

## Sustainability

# Sustainability work, now an integral part of everyday business

Alfa Laval has continuously developed its sustainability work since the publication of its Business Principles in 2003. These were based on the United Nations Global Compact and were the result of a consultation process involving Swedish investors, trade-union representatives and employee representatives from the European Works Council, as well as sustainability consultants. The goal was to implement the Business Principles throughout the organization and ensure that work on sustainability became an integral part of business.

Today, Alfa Laval's operations are also managed in terms of their environmental impact, social responsibility, business ethics and transparency. Sustainability work truly is a fundamental part of the line managers' duties. As a result, much of the information formerly classified as "sustainability" information is now a normal part of the business and is therefore visible in other sections of the Annual Report. Thus, to avoid repetition, the sustainability section in this year's Annual Report is brief and mainly focuses on the key initiatives and improvements achieved in 2009 within the focus areas of the Group's Business Principles.

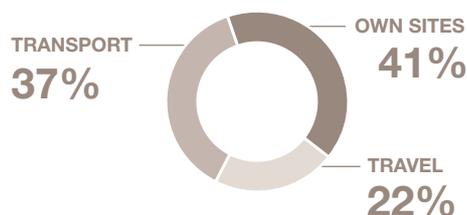
More detailed information, such as progress reports, new targets, auditing of compliance with the Business Principles, GRI-based cross references and main data, can be found in the sustainability section of the Alfa Laval website: [www.alfalaval.com/sustainability](http://www.alfalaval.com/sustainability). This section is continuously developed to facilitate the evaluation of Alfa Laval's efforts.

### Key initiatives and improvements in 2009

- Energy consumption analyses and reduction targets at the plants resulted in 7 new projects during 2009, bringing the total number to 57. A total of 30 projects were completed. See example on the next page.
- Greenhouse gas emissions from transportation of goods totaled 31 000 tons versus 39 000 in 2008. Approximately half the reduction was due to reduced production volumes. However if we had transported the same amount of goods as in 2008 the environmental impact would still be 10.5 percent lower due to the projects that were completed during the year.
- Lower production volumes and energy-saving projects contributed to reducing the energy consumption in manufacturing and service sites by 10 percent during the year. Alfa Laval's calculated carbon dioxide emissions from production and service facilities totaled 35,000 tons (33,000). Additional sites included in 2009 together contributed 200 tons. Calculated carbon dioxide emissions didn't reduce in proportion to the energy savings mainly due to changes in fuel sources used by electricity suppliers.
- The environmental reporting system was extended to a total of 78 sites (71).

- The integration of lifecycle assessments in the new product development process continued. In 2009, 19 (20) new products were assessed using LCA. Of these, 10 were replacements of existing products. The new products have a 9 to 60 percent smaller environmental impact than the products they replaced.
- Alfa Laval's supplier development process, aimed at improving health, safety and working conditions in developing economies, continued and expanded. Over 200 (126) suppliers in India, China, Mexico and Eastern Europe are now included in this process. Over 150 social inspections were carried out.
- A new Fair Competition Policy was introduced to improve the Group's knowledge and understanding of anti-trust legislation. Over 90 managing directors and global business managers attended central training sessions. The training will continue to be rolled out in the organization in 2010.

### Alfa Laval's carbon-dioxide emissions in 2009



TOTAL, TONS  
**85,000**

- A new Health and Safety policy was launched and a new reporting system was developed for implementation in 2010.

**Sustainability is a line responsibility, but priorities are set by senior management**

When the Business Principles were launched in 2003, it was stressed that they must apply to the whole organization. For this to happen, the regular line management had to be responsible for implementing improvements. At the same time, a management structure was developed to decide on group-wide priorities.

Alfa Laval's Board of Directors reviews results, progress, priorities and targets at least once a year.

Group Management sets annual goals, decides on priorities and allocates resources for all areas covered by the Business Principles, as a regular part of their meetings. They also discuss specific projects regarding social and business ethics in detail.

The Environmental Council is responsible for operational decisions, project establishment, results and progress reviews. It is also responsible for the environmental management system and data reporting processes and tools. It makes recommendations on priorities and targets to Group Management. The Council is run by the head of the Operations Division.

Based on the success of the Environment Council, a Health and Safety Council was set up in 2009. It has the same responsibilities as the Environment Council, but with a focus on Health and Safety, and is managed by the head of Human Resources.

**Increased global focus on sustainability is good news for Alfa Laval**

Most of Alfa Laval's product range is essential for saving energy, cleaning water and air and optimizing the yield from foodstuffs

- some of the key challenges involved in ensuring the sustainability

of mankind. Since the publication of the Business Principles, the internal focus on environmental issues has been strengthened. As has the drive to ensure that Alfa Laval's way of doing business does not add to social injustices and corruption.

During the same period, an increased global focus on sustainability has resulted in new rules and regulations. These not only support Alfa Laval's own efforts in the area, but also boost demand for the company's products.

- Sustainability has become an increasingly important issue for both society in general and corporations. One driving force behind this change has been the growing awareness of the risk posed to human life by climate change. Consequently, stricter environmental legislation encourages existing and future customers to select Alfa Laval's solutions, which can help reduce energy consumption.
- Concerns regarding climate change are driving targets for the reduction of greenhouse gas emissions in all industrial processes. This challenges Alfa Laval to set demanding targets for its own design, production, logistics and business travel activities. The current target is to reduce CO<sub>2</sub> emissions by 15 percent between 2007 and 2011. Allowing for fluctuations in sales volumes, Alfa Laval is deemed to be on target to achieve this goal.
- The search for sustainable energy sources and sustainable means of production has encouraged Alfa Laval to systematically identify, research and develop new "clean-tech" applications. New market opportunities have also emerged for the existing product portfolio to help industries improve their environmental performance.
- Pressure from non-governmental organizations and the media keep labor conditions in developing economies in focus. This pressure is important to help drive Alfa Laval's own initiatives throughout the supply chain.



## Green operations: Changing transports to the US

Transports have been identified as one of the biggest contributors to Alfa Laval's total CO<sub>2</sub> emissions. This sparked an initiative to launch a project to reduce the proportion of air transport of goods to the facility in Richmond in the US from sites in Denmark and India.

A team at the Richmond facility conducted a pre-study that showed that the main contributor of emissions was air shipments of materials from Kolding in Denmark and Sarole in India to Richmond. In order to maintain short lead times, low inventory costs and favorable flexibility, all of the goods transported from these sites in a single year arrived by airplane. This resulted in 1,085 tons of carbon emissions.

Following the pre-study, a project was initiated to change the means of transport from these two locations. Once the project was fully implemented, the aim was for 70 percent of shipments to be made by sea and the remaining 30 percent by air. The goal was to reduce carbon emissions by 70 percent. Although this change would also impact lead times, inventory values and required floor space, the effects would be offset by lower transport costs.

The project's first important breakthrough was noted in the period from August to October 2009, when the proportion of transports by sea reached 74 percent. The total CO<sub>2</sub> emissions for the period were cut by 70 percent and transport costs by 40 percent.

## Sustainability – Cases

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# All human climate footprints can be reduced

Alfa Laval's products play a key role in areas that are of vital importance to society, such as energy, the environment and food. Heating, cooling, separating and transporting are basic functions that meet the needs that arise in most industries. Alfa Laval's equipment can also contribute to reducing energy and water consumption and minimizing carbon dioxide emissions, an increasingly important element of the efforts to reduce the environmental impact caused by humans.

## ENERGY

### New heat exchanger dramatically reduces emissions

Compabloc, Alfa Laval's compact, fully welded heat exchanger, has been installed in a Brazilian petrochemical plant that produces cumene, a material used in such applications as the manufacturing of CDs. When the heat exchanger was put into operation, energy consumption declined by 3.4 MW, resulting in a reduction in carbon dioxide emissions totaling 13,800 tons.

A refinery in Canada opted to use a series of Compablocs instead of a traditional technology. With eight compact heat exchangers from Alfa Laval, an energy saving of 14 MW was achieved, compared with using traditional shell-and-tube heat exchangers. In turn, this resulted in a 39,000-ton reduction in carbon emissions annually.

The reduction in emissions in both of the examples above corresponds to the total emissions generated by all cars in Stockholm during nearly a month.



## FOOD



### More olive oil, less water

An Italian olive oil producer started its own olive mill and selected a module from Alfa Laval. The process of transforming olives into oil involves a variety of steps, including cleaning, pressing and separation. It also requires water. Using Alfa Laval's decanters and separators, water consumption can be reduced by nearly 70 percent. Waste products can also be treated and used as fertilizer.

## ENVIRONMENT

### PureBallast – protecting ocean ecosystems

In 2009, Alfa Laval's PureBallast product garnered increasing interest. Ballast water, which is used to stabilize ships, has become a major environmental problem that continues to grow. Ballast water carries microorganisms from one part of the world to another, where they have no natural enemies. When the ballast water is then emptied, these microorganisms are thus able to reproduce freely and destroy local ecosystems. In light of this problem, the UN International Maritime Organization (IMO) presented a bill proposing that all ships built from 2012 be subject to ballast cleaning requirements. As of 2016, this will also apply to vessels manufactured prior to 2012. Alfa Laval's PureBallast, developed in cooperation with Wallenius Water, was the first solution to obtain IMO approval. The technology is patented and based on ultraviolet light that neutralizes the microorganisms, without using chemicals. Approximately 80 systems have been sold in total.





#### NATURAL PROCESS # 4

ANIMAL / Dromedary

CASE / Oil company

TECHNOLOGY / Heat transfer

### A nose for ingenuity

Most people are aware that it can get pretty hot in the desert.

The dromedary is a popular animal and an extremely useful means of transportation in this hot environment. To keep their heads cool, dromedaries use a special cooling system that involves gathering water on the skin of their noses. The water comes from the air that is produced when the dromedary exhales, which is then cooled through the animal's long, winding nasal passages, enabling water to be formed – and stored on the nose.

This form of nasal heat exchange also protects the dromedary's brain from becoming overheated. Talk about a nose for ingenuity.

### Conserving energy in an energy-intensive production operation

The same natural heat exchange process used by the dromedary to cool its breath is utilized by a major oil company. The difference is that the company applies this process in reverse. And on a larger scale, of course.

The site of the project is a Canadian plant for the production of low-sulfur gasoline, a process that requires considerable energy.

Thanks to the plant's ability to transfer heat from hot surplus steam to cold water as it comes to a boil, which in turn can be used as energy for production, the company is able to reduce its energy consumption and emissions at the same time as it minimizes its costs for heat transfer.

In 2005, the project received an honorable mention in Canada's "Natural Resources Energy Efficiency Award Program."