

# Letter to Shareholders

December 2005



CO<sub>2</sub> CO<sub>2</sub> CO<sub>2</sub> CO<sub>2</sub>  
**Focus on carbon dioxide**

Ladies and Gentlemen, Dear Shareholders,

The year 2005 enabled us to continue developing our markets, as can be seen by the growth in sales recorded over the first nine months of the year. The very important acquisition of Messer strengthened our position as leader of our industry worldwide and its integration is proceeding very successfully.

As for activities, the Group was able to leverage its assets in every region in the world and based its growth as much on Asian development as on a favorable economic climate in the Americas and its innovative products and services in Europe. As you know, this momentum has a triple foundation: presence, conquest and innovation.

Presence first: the traditional activities in mature economies make up a broad and firm base.

Conquest comes second: the Group has identified and won market shares in emerging geographies that are experiencing strong growth such as Eastern Europe, Russia, India and, of course, China.

Innovation, the third and important foundation that stimulates our growth: in both developed economies and new

markets, innovation and technology are at the very center of our development and enable us to improve the performance of the base.

For example, to better illustrate this strategy in the area of innovation, I invite you to discover, in this letter, the many applications of carbon dioxide, often little known, especially in the food industry.

I would like to thank you for your trust and loyalty, which we consider a source of the continuity of our strategy and growth, and on the occasion of the New Year, to offer you and your families my best wishes for health and prosperity.

**Benoît Potier**  
Chairman of the Management Board

## A FEW FACTS

■ **Carbon dioxide** is composed of one atom of carbon and two atoms of oxygen.

■ Its chemical formula is **CO<sub>2</sub>**.

■ It was first described in the seventeenth century by the Belgian chemist and physician **Jan Baptist van Helmont**.

■ **Carbon dioxide** is present in the atmosphere in small quantities – about 0.035%.

■ It is produced when living beings breathe and by combustion and fermentation.

# CARBON DIOXIDE

Carbon dioxide is an **inert, colorless, odorless, nonflammable** gas and is heavier than air. It is the only gas present in four forms: **solid, liquid, gaseous** and **supercritical**. This particular feature means it can be used in a wide variety of ways.

One of the best-known applications of this gas is the **carbonation of water** in which it is found in the form of bubbles. This is the technique used to produce carbonated waters and soft drinks. Carbon dioxide has another special characteristic: it is **bacteriostatic**, which means it stops the growth of bacteria.

When it becomes solid, carbon dioxide is transformed into **carbon dioxide snow**, at  $-78.5^{\circ}\text{C}$ . This remarkable refrigerant, when heated, is the only gas that goes directly from solid to gas, without passing through the liquid state. This is known as **sublimation** (as opposed to evaporation).

## Where does the carbon dioxide Air Liquide markets come from?

The carbon dioxide marketed by Air Liquide is obtained by compression and liquefaction. It is usually transported in liquid form.

The “raw” carbon dioxide is most often collected by Air Liquide from so-called rich sources (carbon dioxide content over 95%) on some industrial sites. **This carbon dioxide is then purified and liquefied in the Group’s units following the most rigorous standards (purity higher than 99.99%).**

The Group runs about **50 carbon dioxide purification and liquefaction units** throughout the world. It can therefore meet the needs of the many customers that demand a product in which very high purity is required, for **a host of industrial and food sector applications**.



*Carbon dioxide purification and liquefaction unit*

## More and more “green” applications

Air Liquide applications are beneficial to the environment in many industrial sectors. Moreover, carbon dioxide in water generates bicarbonates and carbonates, byproducts already found in nature.

Here are a few examples:

- Carbon dioxide is used for **industrial water treatment**, where this weak acid is preferable to strong acids (hydrochloric acid, sulfuric acid, etc.) for **pH regulation**, as it does not require any precautions or delicate handling.
- Carbon dioxide replaces chemical products in the textile industry, tanneries, industrial laundries and the pulp and paper industry and is used to neutralize bottle washing water.
- Carbon dioxide enables **drinking water** that is low in minerals, found in certain granitic areas (Brittany, the Alps and Australia), to be **mineralized**.

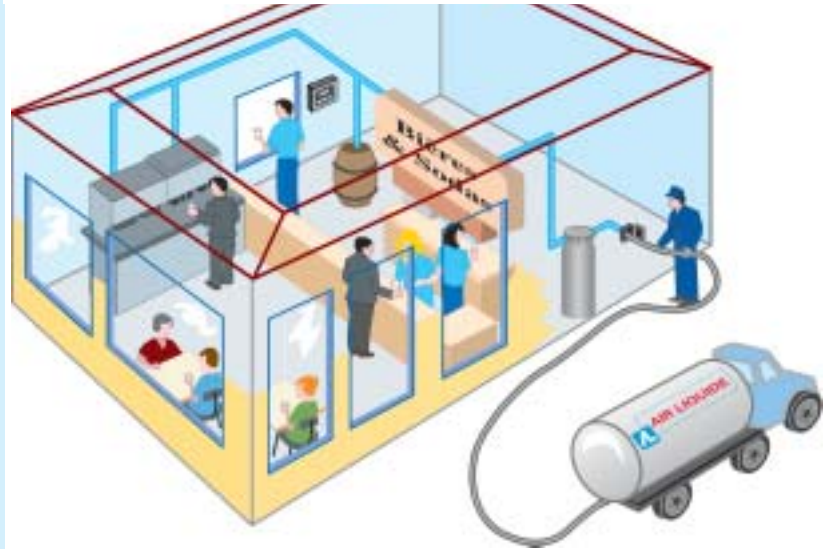
## Many uses in the food industry

Carbon dioxide plays a role in the production and preservation of many everyday products. This is true in the **food industry**, in which it is the fizzing and chilling element.

The **outstanding quality** of the products Air Liquide sells was developed to meet the strict requirements of large groups that produce carbonated beverages and soft drinks. Air Liquide gases conform to the laws in force and the requirements of the international standard HACCP\*. The Air Liquide offer, Aligal Drink, developed for beverage manufacturers, supplies carbon dioxide of **high quality for food use** that has met the challenges of food **safety** and **traceability** for 10 years.

For fast food chains, Air Liquide proposes a carbon dioxide delivery service. The gas is in liquid form so that the outlets can reconstitute their carbonated soft drinks by mixing the gas with water and syrup. This **innovative technology** is the perfect solution to the safety concerns of Air Liquide's consumers as they no longer have to handle bottles of gas. This gas is also used by bars and restaurants to draw off draft beer.

## Carbon dioxide delivery for soft drink reconstitution in fast food chains



In the form of dry ice, carbon dioxide is widely employed in the **cold chain**, enabling foodstuffs to be kept at the proper temperature. This gas is used for **quick-freezing, chilling** and **preserving foods**. So, for example, carbon dioxide snow protects **grape harvests** against oxidation and chills kneaders used by bakeries and batch mixers for meat.

Well-known distributors have chosen Air Liquide's carbon dioxide snow processes to handle **mixed**

**transport**. Fresh or frozen food products are transported in the same truck, alongside products kept at ambient temperature in special containers. Dry ice is used in **air transport** throughout the world. Nothing can match it today for keeping meal trays fresh. This gas is increasingly employed **for transporting, in total safety, food product samples or medical protocols** sent to analytical labs.

\* HACCP: Hazard Analysis & Critical Control Point



Dry ice pellets enable the cold chain to be maintained



Use of dry ice directly in containers during the grape harvest



## Interview with Maëlys Castella Corporate Marketing Manager, Industrial Customers



### What does the carbon dioxide market represent for Air Liquide?

Carbon dioxide is an important gas for the Group's Industrial Customers business as it represents over 10% of sales in this activity. The main market for carbon dioxide is the beverage market, which is responsible for 30% of our sales of this gas. Carbon dioxide is also used in many other industries: pharmaceuticals, electronics, transportation, water treatment, and so on.

Carbon dioxide sales are stimulated by the growth of markets in which it plays a role: environmental applications, beverages, food safety.

Moreover, as the innovation potential of this gas is very significant, we can look forward to a diversification of its applications and future markets.

### You've mentioned innovations. Can you tell us more about them?

The new developments are extremely varied and always responsive to our customers' needs. Today, Air Liquide

*Carbon dioxide contributes to our safety when it fills our fire extinguishers.*

devotes a large share of its research to food and environmental applications. As carbon dioxide has many properties that relate to these areas, it is the focus of several research programs. The strong points of this gas are primarily its bacteriostatic and chilling qualities and its use as a solvent and weak acid. Our Marketing and R&D teams are working together on developing innovative solutions based on these properties.

The bacteriostatic qualities of carbon dioxide enable it, among others, to maintain the quality and extend the shelf life of food products. The Group's teams are therefore enriching our Aligal brand so that the products you consume every day are improved, with even more freshness, quality and safety.

As it is transformed into a weak acid in water, we have, for example, used this property to treat industrial waters and have now extended this usage to the treatment of water in municipal swimming pools.

We have carried out work on carbon dioxide's chilling capacities that have led to promoting its use in liquid form as a replacement for refrigerants, particularly in industrial, domestic and automotive air-conditioning.

Its properties as a solvent or cosolvent, under pressurized and supercritical temperature conditions, have been used, for example, in cleaning and degreasing surfaces before painting instead of chemical cleaning systems. In addition, these properties have made it possible to extract very pure molecules such as perfumes and flavors, as well as caffeine in the coffee industry.

Our subsidiaries also contribute to developing new offers. In the agricultural sector,

Air Liquide Italy has created Aligal Flora, based on enriching the air in greenhouses with carbon dioxide to improve photosynthesis in plants.

As you can see, there is no lack of ideas and we often work in partnership or collaboration with customers and equipment manufacturers to develop new applications.

### Has Air Liquide created new services based on carbon dioxide?

Yes, Air Liquide is developing complete service solutions tailored to our customers bringing added value to their activities.

Aligal Drink is a high-quality carbon dioxide offer and a service as well, accompanying our customers in their certification needs and providing traceability.

In the transportation sector, the Cryo-Express subsidiary is specialized in express delivery of dry ice. It organizes all the shipment logistics worldwide of products kept under specific temperatures (frozen, fresh, ambient) by providing customers with adapted isothermal packaging, dry ice and the required means of transportation.

So, with good control of the environment, carbon dioxide represents a rich source of growth for the Group and real innovation potential to better serve our customers.

## Jean-Louis Etienne

The conference-debate with the physician-scientist *Jean-Louis Etienne* held on November 7 at the Palais de la découverte on the theme "Clipperton, the sentinel of the ocean – biodiversity and new energies" was a **big success**. Over 400 people, mostly shareholders, attended and put their questions to Jean-Louis Etienne and François Jackow, Vice-President, Research & Development and Advanced Technologies at Air Liquide.



## Air Liquide rewarded

Air Liquide, represented by the Chairman of the Management Board, Benoît Potier, was awarded the title of best-performing company of the year.

This recognition acknowledges a triple performance. First, Air Liquide's growth through increased sales. Second, economic profitability. And last, the share's dividend yield, which encompasses the change in share price as well as dividends.

These three objectives are central to Air Liquide and are an integral part of the Group's Shareholders' Charter and of its commitments to its many loyal shareholders. This loyalty is notably rewarded by loyalty bonuses.

So both Air Liquide's business model and growth strategy hold the place of honor. Growing while maintaining and



*The french Prime Minister, Dominique de Villepin, giving Benoît Potier the prize for the Chief Executive with the best performance of the year, created by Coface and the magazine Challenges*

increasing profitability is what Air Liquide's management has set out to do since the Group was created.

Very early on, in 1905 in Belgium then in 1907 in Japan, Air Liquide was able to win markets outside France. Today, the Group is continuing to take positions in emerging geographies like China and Russia.

More recently, the Group made certain growth choices, notably buying a large share of Messer's assets in 2004.

Tomorrow, innovation is in the spotlight, in particular with hydrogen in the energy sector and our growth in technologies, healthcare and services. This will enable the Group to continue its profitable growth for the benefit of the company and its shareholders.

## Shareholders' fair

The **Salon Actionaria**, a shareholders' fair, took place on November 18-19 at the *Palais des Congrès* was **very well-attended!** Many of you came to our stand to discover the broad diversity of our businesses

and the use of gas in our daily lives. This was also a perfect occasion to meet our Shareholder Services team members and find out about the advantages of registering your shares.



*Benoît Potier, Chairman of the Management Board, spent several hours at the Air Liquide stand during the Salon Actionaria. He met and spoke to shareholders and, in particular, to the members of the Air Liquide Shareholders' Communication Committee*



The renewed **Communication Committee** held a meeting in October with Benoit Potier to define the main themes for reflection for 2005-2006.

Several working groups were organized on the following subjects: written communication, the video presentation of the General Shareholders' Meeting, the shareholders' Internet site and the enlargement of the individual shareholder base.

We are happy to welcome four new members, Messrs. Laffolie-Horat, Steidle, Tessereau and Troussel.

## Shareholder's notebook

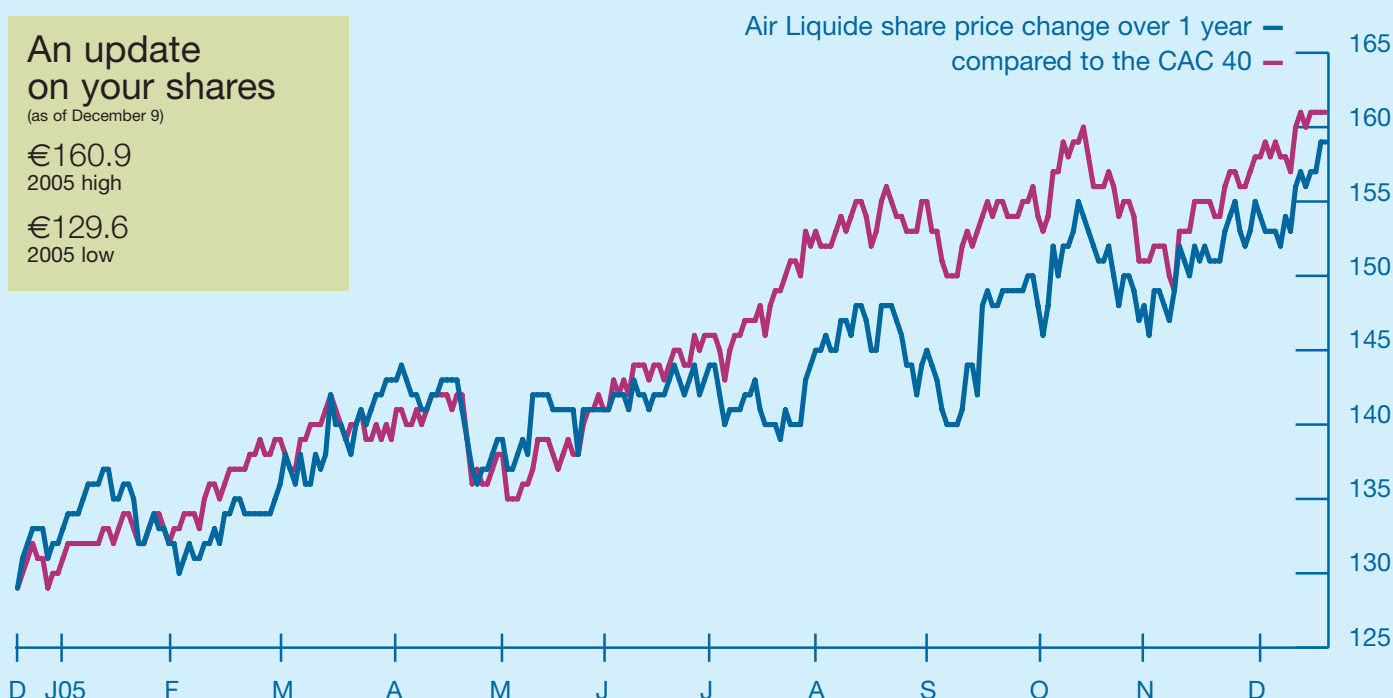
### An update on your shares

(as of December 9)

€160.9  
2005 high

€129.6  
2005 low

Air Liquide share price change over 1 year compared to the CAC 40



### Dynamic growth continues

**Sales over nine months** have reflected new growth in business. With an increase of **+11.2%**, sales reached **7,608 million euros**.

- Growth was given a boost by **hydrogen** consumption in refining and chemicals, demand for services in **Healthcare** and increased production capacity in **new territories**.
- There has been an acceleration of growth in **Asia** and a recovery in Japan.
- The environment continues to be favorable in industrial and electronics markets in the **Americas**.

- **European momentum** is being driven by innovative products and services.

**Benoit Potier, Chairman of the Management Board**, commented: « *We experience very high levels of activity in our engineering businesses and the signing of numerous contracts will underpin the Group's ongoing development in the months and years to come. In this context, excluding any significant exceptional items, we maintain our double digit net earnings growth target for 2005.* »

**January 26, 2006: full year sales for 2005**  
**February 27, 2006: full year results for 2005**

### Air Liquide meets you in 2006

May 10:  
General Shareholders' Meeting

#### Air Liquide information meetings

Starting on May 16:  
Nantes, Grenoble and Nancy

#### Information meetings organized by the FFCI and the CLIFF

June 6	Angers
September 19	Le Havre
October 23	Besançon
November 7	La Rochelle
December 18	Perpignan

# Letter to Shareholders



Ladies and Gentlemen, Dear Shareholder,

At its meeting on 8<sup>th</sup> December 2005, the Supervisory Board reviewed the Company's organization structure, and considering the application of the age limits provided for in the company bylaws for the Chairman of the Supervisory Board, has decided to propose to the Annual General Shareholders Meeting on 10<sup>th</sup> May 2006, to return to the traditional Board of Directors structure. The Supervisory Board, in agreement with the Management Board, will submit to a shareholder vote, the necessary changes to the relevant bylaws, the nomination of the present members of the Supervisory Board for the remainder of their existing mandates, together with the nomination of Benoît Potier to the Board. It will also be proposed to the Board of Directors to appoint Benoît Potier, as Chairman and Chief Executive Officer.

The organization structure, approved by the shareholders in November 2001, was proposed in order to ensure the transition to a younger management team and the continuity of our strategic objectives. It was based on a separation of responsibility, with a Management Board and a Supervisory Board, considered at that point in time the most appropriate.

This transition occurred, consistent with the principles of preparing for the future and for top management succession, implemented successively by Edouard de Royere and Alain Joly, in the interest of the company and its shareholders. The results delivered both in terms of business development and of management by the current team demonstrate that this transition has fulfilled its objectives.

The current proposal to return to a Board of Directors structure is consistent with the traditions of Air Liquide and supports the close relationship between management and the shareholders. Should this proposal be approved, this evolution will fully respect the rules of good corporate governance, to which Air Liquide has always vigilantly adhered. The principles of respecting shareholders' rights, ensuring the competence and independence of its Board members, and the clarity in its delegation of authority existing in the current structure will of course be maintained under the proposed organization.

This move will ensure Air Liquide's development over the long term whilst respecting its traditions. It recognizes the success of the team put in place in November 2001, under the leadership of Benoît Potier. I am convinced that this organization is consistent with the values of the Group and is the right model to ensure the future for the company and its shareholders.

Yours faithfully,

Paris, December 9, 2005

Alain Joly  
Chairman of the Supervisory Board