## Sustainable Development Report

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Introduction



### . Introduction

Sustainable Development seeks to bring together, in one approach, requirements that have sometimes been considered incompatible: long-term wealth creation, respect for human beings and environmental protection. These themes are the three pillars of sustainable development.

Since its creation, Air Liquide has had a long-term approach to its activities. One business, one name, steady growth, long-lasting relations with its customers and the strong loyalty of employees and shareholders demonstrate this commitment.

Air Liquide therefore developed a sustainable development model, specific to the Company, with four dimensions formalized in 2003 by a commitment from Benoît Potier, the Group's Chairman and CEO:

- creating value for shareholders by developing the Company's business performance over the long term and with transparency;
- developing the potential of men and women of the Company in their commitment to common objectives;
- preserving life and the environment in the Group's operations and at its customers' sites;
- **innovating** for tomorrow to guarantee the growth of the Company and its customers.

This Sustainable Development approach relies on the reporting of over 170 indicators, presented in the following pages, to measure the Group's performance in the four areas that now comprise this approach. These indicators are collected worldwide and are published each year at the same time as the financial indicators in the Reference Document.

During the 2005 to 2009 period, the Group set objectives concerning important indicators on sustainable development. These objectives especially concerned long-term shareholder remuneration, the place of women in the Company, training, safety, the energy performance of production units and the filing of international patents.

After the unprecedented economic slowdown that characterized the end of 2008 and the year 2009, the year 2010 appeared as a year of transition. In the framework of the ALMA 2015 corporate program, Air Liquide is placing Performance and Responsibility at the heart of its ambition. The Group has undertaken a reflection to define objectives for the 2011-2015 period concerning Key Responsibility Indicators. These Responsibility objectives, which will take into account a certain number of elements in the Sustainable Development approach, will be an integral part of the Group's strategy in the same way as the Performance objectives of growth in revenues, efficiency improvement and return on capital.

Just like financial reporting, extra-financial reporting or Sustainable Development has been reviewed each year since 2003 by the Statutory Auditors. You will find, at the end of the Sustainable Development Report, the report of the Statutory Auditors who, each year, conduct a mission on a selection of indicators not only on the corporate level but also at a dozen industrial sites or Human Resources Departments of subsidiaries. This year, this mission concerned five large industrial sites or pipeline networks for energy and environmental data, six units for safety data and six Human Resources Divisions of subsidiaries for indicators in this area.

This review is not a legal obligation today. It reflects Air Liquide's commitment to give more value to all these indicators.

Creating value for shareholders



### Creating value for shareholders

The Group wished to include the relationship with its shareholders in its Sustainable Development approach. Air Liquide and its shareholders have had a relationship of confidence for over a century and the Group puts its shareholders at the heart of its strategy with a single objective: combining performance and responsibility by increasing the value of its shareholders' investment through sustained and regular growth of profits and dividends over

the long term. Shareholder loyalty has accompanied Air Liquide's strategy over the long term.

Becoming an Air Liquide shareholder also means backing a responsible actor that helps protect life and the environment and that demonstrates its commitment to human, social and societal issues

#### THE SHAREHOLDERS' CHARTER

Air Liquide has formalized these privileged and long-term relationships with its shareholders in the "Shareholders' Charter", which is based on four commitments:

- consideration and respect for all shareholders;
- · remuneration and increased value of their investments in the long term;
- · listening to and informing shareholders;
- service provided to the shareholders, notably thanks to a dedicated service within the Company.

#### BALANCED SHARE OWNERSHIP

Air Liquide's share ownership is evenly balanced between individual shareholders and French and non-French institutional investors. 390,000 individual investors hold 36% of the capital. French and non-French institutional investors represent respectively 23% and 40% of the capital.

At the end of 2010, the share of capital held by employees and former employees of the Group is estimated at 2.1%, of which 1.6% (in the meaning of article L. 225-102 of the French Code of Commerce) corresponds to shares subscribed by employees during employee reserved capital increase operations or held through mutual funds.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Registered capital	29%	27%	28%	30%	31%	32%	37% <sup>(a)</sup>	33%	32%	34%
Capital eligible for loyalty bonus	26%	24%	24%	24%	25%	26%	26%	26%	25%	25%
Individual shareholders	42%	40%	40%	39%	38%	38%	37%	38%	38%	36%
French institutional investors	20%	21%	23%	24%	25%	24%	30%	26%	26%	23%
Non-French institutional investors	35%	37%	35%	36%	36%	37%	32%	35%	36%	40%
Treasury shares	3%	2%	2%	1%	1%	1%	1%	1%	>0%	<1%

<sup>(</sup>a) In 2007, the share of capital owned by institutional investors holding direct registered shares increased notably due to one important institutional investor that sold its shares in 2008.

Creating value for shareholders

#### AIR LIQUIDE, A LONG-TERM INVESTMENT

Since its creation in 1902, Air Liquide has successfully grown, thanks to its relationship of confidence with its individual shareholders and institutional investors.

Since it was first listed on the French Stock Exchange in 1913, Air Liquide has always shown a profit.

A policy of sustained distribution and regular allocation of free shares has permitted the shareholder to see his or her initial investment increase.

Air Liquide creates value by developing its activities and optimizing its performance over the long run. Over the last 30 years, Air Liquide's revenue has shown an average annual growth of 7.2%. This growth has been profitable: the Group's earnings have followed a similar trend, with an annual average growth of the net profit per share of 8.6%.

During the last 10 years, nearly 50% of earnings have been distributed to shareholders. Over the same period, the dividend has had an average annual growth of 9.7%.

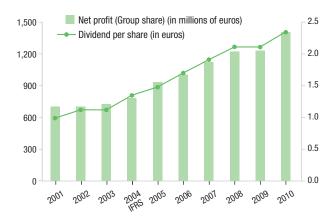
To further increase the investment value of Air Liquide shares, subscribing to registered shares permits shareholders who chose this option to benefit from a privileged relationship with Air Liquide and a loyalty bonus: +10% on the amount of dividends received and +10% on the number of free shares granted. This loyalty bonus is granted to shareholders who have held direct registered or intermediary registered shares for two calendar years and who still hold them on the date of dividend payment and the allocation of free shares.

During the last 10 years, the return rate for an Air Liquide shareholder was on average +10.2% per year, with gross dividends reinvested in shares, allocations of free shares and loyalty bonuses to registered shareholders.

	2001	2002	2003	2004 IFRS	2005	2006	2007	2008	2009	2010
Net profit (Group share) (in millions of euros)	702	703	726	780	933	1,002	1,123	1,220	1,230	1,404
Net profit per share (in euros) (a)	2.44	2.47	2.57	2.78	3.34	3.54	3.99	4.40	4.40	4.99
Dividend per share (in euros) (a)	0.99	1.29	1.12	1.35	1.48	1.70	1.91	2.11	2.11	2.35

<sup>(</sup>a) Based on the average annual number of shares (excluding treasury shares) and adjusted to account for increases in capital performed via capitalization of reserves or additional paid-in capital, cash subscription and the two-for-one share split on June 13, 2007.

#### **NET PROFIT AND DIVIDEND**



More information on Air Liquide and its shareholders is available in the Shareholder's Guide or in the Shareholders section at www.airliquide.com.



### A social enterprise and corporate citizen

43,600 men and women in 80 countries compose multicultural teams with a host of skills. Air Liquide is involved in promoting diversity, facilitating and accelerating knowledge transfer,

motivating and involving its employees and encouraging a social and human commitment, notably through the Air Liquide Foundation.

#### A SOCIAL ENTERPRISE

#### **Diversity / Parity**

Diversity is one of the pillars of Air Liquide's Human Resources policy. The Group is strongly committed to fighting all forms of discrimination (nationality, gender, age, experience, ethnic origin, educational background). The diversity of its employees makes it possible to better understand different viewpoints, update thought processes and broaden recruitment visions in order to attract the best talent. Air Liquide operates on diverse and complex markets. Diversity helps adapt to this complexity while increasing performance. The fact that 27 different nationalities were represented among the Group's senior managers in 2010 is a considerable asset from this viewpoint and continues to be a strong growth track for Air Liquide.

The Group's objectives are to continue to increase diversity among its employees and to seek a better, more equitable division of responsibilities between men and women while placing more emphasis on the many cultures Air Liquide is composed of. The five poles concerning diversity in the Group are: nationality, gender, educational background, age and the handicap. In the Human Resources Division, a manager with his team is in charge of steering the Group's diversity projects. Another person is responsible for highlighting the knowledge and competencies of seniors in the Group.

Equality between men and women is an essential point in the expression of this diversity. For the last several years, Air Liquide has made commitments accompanied by the implementation of a global action plan. For example, between 2003 and 2010, the percentage of women who were hired for Managers and Professionals positions rose from 14% to 24%, an increase of over 70%. This 24% figure for women Managers and Professionals in the Group is very close to the global percentage of women in the Group (25%) and illustrates the good representation of women in Air Liquide's management. In addition, women now represent 40% of employees considered high potential, which is the highest percentage reached by the Group in this area. 15 Executive Management positions in the subsidiaries are held by women

in the Group; the number of women in this type of position has increased fivefold since 2007. Moreover, two women are now members of the Group's Board of Directors.

These results are the fruit of a concrete, rigorous and global human resources strategy based on four focuses:

#### 1. Recruiting:

Strengthening the place of women in the Group, in particular through hires of Managers and Professionals. In this area, the Group's objective is to reach 33% women among Managers and Professionals by 2015.

### 2. Developing careers and increasing responsibilities for women in the Company:

- For every management position that becomes available, Human Resources examines the application of at least one woman among the applicants.
- Regular Human Resources review dedicated to women with high potential bring together the Group's Executive Committee.
- A meeting before and after maternity leave has been organized in a certain number of units in France.

#### 3. Communicating with and involving all the managers:

In the framework of Air Liquide's policy on promoting parity, the hiring and career development of women, and strengthening their place and responsibilities in the Company, a program on awareraising and exchanges on "men/women" differences and the benefits that parity induces has been organized in the Group since 2007, aimed at managers. More than, 700 managers in the Group have followed this program.

#### 4. Better balancing professional and private life:

The CESU (Universal Service Employment Check), whose aim is to facilitate childcare in the home, has been implemented for certain units in France since 2007 for men and women in the Group who have young children.

The Diversity Charter that Air Liquide signed in France is available on this organization's website and is an illustration of the Group's commitment to diversity.

Air Liquide's general ambition is to have employees who are representative of the environment in which they work.

#### **Training**

Air Liquide is committed to training its employees on a regular basis. Training is an integral part of the Company's growth. It allows employees to work safely as well as improving their performance, contribution and employability. In 2010, 74% of the Group's personnel had at least one training session during the year. The average number of training days per employee and per year reached three days in 2010.

The Group has invested in better professional qualifications and training programs for young people to ease their integration into the business world. As a result, 294 young people have benefited from work-study contracts in France and abroad, combining theoretical learning in their university or school and a practical internship at Air Liquide.

In 2009, Air Liquide founded its corporate university. Based on a decentralized model that permits a very large number of employees to be trained, with modern pedagogic techniques like e-learning, it has a dual objective:

- proposing about 20 specific programs, ranging from integrating new employees to developing leadership capacities, as well as "business" training programs given by the different business lines;
- formalizing and rolling out the training processes and disseminating good practices that go hand in hand with the Group's training dynamic.

Since its creation, the Air Liquide University has already trained over nearly 3,000 Group employees.

#### Remuneration

Employee remuneration is based on local market conditions, internal equity and applicable legislation. It is generally made up of a base salary plus complementary compensation elements. In 2010, 51% of employees received an individual variable share in their remuneration. For some of the employees, this individual variable share includes sustainable development objectives: they focus on subjects such as safety, energy efficiency and diversity.

In addition, remuneration can also include benefits such as profitsharing and medical expenses. In 2010, 98% of the employees benefited from some sort of social coverage through the Group.

#### Health

Air Liquide is particularly concerned with improving its employees' working conditions. This is notably demonstrated through preventive actions after risk analyses at work stations and the implementation of specific rules of the Group's Industrial Management System (IMS). In addition, studies on work station ergonomics are conducted in the framework of the preventive approach. In Italy, for example, an ergonomic study was carried out on the transportation of cylinders in forklifts in a gas filling center. This study led to the improvement of material handling and comfort of use of lifts as well as to a better prevention of professional illnesses such as muscular-skeletal disorders (MSD).

As for pandemics, there is a specific crisis management procedure integrating local legal obligations and the Group's recommendations. This procedure was implemented during the influenza A (H1N1) epidemic in 2009.

In addition, part of Air Liquide's activities is focused on disinfection, through the Group's subsidiaries that are specialized in this area, Schulke and Anios, that make their products available to the Group's units.

Concerning AIDS, local initiatives, notably in the South African and Senegalese subsidiaries, help raise the awareness of employees on this subject.

Finally, there are training programs in Air Liquide's training catalogue to promote the Group's rules and good practices on health, safety and risk management at work stations.

#### The handicapped

For Air Liquide, diversity and equal opportunity also mean better insertion of handicapped employees into its teams, and through subcontracting to specialist companies or associations. In 2010, handicapped employees represented 1.2% of the Group's personnel.

The three agreements the Company signed with social partners in France are in line with this commitment.

Other actions have been implemented and are currently underway, in particular, offering internships or on-the-job training programs for handicapped people, maintaining handicapped workers in their work place at Air Liquide and increasing cooperation with aid-through-work centers. This approach is coordinated in France by the Mission Handicap Air Liquide. This program also conducts awareness-raising operations in-house. So, each year in November, on the occasion of the week for the employment of the handicapped in France, Air Liquide mobilizes to fully take part in this event. This week of awareness-raising and actions permits employees to acquire a better understanding of handicaps and to look at differences in a new way.

#### Social dialogue

The European Works Council has 28 employee representatives from 15 countries (a). The composition of the Council evolves with the Group's acquisitions, the expansion of the European Union and according to the rules established by the Council's constitutional agreement. The Council meets once a year chaired by a member of the Executive Committee. The main themes discussed during this meeting are: safety, the Group's current activities, the annual financial statements and Air Liquide's strategy.

Today, 79% of Air Liquide's employees have access to a representation, dialogue or consultation structure.

### **Employee awareness-raising on sustainable development**

Many initiatives are created at Air Liquide to raise employee awareness on sustainable development issues and encourage them to promote them in their daily activities. "Earth Day", "Water Day" and the "Better and Cleaner" Olympiads between Research Centers are a few examples.

### THE "BETTER AND CLEANER" CHALLENGE BETWEEN AIR LIQUIDE'S RESEARCH CENTERS

The "Better and Cleaner" Olympiads, focused on sustainable development and launched at the end of 2009 between all of Air Liquide's Research Centers, had strong participation throughout 2010.

The purpose of this challenge is to raise awareness at the Research Centers on environmental questions by bringing them together around a common project whose goal is to reduce the consumption of utilities and greenhouse gas emissions. This competition should make it possible to decrease the carbon footprint of each unit, while finding the best environmental practices developed by researchers worldwide.

The evaluation of each center's annual environmental performances is based on the monitoring of three key indicators for which standards of excellence were defined: paper consumption, water consumption and the frequency of air travel for business.

The best global performance and the greatest improvement compared to the previous year are both rewarded. Three outstanding local initiatives, because of their role in lowering environmental impact, in sustainable development, or their social benefits, are also selected.

#### A CORPORATE CITIZEN

#### **Principles of action**

In 2006, the Group formalized its Principles of Action in a document that explains its approach to all its key stakeholders (customers, personnel, suppliers, partners and local communities). Available in 16 languages, this document was distributed to all the Group's units and can be consulted on the website in French and English: www.airliquide.com

### Social and Environmental Responsibility Policy

As a complement to the Principles of Action, the Group's policies were completed and regrouped in 2009 in a global Reference Document called the BLUEBOOK. This Reference Document is accessible to all the Group's employees on the internal information systems that they usually use. These policies are in the form of procedures, codes and reference guides.

In the BLUEBOOK, the Social and Environmental Responsibility Policy defines the commitments taken by the Group in the framework of its activities to promote the respect for and safety of men and women, the protection of the environment, ethics and participation in the economic and social environment of the regions in which it operates. In particular, it is specified that Air Liquide respects human rights and the dignity of its employees, subcontractors, temporary workers and suppliers. In this framework, the Group's units notably exclude any form of discrimination, harassment, the use of forced labor or child labor.

This Social and Environmental Responsibility Policy has implemented a coherent Sustainable Development approach on every level of the Company and defines the orientations on this subject for the subsidiaries and departments. It is available on the website in French and English: www.airliquide.com

#### **Employee Codes of conduct**

The Group's subsidiaries are encouraged to implement local Codes of conduct. This decentralized approach combines respect for local customs and regulations and Air Liquide's ethical commitment. It also helps the subsidiaries to embrace the Group's ethical principles by writing their own Codes of conduct themselves in their working language. As a result, at the end of 2010, 71% of the Group's employees belonged to subsidiaries that have a local Code of conduct.

<sup>(</sup>a) Austria, Belgium, Denmark, France, Germany, Great Britain, Greece, Italy, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden.

The implementation of these Codes of conduct is supported by the Group Guidelines, which are a reference guide to Air Liquide's Social and Environmental Responsibility Policy. These Group Guidelines are based on 10 fundamental principles:

- respect for laws and regulations;
- respect for human beings: safety and hygienic conditions in the workplace, prevention of discriminatory actions, respect for third parties;
- respect for the environment;
- respect for competition law;
- respect for rules on insider trading;
- prevention of conflicts of interest: ties with a competitor, customer or supplier, respect for rules on corruption;
- protection of Air Liquide's activities: protection of information, property and resources;
- transparency and integrity of information;
- internal controls and audits;
- implementation of Codes of conduct.

Details on these 10 fundamental principles are available on the Group's website.

These Codes of conduct demonstrate the Group's commitment to respect the regulations concerning its economic activity but also ethical principles such as social rights and the fight against discrimination and harassment.

In addition, since 2007, a Group Ethics Officer has been responsible for providing advice and assistance to the units in applying their Codes of conduct. He also handles all the questions submitted by employees on implementing these Codes of conduct.

#### Respect for competition law

Instructions and Codes on the central level were established as to proper behavior concerning respect for competition law, especially in Europe and the United States. The most important rules on competition law are also included in the employees' local Codes of conduct. For some of the Group's activities, healthcare in particular, specific Codes of conduct have been developed on competition law as well.

Finally, awareness-raising meetings on compliance with competition law are regularly held throughout the Group. In 2010, meetings like these were held in several European and Asian units.

#### **Anti-corruption Code of conduct**

In 2009, the Group formalized an anti-corruption Code of conduct that was made available to all the subsidiaries. This Code, which is linked to the Social and Environmental Responsibility Policy of the BLUEBOOK, provides a reminder of the laws on the fight against corruption and deals with relations with intermediaries, particular cases such as mergers, acquisitions and partnerships, types of payments requiring particular attention, as well as administrative and accounting traceability requirements.

To strengthen the rollout of this anti-corruption Code of conduct throughout the Group, Air Liquide launched a training program in 2010 dedicated to disseminating knowledge of the anti-corruption Code of conduct and its good practices to the Group's employees. This training course is now an integral part of the Air Liquide University program and is specifically aimed at sales and purchasing teams as well as managers. It has been gradually rolled out throughout the Group.

### Corporate philanthropy – the Air Liquide Foundation

Social and human commitment is an ongoing concern for Air Liquide. Since its very beginning, the Group has carried out philanthropic actions, especially in the preservation of life and the environment

The calling of the Air Liquide Foundation, created in 2008, is to encourage and develop these initiatives. It has a worldwide scope and supports projects in the 80 countries where the Group operates.

The Foundation has three missions:

- in the environmental field, it supports scientific research on the preservation of our planet's atmosphere;
- in the healthcare and respiration field, it supports scientific research on improving the human respiratory function;
- in the area of Micro-Initiatives, the Foundation encourages proximity actions with local anchoring in the regions of the world where the Group is present and in which it has expertise, for example, in education, training, etc. Each Micro-Initiative is followed by a sponsor, an Air Liquide employee who is a volunteer. The Group's employees who wish to get involved can sponsor a project that arouses their interest and to which they are geographically close. Today, over 100 Group employees are involved alongside the Foundation.

With a budget of nearly 3 million euros over five years, the Air Liquide Foundation provides an intervention framework for the philanthropic initiatives that are presented to it and that meet its missions' criteria. It provides them with financial, material and human resources.

Its Board of Directors is composed of nine members, five members from the Air Liquide Group, an employee representative and three outside experts chosen for their expertise in the Foundation's three areas. It is chaired by Benoit Potier, Chairman and CEO of the Air Liquide Group. The Board of Directors is assisted in its functions by a Project Selection Committee that examines the projects submitted about four times a year. The Committee is composed of seven members including a representative of the Shareholders Communication Committee.

Projects can be submitted on line, in French or in English, on the Foundation's site, www.fondationairliquide.com.

### In 2010, the Air Liquide Foundation supported 33 projects, three research projects in the environment and healthcare sectors and 30 Micro-Initiatives.

Among the research projects, the Foundation is supporting the work of the Carnegie Institution for Science, a private not-for-profit research organization based in the **United States**. The study carried out by Carnegie's Department of Global Ecology concerns evaluating ammonia concentration in the atmosphere and understanding the phenomena responsible for its variations. This study will help refine existing climate simulation models because ammonia acts as a marker for certain atmospheric phenomena.

In the medical field, the Air Liquide Foundation is supporting the Centre Hospitalier Universitaire of Grenoble in **France** in its research program on the influence of chronic obstructive lung disease and sleep apnea syndrome on cardiovascular risks.

In the framework of its support for Micro-Initiatives encouraging local development, the Air Liquide Foundation joined forces with the Virlanie Foundation for the renovation of an itinerant school for the street children of Manila, in the **Philippines**. In **Senegal**,

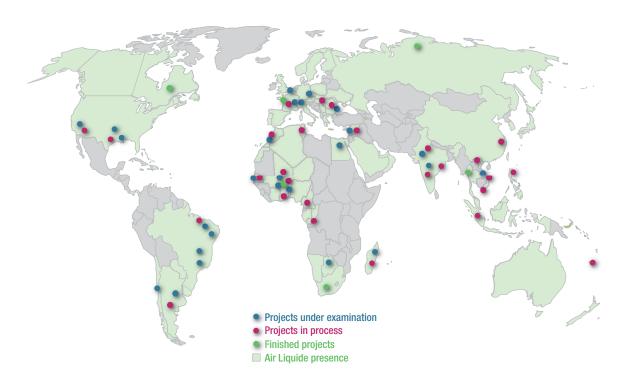
it helped in the construction and complete equipping of four classrooms in a high school in Sandiara, an initiative launched by the Senegalese association *Passeport pour l'avenir*. The Foundation, working with two associations, *Enfance Maghreb Avenir* and *Initiatives*, contributed to the renovation of two middle schools in Casablanca, **Morocco**. In **Argentina**, in the city of Neuquèn, the Foundation permitted the *Fundación Leer* to create libraries in four schools so that 1,400 students could improve their reading and writing skills.

In Tripoli, in **Lebanon** and in Deir Ez-Zor in **Syria**, over 100 micro-entrepreneurs could learn the basics of management techniques developed by the *Institut Européen de Coopération et de Développement*. These techniques enable them to develop and continue their economic activity over the long term. The Air Liquide Foundation also supports reinsertion actions for people in precarious situations through work and training. In **Romania**, for example, it is supporting the *Ateliere fara Frontiere* association, which trains people excluded from society in computers in its workshop in Bucharest. They can then be hired to repair computers and printers. The revamped computer equipment is then made available to Romanian NGOs. In **France**, the Foundation equipped an office automation training workshop for young people in difficulty.

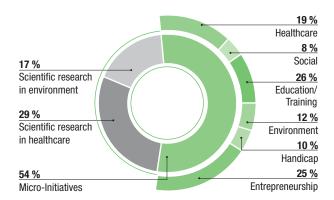
Apart from these Air Liquide Foundation actions, the Group's units can carry out their own philanthropic projects. For example, in 2010, Air Liquide Canada and its employees gave over 100,000 euros to the *Centraide du grand Montréal* association, which fights against all forms of poverty in **Canada**. Following the earthquake that devastated Port-au-Prince in **Haiti** in January 2010, the Air Liquide teams in the Americas zone contributed their support by supplying medical oxygen, a critical gas for emergency first aid. In **Chile**, the Air Liquide subsidiary mobilized to help the victims of the earthquake that struck the country in February 2010.

Air Liquide Medical Systems, a unit specialized in respiratory assistance materials, provided equipment to rescue teams, helping victims of the floods that occurred in **Pakistan** in August 2010.

#### BREAKDOWN OF THE AIR LIQUIDE FOUNDATION PROJECTS WORLDWIDE IN 2010



#### **BREAKDOWN BY MISSION OF THE FOUNDATION**



### A RESPONSIBLE COMPANY VIS-À-VIS ITS SUPPLIERS AND SUBCONTRACTORS

#### **Subcontracting**

The total amount of subcontracting of the Air Liquide Group was 1,348 million euros in 2010. Subcontracted activities are mainly those that are not core businesses of the Group, that require specific resources or that can be called on to handle production overload.

Since 2008, Air Liquide has published the number of accidents of its subcontractors and temporary workers. In 2010, there were 155 lost time accidents of this type.

#### Responsible procurement in the Group

The Company is not only responsible from the economic viewpoint. It also has an environmental, social, societal and ethical role. Air Liquide's responsible procurement approach is in line with this evolution. It is an integral part of the Group's Sustainable Development approach.

The Group's responsible procurement policy makes use of several tools:

■ First, the **buyers' Code of conduct**, which is a code that is integrated into the Group's purchasing policy (one out of the 12 policies of the BLUEBOOK, presented in the Social and Environmental Policy paragraph of this report) spells out the ethical principles of sustainable development on which procurement is based. Translated into 13 languages, it specifies that suppliers must be transparently and fairly

evaluated and that they are bound to respect Air Liquide's sustainable development commitments.

- In addition, sustainable development clauses are being gradually included in certain Group framework contracts. These clauses allow for the possibility of conducting external audits at the suppliers' and subcontractors' concerned. They also include reporting elements for the supplier, in particular on safety and energy and water consumption.
- Since 2009, the responsible procurement policy has been strengthened by the distribution of a **sustainable development questionnaire**, now accessible to all the Group's buyers who are required to present it to the new major suppliers. Certain answers are considered eliminatory: for instance, the absence of a commitment on health and safety, of regular inspections of high-risk tools, of respect for local legislation on minimum wage and finally, of the measurement of energy consumption.

Air Liquide is developing, with all its subsidiaries, this evaluation approach concerning its suppliers, with the support of a partner specialized in responsible procurement. After a first campaign in 2009 with 50 suppliers, a second evaluation campaign covering nearly 200 suppliers was launched in 2010. The evaluation includes the following themes: the environment, social issues, the ethics of business and these suppliers' own procurement policy.

In 2010, **risk mapping** on procurement was created to target critical suppliers and to determine specific audits at these suppliers.

#### **STOREBRAND**

This Norwegian major investment fund has positioned Air Liquide among the best companies for its environmental and social performances.

#### **ETHIBEL SUSTAINABILITY INDEX**

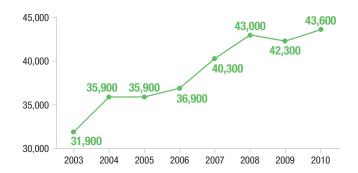
Ethibel, a European extra-financial rating agency, that is part of the VIGEO group, selected Air Liquide as one of the leaders in sustainable development for the sixth consecutive year, including it in its "Ethibel Excellence" index.

#### INDICATORS FOR THE GROUP AS A WHOLE

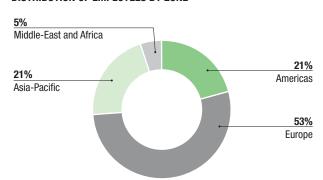
Employees <sup>(a)</sup>	2005	2006	2007	2008	2009	2010
Group employees	35,900	36,900	40,300	43,000	42,300	43,600 *
Women	8,310	8,670	9,630	10,300	10,300	11,100
in %	23%	23%	24%	24%	24%	25%
■ Men	27,590	28,230	30,670	32,700	32,000	32,500
in %	77%	77%	76%	76%	76%	75%
Joining the Group (b)				19.2%	10.5%	15.1%
Leaving the Group (c)				12.5%	12.2%	11.9%
% of employees having resigned during the						
year <sup>(d)</sup>	3.7%	4.8%	5.0%	5.0%	3.2%	4%

- (a) Employees under contract, excluding temporary employees.
- (b) Hiring or integration due to acquisitions. The percentage is based on the number of employees as of December 31 of the preceding year.
- (c) Retirement, resignations, lay-offs, departures due to disposals... The percentage is calculated based on the number of employees as of December 31 of the preceding year.
- (d) Since 2009, calculated on the number of employees as of December 31 of the preceding year.
- \* Indicator verified by the statutory auditors in the framework of limited assurance.

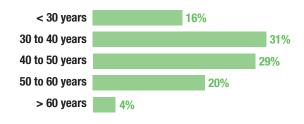
#### **DISTRIBUTION OF EMPLOYEES OVER 8 YEARS**



#### **DISTRIBUTION OF EMPLOYEES BY ZONE**



#### **DISTRIBUTION OF EMPLOYEES BY AGE**



Parity and Diversity	2005	2006	2007	2008	2009	2010
Parity						
% women among Managers and Professionals	17%	18%	19%	22%	24%	24%
% women among Managers and Professionals hired during the year	28%	29%	30%	29%	29%	29% *
% women among employees considered high potential	24%	27%	32%	32%	36%	40%
Number of nationalities						
Among expatriates	36	40	40	48	46	53
Among senior managers	20	23	22	22	25	27
Among employees considered high potential	40	43	44	42	47	46

Indicator verified by the Statutory Auditors in the framework of limited assurance.

	2005	2006	2007	2008	2009	2010
Training						
% total payroll allocated to training	About 3%	About 3%	About 3%	About 3%	About 2%	About 2%
Average number of days of training per employee and per year	2.6 days	2.7 days	2.9 days	3.1 days	2.4 days	3.0 days * (b)
$\%$ employees who attended a training program at least once during the year $^{\mbox{\tiny (a)}}$	67%	70%	68%	71%	71%	74%
Remuneration						
% employees with an individual variable share as part of their remuneration	41%	43%	49%	51%	50%	51%
Performance review						
% employees who have had a performance review meeting with their direct supervisor during the year	72%	70%	71%	68%	73%	76% * <sup>(c)</sup>
% employees who have had a career development meeting with the HR Department during the year		13%	20%	16%	14%	15%
Ethics						
% employees belonging to a unit with a local Code of conduct				55% <sup>(d)</sup>	67% <sup>(d)</sup>	71%
Social performance						
Average seniority in the Group	12 years	12 years	11 years	10 years	11 years	10 years
% handicapped employees (e)	1.3%	1.3%	1.2%	1.2%	1.2%	1.2%
% employees having access to a representation / dialogue / consultation structure	74%	77%	83%	81%	82%	79%
% employees belonging to a unit at which an internal satisfaction survey was conducted within the last three years <sup>(f)</sup>	56%	71%	64%	58%	37%	43%
% employees with benefits coverage through the Group (9)	98%	97%	98%	98%	97%	98%
Employee shareholders						
% capital held by Group employees (h)	1.2%	1.1%	1.1%	1.0%	1.4%	1.6%
% Group employees that are shareholders of L'Air Liquide S.A.	About 60%	About 50%	About 50%	Over 40%	Over 60%	Over 60%

<sup>(</sup>a) Calculated in average number of employees during the year.

<sup>(</sup>b) 22.5 hours a year according to the new calculation method in hours (base: 1 day = 7 hr. 30 min).

<sup>(</sup>c) In 2010, calculated on the basis of employees with "long-term contracts".

(d) Value revised following the 2010 reporting.

<sup>(</sup>e) For the countries where regulations allow this data to be made available.

<sup>(</sup>f) Indicator for units of over 300 employees.

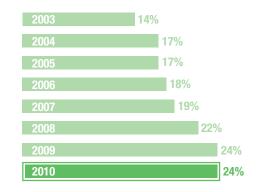
<sup>(</sup>g) Includes notably retirement benefits.

<sup>(</sup>h) In the meaning of article L. 225-102 of the French Code of Commerce.

\* Indicator verified by the Statutory Auditors in the framework of limited assurance.

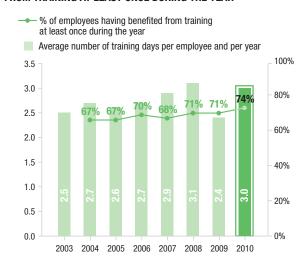
#### **Parity**

### PERCENTAGE OF WOMEN AMONG MANAGERS AND PROFESSIONALS OVER 8 YEARS



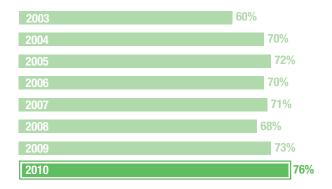
#### **Training**

#### AVERAGE NUMBER OF TRAINING DAYS PER EMPLOYEE AND PER YEAR / PERCENTAGE OF EMPLOYEES HAVING BENEFITED FROM TRAINING AT LEAST ONCE DURING THE YEAR



#### **Performance review**

#### PERCENTAGE OF EMPLOYEES WHO HAVE HAD AN ANNUAL PERFORMANCE REVIEW WITH THEIR DIRECT SUPERVISOR DURING THE YEAR





### Preserving life and the environment

#### **SAFETY**

Continuously and durably improving the health and safety in the workplace of its employees and subcontractors is one of Air Liquide's major challenges, which is expressed by the keyword "zero accident" on each site, in each region, in each unit. Employees are mobilized through active communication on this objective. In addition, safety objectives are part of the variable remuneration of the Group's senior managers.

In 2010, Air Liquide added another safety indicator: the average number of days of lost time per accident, meaning the average number of calendar days of lost time per accident for Air Liquide employees, excluding death. In 2010, this indicator was estimated

at 16 days. This indicator takes into account the average seriousness of lost-time accidents.

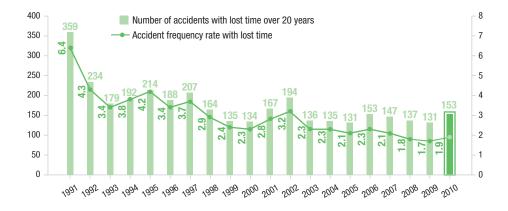
The Group's accident frequency rate with lost time in 2010 was 1.9. Although over the last 20 years, this rate has been among the best recorded by the Group, it nevertheless represents an increase compared to 2009. As a result, actions to consolidate the rollout of the IMS (Industrial Management System), to strengthen the involvement of managers and to more strongly raise awareness in the employees about safety were implemented as of the end of 2010 and will be continued throughout the year 2011.

#### SAFETY INDICATORS FOR THE GROUP AS A WHOLE

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
167	194	136	135	131	153	147	137	131	153 <sup>(a)</sup>
2.8	3.2	2.3	2.3	2.1	2.3	2.1	1.8	1.7	1.9 *
							154	148	155 <sup>(d)</sup>
	167	167 194	167 194 136	167 194 136 135	167 194 136 135 131	167 194 136 135 131 153	167 194 136 135 131 153 147	167     194     136     135     131     153     147     137       2.8     3.2     2.3     2.3     2.1     2.3     2.1     1.8	167     194     136     135     131     153     147     137     131       2.8     3.2     2.3     2.3     2.1     2.3     2.1     1.8     1.7

- (a) Fatal accidents: one in 2010, none in 2009 and 2008.
- (b) Number of accidents involving lost time, of at least 1 day, per million hours worked by Group employees. Accidents defined as recommended by the International Labor Office.
- (c) Personnel working in the framework of a contract with Air Liquide or on a Group site, or on a customer site or as a delivery vehicle driver.
- (d) Including one fatal accident.
- \* Indicator verified by the Statutory Auditors in the framework of limited assurance.

#### NUMBER OF ACCIDENTS WITH LOST TIME OVER 20 YEARS



#### **ENVIRONMENT**

Over 40 industrial and medical gas applications preserve life and the environment for the Group's **customers**: these applications represent **42% of revenue** <sup>(a)</sup>.

In its **production** activities, the main elements concerning the environmental data in 2010 are as follows:

- The volumes of air gases produced very considerably increased compared to 2009. As a result, electricity consumption, mainly used by the air separation units, rose, as well as indirect CO₂ emissions, which are linked to it. The energy consumption per m³ of air gas produced, i.e., the energy efficiency of these units considerably improved, thanks to start-ups of large units benefiting from the latest technologies, and the return of most units to operating modes much closer to optimal conditions. The global efficiency level reached in 2010 was higher than the one observed before the crisis in 2007 and also constitutes the best level reached since 1998.
- The total consumption of thermal energy and direct CO<sub>2</sub> emissions significantly rose due to the ramping up of new

hydrogen production units, the acquisition of a syngas <sup>(b)</sup> unit in Germany and the sharp recovery of hydrogen sales in 2010. The energy efficiency of the hydrogen units continued to improve between 2009 and 2010.

■ The thermal energy consumption of the cogeneration units remained stable between 2009 and 2010 but the CO₂ emissions these units avoided increased slightly because of the sale of one less efficient unit concerning these emissions avoided while other more efficient units experienced a growth in their activity.

In order to distinguish the differentiated growth dynamics between advanced economies and developing economies, Air Liquide decided, as of this year, to segment its direct and indirect  ${\rm CO}_2$  emissions between these economies.

The table of the most relevant environmental indicators, found below, takes into account this new segmentation for the Group's direct and indirect emissions.

<sup>(</sup>a) Percentage calculated on 2009 data.

<sup>(</sup>b) Gas mainly containing hydrogen and carbon monoxide

#### ENVIRONMENTAL INDICATORS FOR THE GROUP AS A WHOLE

Presented here are the environmental elements most representative of the Group's businesses, covering a total of 497 Air Liquide production units or sites. They concern:

- large air separation units;
- hydrogen and carbon monoxide units;
- cogeneration units;
- acetylene units;
- nitrous oxide units;

- carbon dioxide liquefaction and purification units;
- units in the Hygiene and Specialty Chemicals sectors;
- units for Welding equipment and products;
- Engineering and Construction units;
- Research and Development Centers and Technical Centers;
- transportation;
- waste and byproducts.

	Scope	2006	2007	2008	2009	2010
Total annual electricity consumption (in GWh)	World	22,281	23,232	23,223	21,139	24,924 *
Total annual thermal energy consumption (in LHV Terajoules)	World	155,725	160,033	177,395	183,381	204 434 *
Evolution of energy consumption per m <sup>3</sup> of air gas produced	World	100.0	99.0	100.2	102.4	98.2 *
Evolution of energy consumption per m <sup>3</sup> of hydrogen produced <sup>(a)</sup>	World	100.0	99.9	98.7	98.8	98.2 *
Total annual water consumption (in millions of m³)	World	55.6	57.4	59.7	59.9	66.1
Annual amount of CO <sub>2</sub> emissions avoided by cogeneration and on-site units (in thousands of tonnes)	World	- 913 <sup>(c)</sup>	- 781 <sup>(c)</sup>	- 781 <sup>(c)</sup>	- 967 <sup>(c)</sup>	- 1 020
Total direct greenhouse gas (GHG) emissions into the atmosphere (in thousands of tonnes ${\rm CO_2}{\rm eq.}$ ) (d)	World	7,917	8,100	9,014	9,386	10,181
Of which direct GHG emissions in developing economies	Developing economies					487
Of which direct GHG emissions in advanced economies	Advanced economies					9,694
Total indirect GHG emissions (in thousands of tonnes CO <sub>2</sub> ) <sup>(f)</sup>	World	7,631	7,995	7,952	7,447	9 294
Of which indirect GHG emissions in developing economies	Developing economies					3,949
Of which indirect GHG emissions in advanced economies	Advanced economies					5,345
Total direct and indirect GHG emissions (in thousands of tonnes CO <sub>2</sub> eq.)	World	15,548	16,095	16,966	16,833	19,475
Of which direct and indirect GHG emissions in developing economies	Developing economies					4,436
Of which direct and indirect GHG emissions in advanced economies	Advanced economies					15.039

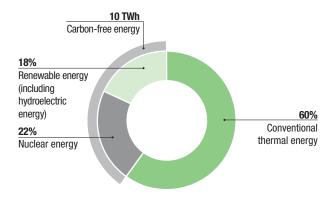
In this report, the advanced economies are defined in accordance with the financial reporting: Australia, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United States; The developing economies refer to the other countries in which Air Liquide operates.

- (a) Also includes the quantities of carbon monoxide produced in these units.
- (b) Representing less than 0.5 one-thousandth of the industrial water consumption of the economies under review.
- (c) Value revised during the 2010 reporting.
- (d) Includes CO, emissions and nitrous oxide emissions.
- (e) Representing less than 1 one-thousandth of GHG emissions in the economies under review.
- (f) Total indirect GHG emissions generated by the production of electricity purchased outside the Group. The indirect emissions only concern CO2 emissions. Calculation takes into account the primary energy source each country uses to produce electricity (source: International Energy Agency).
- \* Indicator verified by the Statutory Auditors in the framework of limited assurance.

#### Graphic analysis of direct and indirect emissions and the origin of the electricity used

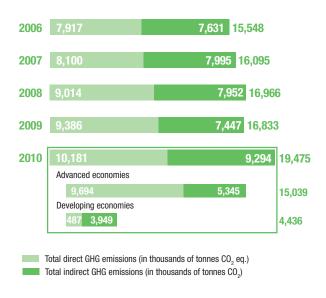
#### ORIGIN OF ELECTRICITY USED IN 2010 (a)

Taking into account the different natures of primary energy of the countries where the Group is present, it is possible to present the breakdown of the origin of the electricity used worldwide.

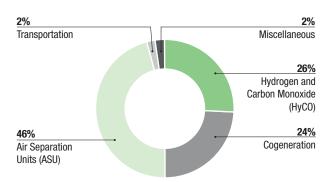


(a) The calculation takes into account the different natures of primary energy that each country uses to produce electricity (source: International Energy Agency).

#### **DIRECT AND INDIRECT GREENHOUSE GAS EMISSION**



#### BREAKDOWN OF DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS OF THE GROUP IN 2010



### DETAILS ON INDICATORS FOR EACH OF THE 10 UNIT TYPES, TRANSPORTATION AND WASTE AND BYPRODUCTS

#### 1. Air separation units

Worldwide, Air Liquide operates **287 large air separation units**. In 2009, there were 265 of them. These units produce oxygen, nitrogen and argon, with some sites producing rare gases like krypton and xenon.

**Environment:** These factories "without chimneys" do not use any combustion processes. Since they discharge almost no

CO<sub>2</sub>, sulfur oxide (SOx) or nitrogen oxide (NOx) emissions, they are particularly environmentally friendly. They consume electricity almost exclusively: worldwide, they use about 2,700 MW each instant, the equivalent of the production of two nuclear power plant units. Their cooling systems require back-up water.

Air separation units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh) (a)	World	21,379	22,296	22,235	20,141	23,774
Evolution of energy consumption per m³ of gas produced (b)	World	100.0	99.0	100.2	102.4	98.2 *
Annual back-up water consumption (in millions of m³)	World	34.2	36.2	34.6	33.2	36.7
Evolution of back-up water consumption per m <sup>3</sup> of gas produced <sup>(c)</sup>	World	100.0	97.7	95.4	101.7	99.6
Discharge to water: oxidizable matter (in tonnes)	World	Below 500	Below 500	Below 250	Below 250	Below 250
Discharge to water: suspended solids (in tonnes)	World	Below 500	Below 500	Below 250	Below 250	Below 250

<sup>(</sup>a) Also including small volumes of purchased steam.

#### EVOLUTION OVER FIVE YEARS OF ENERGY CONSUMPTION PER M3 OF GAS PRODUCED, AIR SEPARATION UNITS



<sup>(</sup>b) Gases produced (oxygen, nitrogen, argon) calculated in m3 of equivalent gaseous oxygen. Base 100 in 2006.

<sup>(</sup>c) Excluding the energy consumption of units with an open cycle water cooling system. Base 100 in 2006.

<sup>\*</sup> Indicator verified by the Statutory Auditors in the framework of limited assurance.

#### 2. Hydrogen and carbon monoxide production units

Worldwide, Air Liquide operates **39 large hydrogen and carbon monoxide production units**. In 2009, there were 36 of them. These units also produce steam for certain customers. Carbon monoxide is an indispensable raw material for producing plastics in the chemical industry. These units primarily use natural gas and certain amounts of water required for the reaction that produces hydrogen.

**Environment:** The **desulfurization of hydrocarbons** to produce sulfur-free fuels is one of the main applications for hydrogen. In

2010, the hydrogen Air Liquide supplied to refineries throughout the world resulted in **avoiding about 740,000 tonnes of sulfur oxide emissions being discharged into the atmosphere**, which is more than two times higher than all the sulfur oxide emissions from a country like France. These units emit  $\mathrm{CO}_2$  and nitrogen oxides (NOx) but produce practically no sulfur oxide (SOx). They also consume electricity and their cooling systems require back-up water. The energy efficiency of these units per  $\mathrm{m}^3$  of gas produced continued to improve in 2010 and has improved by almost 1.8% compared to 2006.

Hydrogen and carbon monoxide units	Scope	2006	2007	2008	2009	2010
Annual thermal energy consumption (in LHV Terajoules)	World	86,699	94,880	102,717	95,306	119,205
Annual electricity consumption (in GWh)	World	507	512	518	478	620
Evolution of energy consumption per m <sup>3</sup> of gas produced <sup>(a)</sup>	World	100.0	99.9	98.7	98.8	98.2 *
Emissions into the air: $CO_2$ (in thousands of tonnes)	World	3,389	3,795	4,226	3,923	4,875
Emissions into the air: NOx (nitrogen oxide) (in tonnes)	World	800	950	860	750	850
Emissions into the air: SOx (sulfur oxide) (in tonnes)		Below 500	Below 250	Below 250	Below 250	Below 250
Annual consumption of process and back-up water (in millions of m³)	World	9.6	9.8	10.6	10.2	13.0
Discharge to water: oxidizable matter (in tonnes)	World	Below 100	Below 100	Below 200	Below 200	Below 200
Discharge to water: suspended solids (in tonnes)	World	Below 500	Below 500	Below 1,000	Below 1,000	Below 1,000

<sup>(</sup>a) Hydrogen and carbon monoxide. Base 100 in 2006.

#### EVOLUTION OVER FIVE YEARS OF ENERGY CONSUMPTION PER M3 OF GAS PRODUCED, HYDROGEN AND CARBON MONOXIDE UNITS



<sup>\*</sup> Indicator verified by the Statutory Auditors in the framework of limited assurance.

#### 3. Cogeneration units

Worldwide, Air Liquide operates **17 cogeneration units**. In 2009, there were 18 of them. These units produce steam and electricity simultaneously. They consume natural gas and water, most of which is converted into steam for customers. Most of the steam is condensed by these customers and then reused in the cogeneration unit. In most cases, the electricity produced is supplied to the local electricity distribution network.

**Environment:** Combustion of natural gas produces  $\mathrm{CO}_2$  and leads to nitrogen oxide (NOx) emissions, but practically no sulfur oxide (SOx) emissions. The cogeneration units are more energy efficient concerning  $\mathrm{CO}_2$  emissions than separate production units for electricity and steam. They therefore help reduce  $\mathrm{CO}_2$  emissions in the industrial basins they supply. In 2010, the Group's cogeneration units **avoided 954,000 tonnes of \mathrm{CO}\_2 emissions being discharged into the atmosphere**, so they were about **17% more efficient** than the separate production of electricity and steam.

Cogeneration units	Scope	2006	2007	2008	2009	2010
Annual natural gas consumption (or thermal energy) (in LHV Terajoules)	World	68,584	64,685	74,168	87,642	84,763
Annual amount of CO <sub>2</sub> emissions into the atmosphere prevented through cogeneration units <sup>(a)</sup> (in thousands of tonnes)	World	- 849 <sup>(b)</sup>	- 718 <sup>(b)</sup>	- 718 <sup>(b)</sup>	- 909 <sup>(b)</sup>	- 954
Emissions into the air: CO <sub>2</sub> (in thousands of tonnes)	World	3,848	3,629	4,161	4,917	4,755
Emissions into the air: NOx (nitrogen oxide) (in tonnes)	World	2,630	2,300	2,700	3,160	2,650
Emissions into the air: SOx (sulfur oxide) (in tonnes)	World	Below 100	Below 50	Below 50	Below 50	Below 50
Annual water consumption (in millions of m³)	World	8.7	7.9	11.5	13.5	13.1

<sup>(</sup>a) Calculation takes into account the primary energy source that each country uses to produce electricity (source: International Energy Agency).

#### 4. Acetylene production units

Worldwide, Air Liquide operates **50 acetylene production units** (a gas used mainly in welding and metal cutting). 49 of them produce this gas through the decomposition of a solid – calcium carbide – using water. One unit fills cylinders with this gas, which is delivered by another industrial company.

**Environment:** This process produces lime, which is generally recycled (at over 90%) in industrial and agricultural applications (cf. paragraph on waste and by products).

Acetylene units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh)	World	12	11	10	10	10
Annual water consumption (in millions of m3)	World	0.4	0.4	0.4	0.3	0.3
Annual calcium carbide consumption (in tonnes)	World	38,100	38,500	41,100	34,100	31,800
Estimate of emissions of volatile organic compounds (VOC) into the air <i>(in tonnes)</i> (a)	World		170	140	150	140

<sup>(</sup>a) Losses of acetylene and acetone into the atmosphere.

<sup>(</sup>b) Values revised during the 2010 reporting.

#### 5. Nitrous oxide production units

Worldwide, Air Liquide operates **nine nitrous oxide production units**. Nitrous oxide is used primarily as an anesthetic gas in the healthcare sector and as a sweetening agent in the food industry.

It is produced from ammonium nitrate in solid form or as a solution in water.

Nitrogen oxide units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh)	World	7	6	6	5	6
Annual water consumption (in millions of m³)	World	0.1	0.1	0.1	0.1	0.1
Annual ammonium nitrate consumption (in tonnes)	World	24,540	21,500	20,000	19,000	21,000
Emissions of nitrous oxide into the air (in tonnes)	World	800 <sup>(a)</sup>	780	550	410	430 <sup>(b)</sup>

<sup>(</sup>a) Estimate for the year 2006.

#### 6. Carbon dioxide liquefaction and purification units

Worldwide, Air Liquide operates **62 carbon dioxide liquefaction and purification units**. Carbon dioxide has many industrial applications but is used mainly in the food industry to deep-freeze foods or to produce carbonated beverages.

**Environment:** Carbon dioxide is most often a byproduct of chemical units operated by other manufacturers. In some cases, it is found naturally in underground deposits. It is purified and liquefied in Air Liquide units, which consume electricity and cooling water. In this way, carbon dioxide is reused for other industrial applications instead of being directly emitted into the atmosphere.

Carbon dioxide liquefaction and purification units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh)	World	320	340	375	411	420
Annual water consumption (in millions of m³)	World	1	1.2	1.3	1.7	1.8
		Below	Below	Below	Below	Below
Discharge to water: oxidizable matter (in tonnes)	World	50	50	50	150	150
		Below	Below	Below	Below	Below
Discharge to water: suspended solids (in tonnes)	World	50	50	50	50	50

#### 7. Hygiene and specialty chemicals production units

**Hygiene and specialty chemicals production units** are located at **eight sites** in France, Belgium, Germany and China. These units consume natural gas, electricity and water. Combustion of natural gas produces small quantities of CO<sub>2</sub>.

Air Liquide contributes to patient safety at the hospital with disinfectant and antiseptic products and related services. The Group's experts work closely with hospitals to help them reduce the risk of nosocomial infections and contamination.

Hygiene and specialty chemicals units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh)	World	18	20	22	21	22
Annual thermal energy consumption (in LHV Terajoules) (a)	World	245	245	274	234	272
Air emissions: CO <sub>2</sub> (in thousands of tonnes)	World	9	9	10	9	10
Air emissions of volatile organic compounds (VOC) (in tonnes)	World		320	250	150	190
Annual water consumption (in millions of m³)	World	0.5	0.5	0.6	0.4	0.5
		Below	Below	Below	Below	Below
Discharge to water: oxidizable matter (in tonnes)	World	1,100	1,000	1,000	800	1,000
		Below	Below	Below	Below	Below
Discharge to water: suspended solids (in tonnes)	World	100	100	100	100	100

<sup>(</sup>a) Including thermal energy corresponding to steam purchases.

<sup>(</sup>b) Which corresponds to the equivalent of 133,300 tonnes of CO<sub>2</sub>.

#### 8. Welding equipment and products production units

The **welding equipment and products production units** are mainly located on **13 sites** in the world. They are welding equipment assembly (electric welding units, torches, regulators)

or welding consumables (electrodes, welding wire and flux) production units.

Welding equipment and products production units	Scope	2006	2007	2008	2009	2010
Annual electricity consumption (in GWh)	World	57	67	68	49	52
Annual thermal energy consumption (in LHV Terajoules)	World	197	223	218	166	160
Emissions of CO <sub>2</sub> into the air (in thousands of tonnes)	World	11	13	12	9	9
Annual water consumption (in millions of m³)	World	1.1	1.2	0.5	0.4	0.5
Annual consumption of raw materials (in thousands of tonnes) (a)	World		150	170	116	130

<sup>(</sup>a) Metals and materials for the production of welding products.

#### 9. Engineering and Construction units

The **Engineering and Construction units** taken into account in this reporting are located at **six sites**, in France, China, Japan and India. They are mainly units for the construction of air separation columns and cryogenic tanks.

**Environment:** Lurgi's integration into the Air Liquide Group broadened the Group's portfolio of engineering technologies, in particular in production processes for hydrogen and syngas, biofuels (bioethanol, biodiesel) and methanol. In addition, Lurgi is one of the world leaders in sulfur recovery processes.

Engineering and Construction units	Scope	2008	2009	2010
Annual electricity consumption (in GWh)	World	10	11	11
Annual water consumption (in millions of m³)	World	0.1	0.1	0.1
Annual consumption of raw materials (in thousands of tonnes) (a)	World	7.7	4.5	4.5

<sup>(</sup>a) Mainly metals.

#### 10. Principal Research and Development Centers and Technical Centers

The principal Research and Development Centers and Technical Centers (a) are located at six sites in France, Germany, the USA and Japan. Although these centers' environmental impact is very low compared to other Group units, it was nevertheless decided to present their environmental impact.

**Environment:** Over 60% of the R&D budget is directly earmarked for **environmental issues** (saving energy, producing in a cleaner way, developing energies of the future) and **protecting life**.

Research and Development centers and Technical Centers	Scope	2008	2009	2010
Annual electricity consumption (in GWh)	World	8	13	9
Annual thermal energy consumption (in LHV Terajoules)	World	18	33	34
Emissions of $\mathrm{CO}_2$ into the air (in thousands of tonnes)	World	1	2	2
Annual water consumption (in millions of m³)	World	0.02	0.02	0.01

<sup>(</sup>a) Apart from the Research Centers of the Hygiene and Specialty Chemicals activity, wich are included in paragraph 7.

#### 11. Transportation

In 2010, trucks delivering Air Liquide liquid gases or gas cylinders traveled **361 million kilometers** throughout the world and emitted about **396,000 tonnes of CO\_2**. On-site nitrogen, oxygen and hydrogen units reduced truck deliveries, a source of  $CO_2$  emissions. These on-site units were able to **save the 61 million extra kilometers** travelled by trucks and therefore the emission of **66,000 tonnes of CO\_2**.

**Environment:** Supplying large customers via pipeline from the Group's production units also considerably limits truck transportation. These pipeline systems, which are environmentally friendly and safe, total over **8,700 kilometers worldwide**. For air gases and hydrogen, which represent most of the volumes the Group delivers, **86% of deliveries are made via pipeline or through on-site units.** As a result, only 14% of all air gases or hydrogen are delivered by trucks.

	Scope	2006	2007	2008	2009	2010
Kilometers traveled by all vehicles delivering gas in liquid or cylinder form (in millions of km)	World	375	377	395	363	361
Estimate of CO <sub>2</sub> emissions generated by these vehicles (in thousands of tonnes)	World	411	413	433	399	396
Evolution of the efficiency of deliveries for liquefied gases (oxygen, nitrogen, argon, carbon dioxide) (a)	World	100.0	101.3	100.4	98.8	97.7
Estimate of truck transport kilometers avoided through on-site customer units (in millions of km)	World	- 60	- 59	- 58	- 54	- 61
Estimate of CO <sub>2</sub> emissions avoided by these on-site units (in thousands of tonnes)	World	- 64	- 63	- 63	- 58	- 66
Percentage of deliveries of air gases and hydrogen via pipeline or on-site	World	85%	84%	84%	85%	86%

<sup>(</sup>a) In kilometers per tonne delivered. Base 100 in 2006. Values revised following the 2010 reporting.

#### EFFICIENCY OF TRUCK DELIVERIES OF LIQUID GASES (OXYGEN, NITROGEN, ARGON, CARBON DIOXIDE)



#### 12. Waste and byproducts

Although the quantity of waste and byproducts produced is small, with a concern for exhaustiveness of the reporting and exemplarity, Air Liquide nonetheless decided to publish the following estimated figures.

The main waste and byproducts produced by the Group's production units are lime from the acetylene production units (byproduct), metal waste, oils, paints and solvents.

**Environment:** The average recycling ratio of waste <sup>(a)</sup> is over 90%.

Waste and byproducts	Scope	2008	2009	2010
Waste and byproducts that are not dangerous				
Annual quantity of lime produced (extracted dry equivalent) by the acetylene production units (in tonnes)	World	47,000	39,400	36,900
% recycled	World	Over 90%	Over 90%	Over 90%
■ Metal waste (in tonnes) (b)	World	9,500	6,000	9,200
% recycled	World	Over 99%	99%	Over 99%
Oils (in tonnes)	World	700	600	750
% recycled	World	88%	89%	90%
Total non-dangerous waste and by products (estimate in tonnes)	World	57,200	46,000	46,850
Dangerous waste				
Paints and solvents (in tonnes)	World	200	200	200
% recycled	World	8%	30%	45% <sup>(c)</sup>
TOTAL WASTE AND BY PRODUCT (estimate in in tonnes)	WORLD	57,400	46,200	47,050

<sup>(</sup>a) Calculation is based on the weight of the waste.

#### COMPLEMENTARY ENVIRONMENTAL INDICATORS

As a complement of the main environmental indicators presented at the beginning of the environment chapter, there are other environmental indicators for the Group but that are of lesser importance and relevance for Air Liquide's business. Among them and with a concern for transparency and exhaustiveness

in reporting, Air Liquide presents below the synthesis table of emissions into the atmosphere of nitrogen oxide (NOx), sulfur oxide (SOx), volatile organic compounds (VOC), discharge to water of oxidizable matter and waste and byproducts.

	Scope	2006	2007	2008	2009	2010
Total emissions into the air: NOx (nitrogen oxide) (in tonnes)	World	3,430	3,250	3,560	3,910	3,500
Total emissions into the air: SOx (sulfur oxide) (in tonnes)	World	Below 600	Below 300	Below 300	Below 300	Below 300
Total volatile organic compounds (VOC) emitted into the atmosphere (estimate, in tonnes)	World		490	390	300	330
Total discharge to water: oxidizable matter (in tonnes)	World	Below 2,650	Below 1,650	Below 1,500	Below 1,400	Below 1,600
Total waste and byproducts (in tonnes)	World			57,400	46,200	47,05

<sup>(</sup>b) Metal waste that is not dangerous.

<sup>(</sup>c) In addition, 44% is incinerated.

#### "CARBON CONTENT" OF AIR LIQUIDE'S MAIN PRODUCTS

Taking into account the characteristics of electricity supplied to include both direct and indirect (b) emissions, those connected to Air Liquide, the Group has built a model (a) calculating the "carbon content" of its main products in certain countries. These figures

production, cylinder filling and also transportation.

#### "CARBON CONTENT" OF AIR LIQUIDE'S MAIN PRODUCTS IN 2009 (gCO<sub>2</sub>/Nm<sup>3 (c)</sup>)

			_					_		
			Ει	ırope			North Am	erica	As	ia
		France	Germany	Italy	Spain	Sweden	United States	Canada	Japan	China
	Oxygen via pipeline <sup>(d)</sup>	67	267	244	270	34	170	137	311	444
	Liquid oxygen	140	480	449	489	96	317	265	566	777
Oxygen	Oxygen in cylinders <sup>(e)</sup>	446	786	762	778	338	598	609	631	1 171
	Nitrogen via pipeline <sup>(d)</sup>	22	88	81	89	11	56	45	102	147
	Liquid nitrogen	99	317	300	324	75	213	181	376	506
Nitrogen	Nitrogen in cylinders <sup>(e)</sup>	403	615	605	604	316	489	521	431	886
Argon	Argon in cylinders <sup>(e)</sup>	544	1 180	1 122	1 176	388	848	811	1 089	1 827
CO <sub>2</sub>	Liquid CO <sub>2</sub>	57	112	122	124	33	70	67	(f)	156
		Belgium					United States			
Hydrogen	Hydrogen via pipeline <sup>(g)</sup>	604					680			

<sup>(</sup>a) The methodology and calculations for the model of these figures were validated by Ecofys, a consulting firm specialized in sustainable development. These calculations take into account in each country the different energy sources used to produce electricity (source: International Energy Agency). In the USA, the calculation of indirect emissions for air gases takes into account the data from the main electricity production units that supply Air Liquide.

<sup>(</sup>b) Concerning the CO<sub>2</sub> emissions from electricity production consumed by Air Liquide.

<sup>(</sup>c)  $Nm^3 = m^3$  of gas at atmospheric pressure at 0 °C.

<sup>(</sup>d) At 40 bar, pressure standard for these pipelines.

<sup>(</sup>e) At 200 bar, pressure standard for cylinders.

<sup>(</sup>f) Not available.

<sup>(</sup>g) At 100 bar, pressure standard for these pipelines.

### INDUSTRIAL MANAGEMENT SYSTEM (IMS) AND QUALITY, ENVIRONMENTAL AND HEALTH AND SAFETY CERTIFICATIONS

In 2004, the Group launched a new Industrial Management System (IMS) to strengthen safety, reliability, the preservation of the environment and industrial risk management. The system is now implemented in nearly all the Group's operations (over 99% of the Group's revenue). At the start of 2007, a new indicator was established to track the percentage of revenue covered by the Group's IMS internal audits. Between 2007 and 2010, 60 units were audited, representing 91% of the Group's activities in terms of revenue. In four years, almost the entire Group was audited for the implementation of its Industrial Management System (IMS).

The Group has taken several other quality initiatives, especially in the implementation of good production practices (Common Good Manufacturing Practices) and ISO certification. ISO 9001 quality certifications cover about 71% of the Group's revenue.

The Group has also undertaken a proactive approach to preserving the environment by obtaining ISO 14001 certifications, an international reference for environmental management. **These** 

### ISO 14001 certifications cover about 25% of the Group's revenue.

Furthermore, Air Liquide adopted the QHSAS 18001 certification concerning occupational health and safety management, covering about 12% of the Group's revenues.

Likewise, **environmental incidents**, like accidents involving personnel safety, are reported by Air Liquide subsidiaries worldwide. They are analyzed in depth depending on their nature so that prevention measures can be strengthened.

The worldwide "Responsible Care" Charter is an initiative of the International Council of Chemical Associations. It formalizes the commitment of the signatories to improve the global performances of the chemical industries in health, safety and protection of the environment. Many Air Liquide subsidiaries had already signed this charter locally. Air Liquide signed it in 2010 on the Group level, confirming many principles that the Company already very largely follows

	Scope	2006	2007	2008	2009	2010
Estimate of the Group entity's accumulated revenue that had an internal IMS audit	World		46%	71% <sup>(a)</sup>	76%	91% <sup>(a)</sup>
Estimate of Group entity's revenue covered by an ISO 9001 quality certification	World	73%	73%	75%	74%	71%
Estimate of Group entity's revenue covered by an ISO 14001 environmental certification	World	22%	24%	24%	25%	25%
Estimate of Group entity's revenue covered by an OHSAS 18001 occupational health						
and safety management system	World				14%	12%

<sup>(</sup>a) In 2010, the reporting method was modified taking into account the actual revenue consolidated by the subsidiaries and the internal IMS audit cycle.

### PRINCIPAL EUROPEAN DIRECTIVES AND REGULATIONS APPLICABLE TO AIR LIQUIDE IN THE ENVIRONMENTAL AND SAFETY FIELDS

#### **SEVESO 2 DIRECTIVE**

This European directive focuses on preventing major industrial risks. It applies to any facility where dangerous substances exceed certain quantities. These facilities are divided into two categories according to this quantity: Seveso 2 "high threshold" and "low threshold". In Europe, mainly because of their stocks of oxygen, 96 "low threshold" and 24 "high threshold" Air Liquide sites are involved. Seveso regulations apply only to Europe but if the Seveso "high threshold" criteria were applied worldwide, 22 other Group sites could be included.

#### CO, DIRECTIVE IN EUROPE

The objective of the European directive, which establishes a quota system for greenhouse gas emissions in Europe, is to decrease these emissions like the Kyoto Protocol. Implementation for CO<sub>2</sub> in the industrial sector began on January 1, 2005. As air separation units emit practically no CO<sub>2</sub>, this directive only applied, for the 2005-2007 period, to Air Liquide's five cogeneration sites and two hydrogen production sites in France, the Netherlands and Spain. Air Liquide's quotas (about 1.2 million tonnes of CO<sub>2</sub> per year) for the 2005-2007 period covered the emissions observed.

For the second period (2008 to 2012), the directive will only apply to seven cogeneration sites in France, Germany, the Netherlands and Spain and a single hydrogen production site in Belgium. Air Liquide's quotas (about 3.3 million tonnes of CO, per year) should cover the anticipated emissions<sup>(a)</sup>.

For the third period (2013-2020), in addition to the sites mentioned, the directive will propose to encompass the Group's other large hydrogen production sites in Europe. The specific quota allocation methods for CO<sub>2</sub> emissions are currently being drawn up by the European Union on the basis of the revision of the ETS (Emissions Trading Scheme) directive voted in December 2008.

(a) The amount of the allocated quotas is calculated following the same consolidation rules as the environment and energy indicator reporting.

#### **EUROPEAN REACH REGULATION**

REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) is a European Union regulation (therefore directly applicable in the Union's member states) that governs the registration, evaluation and authorization of chemical products produced in or imported to the Union.

Air Liquide's main products such as oxygen, nitrogen, rare gases, CO<sub>2</sub>, hydrogen and helium are excluded from the scope of REACH. Nevertheless, four products (carbon monoxide, acetylene, methanol (a) and lime (a) and a few specialty gases in the Electronics business such as silane fall under this regulation. In addition, about one quarter of the revenue of the Specialty Chemicals business is concerned by REACH.

This regulation went into effect on June 1, 2007, and the registration and authorization procedures are be spread out over about 12 years. In accordance with REACH's calendar, Air Liquide registered the four products mentioned above on November 30, 2010, corresponding to annual quantities produced or imported to Europe of 1,000 or more tonnes. The other products, for annual quantities from 100 to 999 tonnes, must be registered by June 1, 2013.

In total, less than 6% of the Group's revenue is concerned by REACH.

- (b) Methanol is the raw material used to produce hydrogen in one of the Group's units.
- (c) Lime is a byproduct of the acetylene activity (cf. paragraph of the report on the acetylene units).



### An innovative company

Air Liquide was founded in 1902 through an innovation, a new liquefaction and air separation technology. Innovation remains an essential value of the Company. Air Liquide files around **300 patents a year**. Innovation and sustainable development are inseparable.

A certain number of indicators in the innovation field are presented below.

Above and beyond these indicators, innovation is an integral part of Air Liquide's culture and is one of the basic components of its Sustainable Development approach.

Certain patented innovations make a major contribution to the Group's growth. Each year, Air Liquide singles out the inventors of patents that have been successfully industrialized.

Each year on November 8, the anniversary of the Group's Foundation in 1902, the Group celebrates an Innovation Day

during which the main innovations developed during the year are exhibited.

Over 60% of the Group's R&D budget is devoted to work on life – for example, concerning therapeutic gases –, the environment and sustainable development with five subjects that hold an important place in it:

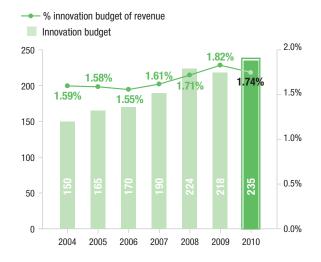
- energy efficiency;
- CO<sub>2</sub> capture and storage;
- hydrogen, a clean energy carrier;
- second-generation biofuels;
- development of industrial gas applications in the photovoltaic industry.

#### INDICATORS FOR THE GROUP AS A WHOLE

	2010
Number of researchers	1,000 researchers of 30 nationalities
Number of research centers	8
Industrial partnerships	Over 100
Academic collaborations with universities and research institutes	Over 120

Innovation budget	2004	2005	2006	2007	2008	2009	2010
Innovation budget (in millions of euros)	150	165	170	190	224	218	235
Revenue of the Group (in millions of euros)	9,428	10,435	10,949	11,801	13,103	11,976	13,488
% INNOVATION BUDGET OF REVENUE	1.59%	1.58%	1.55%	1.61%	1.71%	1.82%	1.74%

#### EVOLUTION OF THE INNOVATION BUDGET AND THE PERCENTAGE OF THIS INNOVATION BUDGET VIS-À-VIS THE GROUP'S REVENUE



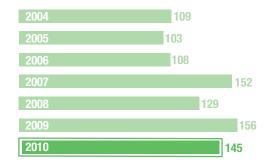
#### SUSTAINABLE DEVELOPMENT REPORT

An innovative company

Patents	2004	2005	2006	2007	2008	2009	2010
Number of inventions patented	2, 601	2,680	2,668	2,847	2,640	2,508	2,830
New inventions patented during the year	225	236	267	263	257	280	301
Patents filed directly in the Group's four main zones							
of operation (a)	109	103	108	152	129	156	145

<sup>(</sup>a) Europe, United States, Japan, China.

#### NUMBER OF PATENTS FILED IN THE FOUR MAIN ZONES WHERE THE GROUP OPERATES



These patents are strategic for Air Liquide and are directly valid in all four of the Group's main zones: Europe, the United States, Japan and China.

Reporting methodology



### Reporting methodology

#### PROTOCOL AND DEFINITIONS

In the absence of a relevant and recognized benchmark for industrial gas activities, Air Liquide has created a protocol to define its reporting methods for human resources, safety and environmental indicators. This protocol includes all the definitions, measurement procedures and collection methods for this information. In line with the Group's commitment to continuous improvement, Air Liquide is gradually making adjustments to its sustainable development indicators protocol to reflect changes in the Group.

This protocol is based on the general principles defined by the Group with regard to scope, responsibilities, controls and limits, and establishes definitions, responsibilities, tools and data-tracing methods for each indicator. This document is regularly updated. Moreover, this protocol takes into account all the Group's formalized procedures in the framework of the IMS (Industrial Management System).

#### SCOPE AND CONSOLIDATION METHODS

Human resources and environmental indicators are consolidated worldwide for all companies globally and proportionally integrated within the financial consolidation scope *pro rata* according to the integration percentage.

Safety indicators are consolidated worldwide for all companies in which Air Liquide has operational control or is responsible for safety management.

Apart from these general rules, there are certain specific ones:

- information on the impact of transportation (kilometers traveled by delivery truck, CO<sub>2</sub> emitted) is calculated on the basis of data collected in the main countries where the Group is established around the world;
- information on kilometers saved and CO<sub>2</sub> emissions avoided through on-site air gas production units concerns the subsidiaries globally integrated within the financial consolidation scope;

- Environmental and energy indicators for the main types of production units operated by the Group cover about 99% of the Group's revenue in Gas and Services, and 98% of the Group's total revenue;
- production units, concerning environmental and energy indicators, are included in the reporting system as of their industrial service start-up;
- electricity consumption, and the indirect CO<sub>2</sub> emissions related to it, is only taken into account when Air Liquide pays for this electricity. Energy consumption of on-site units, as well as water consumption specific to the sale of treated water (which is not part of the Group's core business) are excluded from the data consolidation scope.
- the segmentation between advanced economies and developing economies for direct and indirect greenhouse gas emissions is established by the Finance Direction.

Reporting methodology

#### REPORTING AND RESPONSIBILITIES

The human resources, safety and environmental indicators are produced by several data-collection systems in the Group, each under the responsibility of a specific department:

- human resources indicators included in the Group's general accounting consolidation tool are under the responsibility of the Human Resources Department;
- the energy consumption and CO<sub>2</sub> emissions indicators from the main air separation units, cogeneration, hydrogen and carbon monoxide units are tracked by the Large Industry business line using a dedicated intranet tool;
- as a complement, the collection of environmental and safety data is carried out by the Safety and Industrial System Department using a dedicated intranet tool, and includes accident reporting:
  - for all entities the data of the Group's accident reporting,
  - for the units mentioned above, other environmental indicators (atmospheric emissions, water consumption, discharge to water, etc.),

- for the smaller units (acetylene, nitrous oxide, carbon dioxide units and hygiene and specialty chemical products units), the welding units and the Engineering and Construction units, the Research and Development centers and the technical centers all indicators (energy use, atmospheric emissions, water consumption, discharge to water, etc.);
- indicators on kilometers traveled are the responsibility of the Industrial Merchant business line;
- the estimate of the percentage of the Group's revenue where the Industrial Management System (IMS), the ISO standards 9001 and 14001 and the OHSAS 18001 are being rolled out are indicators under the responsibility of the Safety and Industrial System Department;
- finally, indicators for the "carbon content" of the Group's main products are established by the Industrial Merchant Division and the Energy Services Group Department from energy and transportation indicators.

#### **CONTROLS**

Each department in charge of collecting data is responsible for the indicators provided. Control occurs at the time of consolidation (review of changes, intersite comparisons).

Safety and energy indicators are tracked monthly. In addition, audits of environmental data are carried out by the Safety and Industrial System Department on a sample of sites representative of the various types of units monitored. Where the data reported is incoherent or missing, an estimated value may be used by default.

#### METHODOLOGICAL LIMITS

The methodologies used for certain human resources, safety and environmental indicators can have certain limits:

- the absence of nationally or internationally recognized definitions, in particular for indicators on managers and professionals and social performance indicators;
- how representative the measurements taken and necessary estimates are, in particular, concerning indicators on CO<sub>2</sub> emissions avoided, water consumption, kilometers avoided per on-site units and training.

Statutory Auditors' limited assurance report

# Statutory Auditors' limited assurance report on a selection of Human Resources, Safety and Environment indicators

This is a free translation into English of the original report issued in French and is solely provided for the convenience of English speaking readers. This report should be read in conjunction with, and construed in accordance with French law and professional auditing standards applicable in France.

Further to L'Air Liquide S.A.'s request and in our capacity as Statutory Auditors of L'Air Liquide S.A., we have performed a review in order to express a limited assurance on a selection of Human Resources, Safety and Environment indicators for the financial year 2010. These specific Indicators, published and identified by the "\*" symbol (the "Indicators") in the Sustainable Development Report included in the Reference Document (the "Sustainable Development Report"), have been prepared in accordance with the Group's Sustainable Development reporting procedures applicable in 2010 (the "Reporting Criteria").

Air Liquide's management was responsible for preparing the Indicators as shown in the "reporting and responsibilities" section of the Sustainable Development Report. The Reporting Criteria, a summary of which is included in the "reporting methodology" section of the Sustainable Development Report, comprises procedures and methodological sheets defined by the Group. It is Air Liquide's Sustainable Development Department's responsibility to establish the Reporting Criteria and to ensure its accessibility.

It is our responsibility to express a conclusion on these Indicators on the basis of our review. Our assurance engagement has been planned and performed in accordance with the ISAE 3000 international standard of IFAC <sup>(1)</sup>. Our independence is defined by legal and regulatory texts as well as our professional code of ethics. A higher level of assurance would have required more extensive work.

#### Nature and scope of our review

We conducted the following review to be able to express our conclusion:

- we have assessed the Reporting Criteria with respect to its accuracy, its completeness, its neutrality, its understandability and its relevance:
- at the Group level, we have conducted the following tasks:
  - within the appropriate Departments (Sustainable Development Department, Human Resources Department, Safety and Industrial System Department, Large Industries business line), we have interviewed the persons in charge of collecting the data upon which the Indicators are calculated,
  - we have assessed the application of the Reporting Criteria, implemented analytical procedures and, on a sampling basis, we have verified the calculation and consolidation of the Indicators;
- we have selected a sample of six entities (2) for Human Resources Indicators, six entities (3) for Safety Indicators and five production units or networks (4) for Environment Indicators. This selection was made on the basis of their activity, their contribution to the Indicators, their location, and the results of the review performed during prior financial years. At these entities and units level, we have verified the understanding and application of the Reporting Criteria and probed the data in order to verify calculations and compare inputs with supporting documents;
- we have reviewed the presentation of the Indicators of the Sustainable Development Report.

On average, the selected entities and units account for 35% of the consolidated value of Environment Indicators (5), 10% of the consolidated value of Human Resources Indicators (6), and 24% of the consolidated worked hours upon which Safety Indicators are calculated.

<sup>(1)</sup> ISAE 3000: "Assurance Engagement other than reviews of historical data", International Federation of Accountants, International Audit and Assurance Board, December 2003.

<sup>(2)</sup> AL Poland, Pharmadom, AL Italy, AL Australia, subgroup AL BV. and Aqualung.

<sup>(3)</sup> Pharmadom, AL Italy, AL Poland, AL China, Grande Industrie Europe and AL AMERICA L.P..

<sup>(4)</sup> The air gases and hydrogen and carbon monoxide networks of the Northern region of Large Industries Europe (France, Belgium and the Netherlands) and of the Gulf Coast (USA), the air separation unit of ALSGIG (China), the hydrogen production unit of Estarreja (Portugal) and the cogeneration unit of Pergen (the Netherlands).

<sup>(5)</sup> On average 23% of the produced air volumes from the air separation units, 32% of the produced volumes from HyCO units, 19% of water consumption, 20% of electricity consumption, 43% of thermal energy consumption, 44 % of direct CO<sub>2</sub> emissions.

<sup>(6)</sup> On average 10% of headcount, 16% of women hired during the year among engineers and managers, 9% of training time, 10% of employees who had an annual performance review with their supervisor.

#### SUSTAINABLE DEVELOPMENT REPORT

Statutory Auditors' limited assurance report

To conduct the aforementioned scope of work, we called on members of our teams specialized in sustainable development. Taking into account the review performed during the previous eight financial years in various activities and countries, we consider that our work provide a sufficient basis for the conclusion expressed below.

#### Information about the Reporting Criteria

The Reporting Criteria calls for the following remarks from our part:

- the Group presents the main methodologies used for data reporting in the "reporting methodology" section of the Sustainable Development Report, as well as in the comments and footnotes associated with the Indicators published in tables within the Sustainable Development Report;
- the different reporting perimeters for the Indicators related to Human Resources, Safety and the Environment are detailed in the "scope and consolidation methods" part of the Sustainable Development Report;
- compared with the review of the previous financial year, we have noticed the following improvements as part of the continuous effort of the Group to strengthen the reliability of its reporting:
  - for Safety Indicators, the definition of "worked hours" appeared more consistent between audited business units integrating more frequently overtime and the realization of a reconciliation with Human Resources data,
  - for Human Resources Indicators, efforts initiated last year to clarify some definition of the Reporting Criteria were carried on in 2010;
- we have also identified the following areas for improvement:
  - for Environment Indicators, the Group should clarify the definition of "water consumption" data so as to ensure a common understanding throughout all business units and notably for new production units. The Group could also provide them with specific tools of water consumption assessment to facilitate their reporting and its consistency,
  - for Human Resources Indicators, the controls undertaken by business units which consolidate multiple subsidiaries should be strengthened, in particular with respect to data related to training and annual performance reviews.

#### Conclusion

Based on our review, nothing has come to our attention that causes us to believe that the Indicators were not established, in all material aspects, in accordance with the Reporting Criteria.

Courbevoie and Neuilly-sur-Seine, March 7, 2011

The Statutory Auditors

MAZARS Lionel Gotlib ERNST & YOUNG et Autres Jean-Yves Jégourel



### CORRESPONDENCE BETWEEN AIR LIQUIDE'S SUSTAINABLE DEVELOPMENT INDICATORS AND THE INDICATORS OF THE "GLOBAL REPORTING INITIATIVE" (GRI) $^{\rm (a)}$

Air Liquide indicators	GRI indicators
Human Resources	
Group employees	LA1
Distribution of employees by geographic zone	LA1
Turnover of employees (leaving the Group)	LA2
% of women	LA13
% of women among managers and professionals	LA13
Average number of days of training per employee and per year	LA10
% of employees who have had a performance review meeting with their direct supervisor during the year	LA12
Diversity (number of nationalities)	LA13
% employees with benefits coverage through the Group	LA3
Safety	
Number of lost time accidents of Group employees	LA7
Accident frequency of Group employees	LA7
Number of lost time accidents of subcontractors and temporary workers	LA7
Energy and environment	
Total annual electricity consumption	EN3/EN4
Total annual thermal energy consumption	EN3/EN4
Evolution of energy consumption per m³ of air gas produced (ASU)	EN6
Evolution of energy consumption per m³ of hydrogen produced (HyCO)	EN6
Total annual water consumption	EN8
Total direct greenhouse gas emissions	EN16
Total indirect greenhouse gas emissions	EN16
Total direct and indirect greenhouse gas emissions	EN16
Consumption of materials (calcium carbide, ammonium nitrate, materials for welding)	EN1
Emissions into the atmosphere (NOx)	EN20
Emissions into the atmosphere (SOx)	EN20
Emissions into the atmosphere (VOC)	EN20
Discharge to water (oxidizable matter, suspended solids)	EN21
Total mass of waste by type and waste treatment	EN22
Transportation	
Estimate of CO <sub>2</sub> emissions by truck delivery	EN29
Estimate of CO <sub>2</sub> emissions avoided through on-site units.	EN29

<sup>(</sup>a) Global Reporting Initiative (GRI): network-based organization that sets out principles and indicators that can be used to measure and report economic, environmental and social performances.