4-22	Modifications made to earlier reports	Earlier editions, page 9	
G4-23	Most significant perimeter changes	Accounting perimeter, page 9	
<b>4. Stakeholder engagement</b>			
G4-24	List of stakeholders	The SOL Group stakeholders, page 34	
G4-25	Principles for identifying stakeholders	The SOL Group stakeholders, page 34	
G4-26	Ways of involving stakeholders	Shareholders and investors, page 39; Suppliers, page 39; Customers, page 48; Human resources management policies, page 65; Authorities and Public Administration, page 72; Associations, page 74	
G4-27	Keys stakeholder engagement issues and response of the organisation		Not reported for 2015

Rif.	Description	References	Notes
<b>5. Report profile</b>			
G4-28	Accounting period		2015
G4-29	Date of publication of previous report		2015
G4-30	Accounting frequency		Annual
G4-31	Contacts and addresses for information on report		sustainability@solgroup.com
G4-32	Conformity to GRI guidelines		In accordance - Core
G4-33	External validation		None for this edition
<b>6. Governance</b>			
G4-34	Governance structure of the organisation	Governance and sustainability, page 28	
<b>7. Ethics and integrity</b>			
G4-56	Principles and values of the organisation	Mission, values and ethical principles, page 27	
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<b>a. Economic performance</b>			
G4-EC1	Directly generated and distributed economic value	The distribution of added value, page 38	
G4-EC2	Risks and opportunities relating to climate change		Not reported for 2015
G4-EC3	Coverage of obligations undertaken with definition of pension plan	Remuneration and social benefits, page 68	
G4-EC4	Significant financing received from the Public Administration		No significant financing
<b>b. Market presence</b>			
G4-EC5	Relation between standard remuneration of the newly employed and the local minimum	Remuneration and social benefits, page 68	
G4-EC6	Proportion of local senior management in main operating locations		Not reported for 2015
<b>c. Indirect economic impact</b>			
G4-EC8	Indirect economic impacts	Indirect economic aspects of the supply chain, page 40	
<b>d. Purchasing management</b>			
G4-EC9	Policies, practices and percentage of expenditure concentrated on local suppliers	The supply chain, page 40	
<b>ENVIRONMENTAL PERFORMANCE</b>			
<b>a. Energy</b>			
G4-EN3	Consumption of energy within the organisation	The use of energy, page 53	
G4-EN4	Consumption of energy outside the organisation	Transport, page 56	
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G4-EN7	Reduction of energy consumption of products and services	The use of energy, page 53; Climate protection, pages 54-55; The technical gases sector, pages 14-17	
<b>b. Water resources</b>			
G4-EN8	Water usage by source		Not reported for 2015
G4-EN9	Water sources significantly affected by water usage		Not reported for 2015
G4-EN10	Percentage and total volume of recycled and reused water	Water resources, page 60	

Rif.	Description	References	Notes
<b>c. Emissions, discharge and waste</b>			
G4-EN15	Greenhouse gas emissions	Greenhouse gases emissions, page 54	
G4-EN16	Indirect greenhouse gas emissions	Greenhouse gases emissions, page 54	
G4-EN17	Other indirect greenhouse gas emissions	Greenhouse gases emissions, page 54	
G4-EN19	Action to reduce greenhouse gas emissions	Climate protection products, page 55; On site installations, page 14; The energy production from renewable sources sector, page 25	
G4-EN20	Emission of substances that harm the ozone layer		No ozone-depleting substances emissions
G4-EN21	NOx, SOx and other atmospheric emissions	Emissions into the atmosphere, page 57	
G4-EN22	Water discharge	Water discharge, page 61	
G4-EN23	Refuse by type and disposal methods	Waste, page 58	
G4-EN24	Total number and volume of significant spillage of pollutants	No relevant spillages in 2015	
G4-EN25	Weight of refuse classified as dangerous under the Basel Convention transported, imported or treated	Waste, page 58	
G4-EN26	Characteristics of the biodiversity of the aquatic fauna and flora significantly affected by discharge and spills from the organisation	Biodiversity, page 63	
G4-EC4	Relevant financing from public authorities		No relevant financing in 2015
<b>d. Products and services</b>			
G4-EN27	Mitigation of environmental impact of products and services	Climate protection products, page 55; On site installations, page 14; The energy production from renewable sources sector, page 25	
G4-EN28	Proportion of products sold and their packaging recycled or reused	Packaging, page 59	
<b>e. Conformity</b>			
G4-EN29	Sanctions for failure to respect environmental laws and regulations		No relevant sanctions
<b>SOCIAL PERFORMANCE</b>			
<b>a. Employment</b>			
G4-LA1	Analysis of newly hired personnel and turnover, by age, sex and region	Employment and the management of diversity, page 66	
G4-LA2	Benefits provided for full-time, but not part-time workers		Not reported for 2015
G4-LA3	Return to work and levels of return after parental leave by sex		Not reported for 2015
<b>b. Health and safety in the workplace</b>			
G4-LA5	Percentage of workers represented on the health and safety Committee		Not reported for 2015
G4-LA6	Accidents at work and illnesses	Accidents Indices, page 45; Workers health, page 47	
G4-LA7	Workers exposed to a high risk of serious disturbances or illnesses		SOL Group's activities do not expose workers to high risks for health or illnesses
G4-LA8	Formal agreements with unions on health and safety		Where laid down by collective contracts
<b>c. Training and instruction</b>			
G4-LA9	Personnel training	Training and awareness, page 44; Training, development and communication, page 71	
G4-LA10	Programmes for the development of skills and career advancement	Human resources management policies, page 65; Training and awareness, page 44	
G4-LA11	Percentage of employees evaluated for performance and career development, divided by sex		Not reported for 2015

Rif.	Description	References	Notes
<b>d. Diversity and equal opportunities</b>			
<b>G4-LA12</b>	Composition of the organs of governance and breakdown of personnel by category of employees, sex, age, inclusion in protected categories and other diversity indicators	Employment and the management of diversity, page 66	
<b>G4-LA13</b>	Relation between basic salaries for men and women by category of employee		Not reported for 2015
<b>SOCIETY</b>			
<b>a. Local communities</b>			
<b>G4-S01</b>	Percentage of production units that involve local communities	The community, page 72	
<b>G4-S02</b>	Production units with significant current or potential impacts on local communities		Production activities do not have relevant impacts on local communities
<b>b. Anticorruption</b>			
<b>G4-S03</b>	Monitoring of corruption risk	Code of Ethics	
<b>G4-S04</b>	Personnel trained in prevention of corruption crimes	Code of Ethics	
<b>G4-S05</b>	Action taken following cases of corruption		No cases
<b>c. Anti-competitive behaviour</b>			
<b>G4-S07</b>	Number of legal actions for anti-competitive and anti-trust behaviour and monopoly practices with resulting sentences		No cases
<b>d. Conformity</b>			
<b>G4-S08</b>	Monetary and other sanctions for nonconformity with laws or regulations		No sanctions
<b>PRODUCT RESPONSIBILITY</b>			
<b>a. Customer health and safety</b>			
<b>G4-PR1</b>	Percentage of products and categories of services for which health and safety impacts have been evaluated	Product management, page 49	
<b>G4-PR2</b>	Number of nonconformities with regulations and voluntary codes concerning impacts on the health and safety of products and services		No non-conformities
<b>b. Labelling of products and services</b>			
<b>G4-PR3</b>	Information on products and services required by regulations and procedures	Product management, page 49	
<b>G4-PR4</b>	Number of cases of nonconformity with regulations or voluntary codes on information about products and services		No non-conformities
<b>G4-PR5</b>	Results of customer satisfaction studies		Not reported for 2015
<b>c. Respect for privacy</b>			
<b>G4-PR8</b>	Number of complaints in substantiated cases of privacy violation and loss of customer data		No complaints
<b>d. Conformity</b>			
<b>G4-PR9</b>	Significant monetary sanctions for nonconformity with laws or regulations on the supply and use of products and services		No relevant sanctions

## 8

## Glossary

**Accident:** a chance event that could lead to injury or material damage.

**Air separation:** process of separating out the gases contained in air by distillation, producing both liquid and gaseous products.

**Audit:** A systematic, independent and documented process for objectively evaluating to what extent the management criteria of reference have been satisfied.

**BS OHSAS 18001:** an international standard issued by the British Standards Institute that establishes the requirements of a health and safety management system. It allows organisations to be aware of and keep under control risks deriving from operations in normal and extraordinary conditions and to improve safety performance.

**Cold converter:** container with insulated vacuum chamber for highly refrigerated cryogenic gases, complete with interception, measuring and safety instruments.

**Conditioning:** a production operation that consists in taking gas from a secondary storage tank and compressing it in a gaseous or liquid state and transferring it to mobile containers. Conditioning also includes the sequence of operations carried out on the containers from when they arrive at the centre to storage of full containers ready for delivery.

**Cylinder basket:** steel structure containing a number of cylinders, normally 8 or 16, in a vertical position to facilitate their handling with normal forklift trucks.

**Cylinder bundle:** set of interconnected cylinders supported by a metal structure. The outlets of the cylinders are led to a single manifold.

**Cylinder:** container in steel or light alloy for compressed, liquefied or dissolved gases.

**EMAS (Eco-Management and Audit Scheme):** European Community regulation 761/2001. A voluntary instrument for implementing Community Environmental Policy aimed at continually improving environmental performance of the companies and businesses adopting it.

**Food safety:** the concept that food must not cause harm to consumers if prepared in accordance with its intended use.

**Frequency index:** ratio between the number of accidents and hours worked multiplied by 1 million. It measures the frequency of accident occurrence.

**Global Reporting Initiative (GRI):** a multi-stakeholder network instituted in 1997 and made up of companies, NGOs, associations of accountancy experts, business organisations and other international stakeholders involved in subjects relating to Corporate Social Responsibility. GRI's mission is to develop, supply and promote global reference guidelines for the drawing up of Sustainability Reports that describe the economic, environmental and social impacts that companies or organisations cause with their activities.

**Injury:** undesired event in the workplace that provokes bodily damage or objectively verifiable illness.

**IPPC (Integrated Pollution Prevention and Control):** Strategy instituted with Directive 2010/75/EU "Industrial Emission Directive (I.E.D.) for minimising the pollution caused by various sources throughout the EU. All types of installation listed in Appendix 1 of the Directive must obtain integrated authorisation from the authorities of the various countries. It is

based on the premise that the failure to adopt a common approach for controlling emissions into air, water and terrain could lead not to a reduction of pollution but to its transfer from one compartment to another.

**ISO 13485 standard (Medical devices – quality management systems):** an international standard that aims to maximise the probability that organisations operating in the medical devices sector satisfy the legal requirements existing at world level on quality management, and so supply safe and effective medical devices.

**ISO 14001 standard (Environmental Management):** an international standard that lays down the requisites for an environmental management system. It allows organisations to be aware of that and keep under control activities that have significant environmental impact, and improve their environmental performance.

**ISO 22000 standard (Food Safety Management Systems):** an international standard that defines the requirements for a food safety and hygiene management system.

**ISO 27001 standard (Information security):** an international standard that defines the requirements for setting up and running an information security management system (logical, physical and organisational security), with the aim of protecting data and information from threats of all kinds, ensuring the integrity, confidentiality and availability.

**ISO 50001 standard (Energy Management):** an international standard aimed at helping organisations improve their energy performance, increasing energy efficiency and reducing climate and environmental impact.

**Major accident:** event such as a serious spill, fire or explosion due to uncontrolled developments in activities in the presence of dangerous substances, that could cause grave danger for human health or the environment.

**Medical device (MD):** any instrument, apparatus, equipment, machine, device, plant, reagent in vitro or for calibration, computer software, material or other similar or related product for use, alone or in culmination, on persons for one or more specific purposes of diagnosis, prevention, control, therapy or attenuation of an illness; for diagnosis, control, therapy, attenuation or compensation of a wound or handicap; for studying, substituting or modifying anatomy or a physiological process; for intervening on conception where the main desired action is on or on the human body is not carried out with pharmacological or immunological means or through metabolism, but whose function can be aided by these means.

**Medical gas:** any medication consisting of one or more active gaseous substances that may or may not be mixed with excipient gases.

**Mobile container:** container for compressed, liquid, dissolved and cryogenic gases used for transporting products. Mobile containers are: cylinders, drums, gas cylinders, cylinder bundles, dewars, base units and portable units.

**Policy (quality, safety, environment):** general principles and guidelines of an organisation, formerly expressed by top management.

**Primary process units:** units where gases are produced from raw materials.

**Primary storage:** liquefied cryogenic gas container filled directly by the production plant. Quality, safety and environmental management system.

### Quality, Safety and Environment

**Management System (SHEQ/MS):** that part of the general management system that includes the organisational structure, planning, responsibilities, procedures, processes and resources for drawing up, implementing and maintaining active well-defined quality, safety and/or environmental policies.

### Raw materials – primary process units:

atmospheric air, for the production of oxygen, nitrogen and argon; natural gas, for the production of hydrogen and carbon dioxide; calcium carbide for the production of acetylene; ammonium nitrate for the production of nitrous oxide.

### REACH: EC regulation n. 1907/2006

(Registration, Evaluation, Authorization and Restriction of Chemicals). Its main aim is to improve the awareness of the dangers and risks deriving from chemical substances, aiming to attain a high level of protection of human health and the environment.

**Responsible Care:** a voluntary program of the world chemical industry based on the implementation of principles and conduct concerning the safety and health of employees and environmental protection, and the commitment to communicate the results obtained aiming for continual, significant and tangible improvement.

**Sale equipment:** technical/technological equipment purchased from third parties and supplied for use to customers as part of a service, but destined to remain the property of SOL; for example mobile containers, cold converters etc.

**Secondary process units:** units where gases are conditioned, normally using gases coming from primary process units, into their physical form (which may be compressed gas or cryogenic liquid) in the containers (cylinders,

cylinder bundles, drums or tanks) best suited for distribution to end users. Some units also produce pure and high purity gas mixtures.

**Secondary storage:** liquefied cryogenic gas container filled by tankers, normally installed in secondary process units.

**Severity index:** ratio between days of absence due to injury and hours worked multiplied by 1 million. It measures the severity of injuries.

**Seveso Directive (2012/18/EU and later modifications):** European regulation aimed at preventing and controlling the risk of serious accidents. It governs industrial activities that involve the stocking and/or use of certain quantities of dangerous substances.

**Stakeholder:** all categories of subjects, private or public, individual or collective, internal or external, that can influence the success of a business or whose interests are involved in business decisions: customers, suppliers, investors, local communities, employees, unions, public administration, future generations etc.

**Steam reforming:** process in which methane reacts with steam, in the presence of a catalyst, to produce hydrogen and CO<sub>2</sub>.

### Sustainability (see Sustainable development)

**Sustainable development:** development that can satisfy current economic, environmental and social needs, without compromising the chances of future generations being able to satisfy theirs.

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