



# 2006 Sustainable Development Report

| 2003

| 2004

| 2005

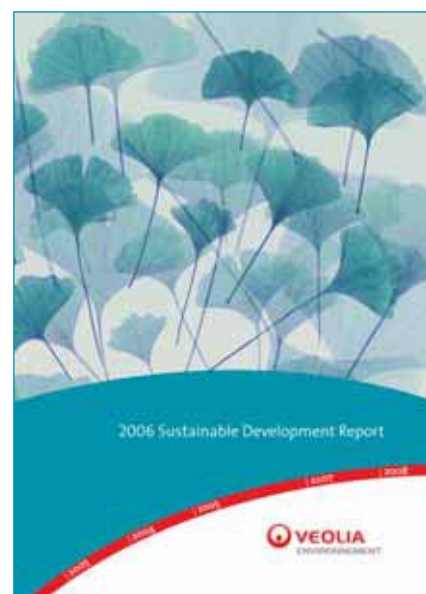
| 2007

| 2008



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The *ginkgo biloba* is the last descendent of a family of trees that flourished across much of the planet over 200 million years ago. The only remaining wild-growing population is to be found in Eastern China. Highly resistant to pollution, insects and disease, this tree is often used in urban replanting programs. It is also thought to have curative powers in preventing memory loss. We have chosen the *ginkgo biloba* (already used to illustrate our sustainable development reports for 2003, 2004 and 2005) as a symbol of the continuity of our approach to sustainable development.



*“Our goal is to set minimum environmental and social standards for worldwide application”*

2006 was a year of growth for Veolia Environnement: growth in our business, in every region of the world; and growth in our human potential, with our work force increasing from 270,000 to nearly 300,000.

I find it very satisfying that, despite the wide diversity of local contexts in which we operate, our growth remained in keeping with the emphasis on the long term that underpins our expansion strategy. Our ongoing efforts in employee training and in research and development are excellent examples of this attitude. Perhaps more important still is our company’s ability to express more clearly the exact nature of the challenges facing us in each of our activities, the solutions we have so far implemented and the challenges that remain to be dealt with. I want to keep on this track, and one of the best ways of doing so is to achieve our goal of setting minimum environmental and social standards for worldwide application. Such standards will structure the conditions under which we carry out our business everywhere in the world.

At the close of the year, our company’s environmental and social performance had been recognized by all of the principal non-financial rating agencies. Veolia Environnement is one of just four CAC 40 companies appearing in the FTSE4Good, DJSI, ASPI and Ethibel indexes. We must not rest on our laurels but take this as a reference point, or better yet, a marker, as we continue in our approach.

Following that reasoning, this sustainable development report has been designed with two purposes in mind: first, to place our actions in a long-term perspective and second, to be even

more transparent by improving the quality of our presentation and its depth of analysis. While the general layout of the report and the sections on quantitative indicators have remained the same in order to facilitate year-on-year comparisons, we have changed the nature of the topics covered. The innovations include our first coverage of sustainable construction and a more thorough presentation of our approach, including a description of our main lobbying efforts. Similarly, more detailed discussion of certain key subjects, such as diversity in human resources, climate change and our business’s footprint in developing countries reflect the continuous improvement approach that guides our thinking.

That our thinking has matured is shown by our decision to create an independent Sustainable Development Visiting Committee. Made up of people renowned for their expertise in and commitment to sustainable development, this committee will provide us with its opinions on our approach, the coverage of that approach in our sustainable development report and, beyond that, our sustainability policy. I would like to take this opportunity to thank everyone who has so kindly agreed to work with us on this project.

The creation of this committee is symbolic of the situation in which we find ourselves today—we are at the start of a new stage characterized by responsible action that is mindful of the expectations of civil society. The redefinition of our environmental and social targets, like the review of our sustainable development charter to take into account the new challenges facing us, are other signs. I am looking forward to seeing everyone at Veolia Environnement embrace this new movement and make it an integral part of their day-to-day work.

HENRI PROGLIO  
CHAIRMAN AND CHIEF EXECUTIVE OFFICER



# Our activities: challenges and responsibilities

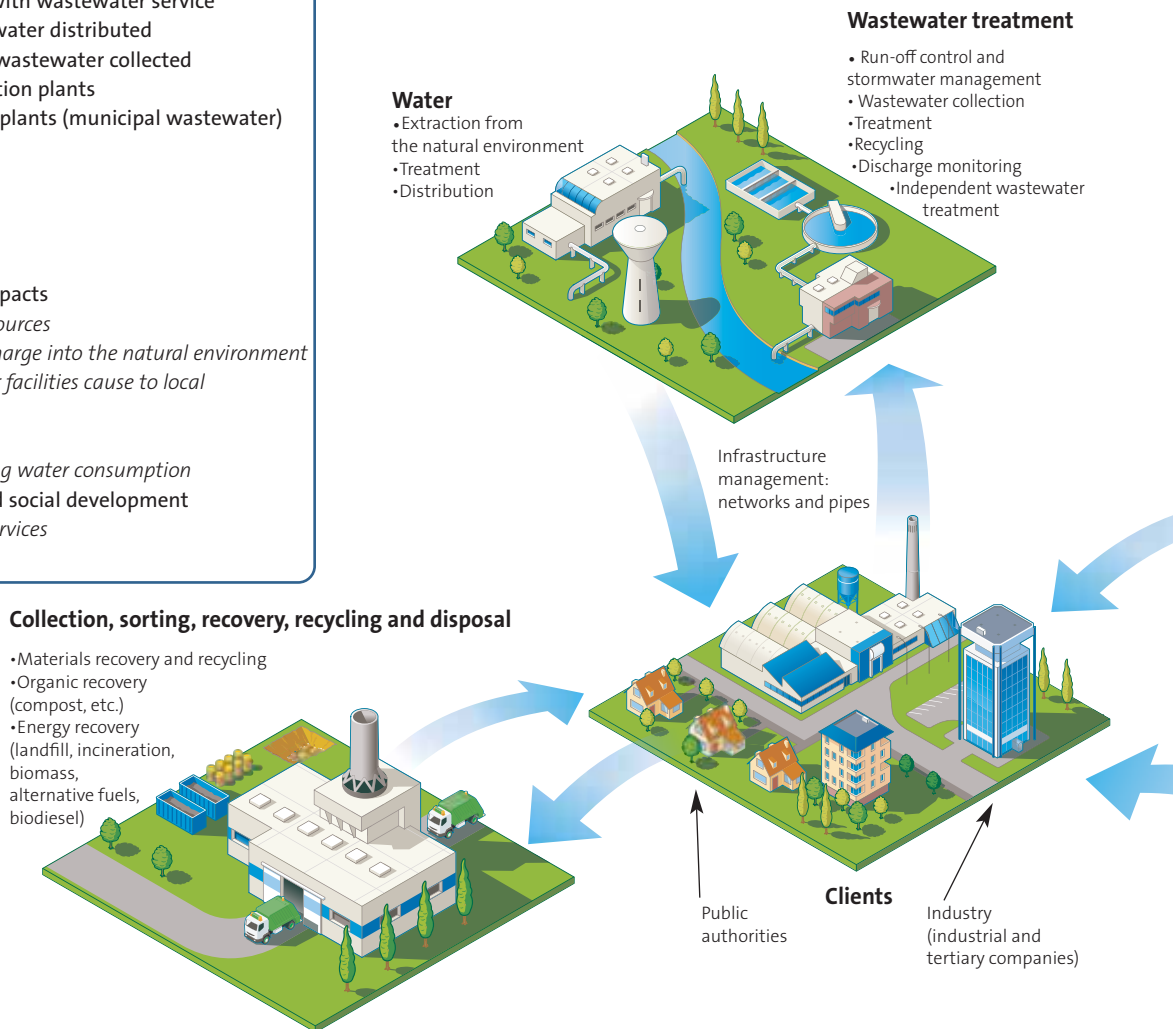
## WATER

### Key figures

- Revenue: €10.1 billion
- 77,841 employees in 59 countries
- 67 million people supplied with water service
- 49 million people supplied with wastewater service
- 6.61 billion cubic meters of water distributed
- 4.94 billion cubic meters of wastewater collected
- 4,159 drinking water production plants
- 3,112 wastewater treatment plants (municipal wastewater)

### Challenges

1. Conserve resources
  - Conserve water resources
  - Protect ecosystems
2. Limit our environmental impacts
  - Reduce pressure on water resources
  - Treat wastewater before discharge into the natural environment
  - Reduce the inconvenience our facilities cause to local communities
  - Treat and recycle by-products
  - Educate the public on reducing water consumption
3. Contribute to economic and social development
  - Improve access to essential services
  - Help improve public health



## WASTE MANAGEMENT

### Key figures

- Revenue: €7.5 billion
- 89,502 employees in 36 countries
- 63.9 million metric tons of waste treated
- 7 million metric tons of waste recycled
- 7.6 million MWh of energy (heat and electricity) sold from landfill and incineration operations
- 715 treatment units

### Challenges

1. Conserve resources
  - Conserve raw materials by optimizing recycling and materials, organic and energy recovery

### 2. Limit our environmental impacts

- Prevent water and soil pollution
- Combat climate change by reducing greenhouse gas emissions and using clean fuel for our vehicles
- Reduce atmospheric emissions (greenhouse gases, dioxins, volatile organic compounds (VOC), etc.)
- Collect, treat and recover materials from hazardous waste
- Educate the public about waste reduction and sorting

### 3. Contribute to economic and social development

- Define and establish minimum environmental and social standards
- Ensure regulatory compliance by our subcontractors and suppliers

## VEOLIA ENVIRONNEMENT

### Key figures

- Revenue: €28.6 billion
- 298,498 employees in 67 countries

### Challenges common to the four divisions

#### 1. Conserve resources

- Conserve water, energy and raw materials
- Conserve biodiversity

#### 2. Limit our impacts

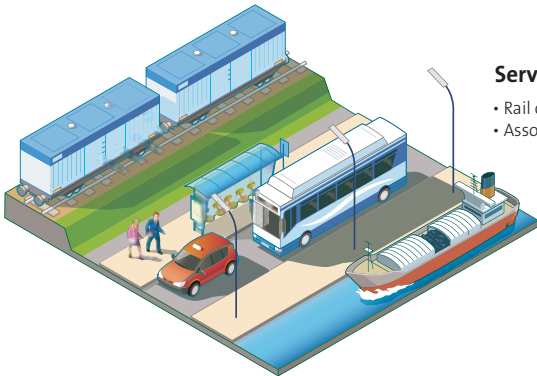
- Combat climate change by reducing greenhouse gas emissions
- Reduce polluting emissions
- Integrate our facilities into their environment through a sustainable construction approach
- Educate the public about environmental issues and the behavioral changes needed

#### 3. Contribute to economic and social development

- Ensure employees' health and safety
- Guarantee working conditions that respect human rights and comply with international labor standards
- Promote diversity and equal opportunities by fighting discrimination
- Encourage skills development and the upward mobility of our employees
- Support local economic growth
- Improve people's access to essential services
- Support research and development in order to respond to the needs of future generations

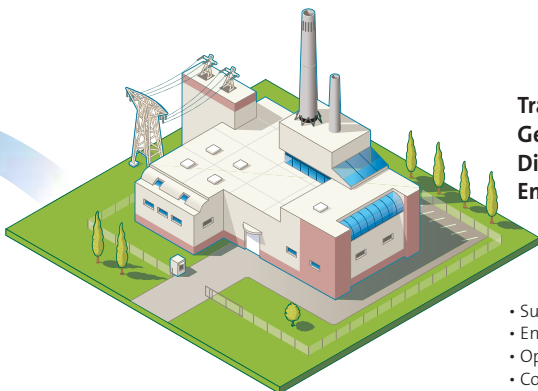
## Public transportation

- All types of ground and maritime transportation
- Transportation on demand and services for people with reduced mobility
- Management of mobility centers, transit centers, etc.



### Services to industry

- Rail cargo
- Associated logistics



### Transformation Generation Distribution Energy services

- Supply
- Energy mix
- Optimization of needs
- Comprehensive building management

## TRANSPORTATION

### Key figures

- Revenue: €4.9 billion
- 81,897 employees in 30 countries
- 1.8 billion kilometers covered
- 35,750 vehicles
- 806 sites
- 2.7 billion journeys

### Challenges

#### 1. Conserve resources

- Limit our fuel consumption
- Use non-renewable energy sources rationally

#### 2. Limit our impacts

- Increase the use of public transportation
- Improve our environmental performance by using biofuel and clean vehicles
- Anticipate the environmental risks associated with our activity

#### 3. Contribute to economic and social development

- Help local public authorities and industrial companies choose sustainable mobility
- Expand real-time passenger information
- Promote public transportation accessibility for everyone
- Provide staff training in sustainable development

## ENERGY SERVICES

### Key figures

- Revenue: €6.1 billion
- 48,789 employees in 35 countries
- 14 million people heated
- 96,000 energy systems managed
- 682 district and local heating and cooling networks managed
- 83,400 MW of thermal power managed

### Challenges

#### 1. Conserve resources

- Reduce our dependence on fossil fuel resources by increasing the percentage of renewable energy resources we use

#### 2. Limit our impacts

- Combat climate change by reducing greenhouse gas emissions through optimization of energy efficiency, the energy mix, integrated energy management and the use of renewable energy
- Educate the public about energy conservation

#### 3. Contribute to economic and social development

- Encourage energy conservation by increasing our energy optimization services offer
- Safeguard supplies by using energy from local renewable sources





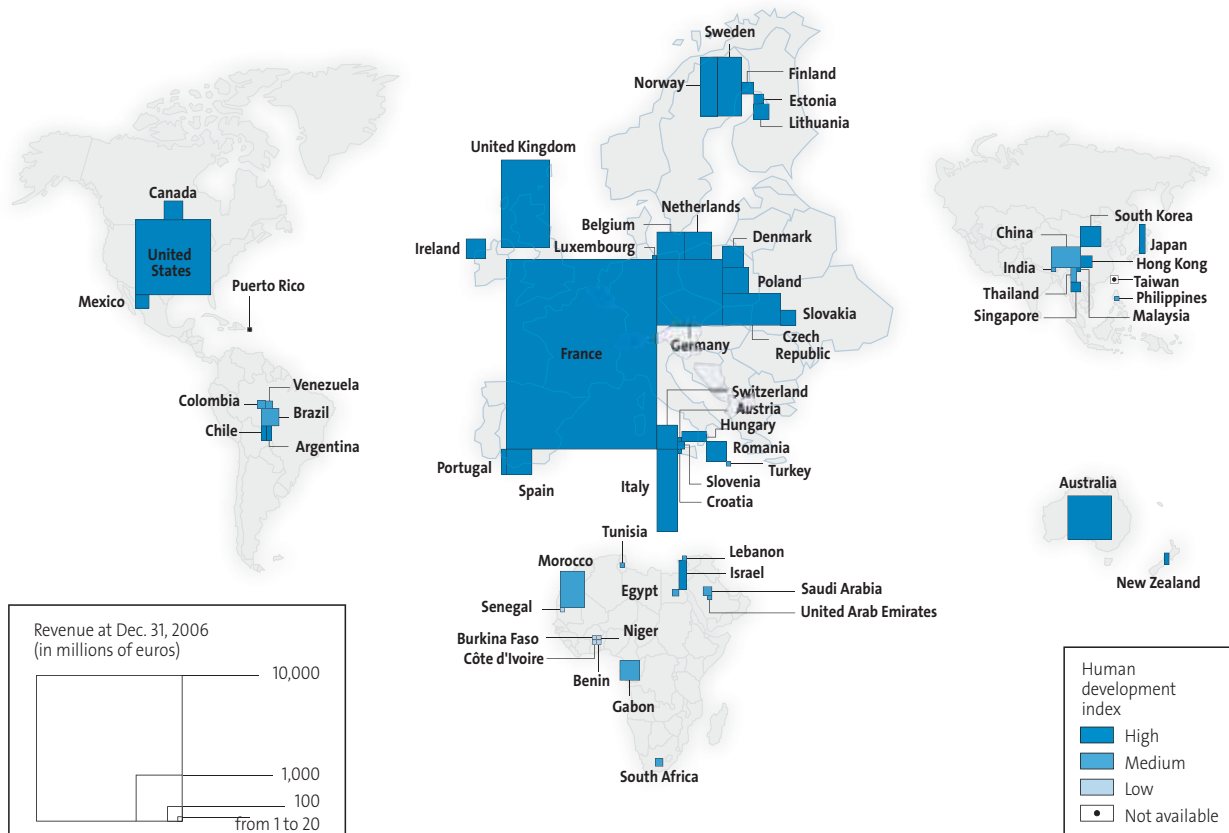


## Strategy

Since the start of the decade, Veolia Environnement has developed and implemented a strategy focused on a vision of a single environmental services business that integrates all its different activities and areas of technical expertise.

The definition of this strategy has primarily been driven by awareness of our municipal clients' expectations: we must be able to meet these expectations in terms of both services and commercial innovation across the full spectrum of the major issues in efficient urban management. *[cont. on p8]*

### 1. Presence of Veolia Environnement worldwide by revenue



[cont. from p7] The rollout of this strategy has revealed the growing technical convergence between our activities. Numerous issues that are essential to containing environmental impacts, controlling health risks and conserving scarce resources involve several of our divisions or call on their technical expertise.

Such is the case, for example, with combating *Legionella*, which can affect drinking water distribution networks as well as hot water systems; the treatment of sludge<sup>G</sup>, a by-product from wastewater treatment, is dealt with by our waste management division but also requires expertise in energy; renewable energy is generated by both Veolia Energy (Dalkia) and Veolia Environmental Services; and, more generally, all issues relative to combating global warming directly concern all our divisions.

Both inside and outside the company, there is a growing vision of sustainable development and all that it entails in terms of understanding its comprehensive reach and the interaction between the various environmental, social and economic issues involved. This vision is gradually instilling a sense of coherence that is helping our integrated services strategy to be understood and accepted.

In each of our activities, we are striving to move toward a comprehensive service offering, as illustrated by the contracts presented in the following pages. This enables us to implement the full range of our expertise within a framework of balanced and transparent partnership with our clients, for the maximum benefit of the people served.

### Veolia Environnement's presence worldwide

Our view of our company's social and environmental responsibility has been formed within the context of the global rollout of our highly specific growth model.

This model is unaffected by some of the usual problems facing large global corporations. Given the nature of its activities, our company is not concerned by the issue of relocation. As we expand internationally, the rationalization of our structure must fit with an intrinsically decentralized organization. One spin-off from this situation is that Veolia remains an active generator of employment, both in its new growth regions and in its more traditional markets.



**A model transposable to very different situations**

Our company’s revenue remains anchored in highly developed countries, but our global presence is gradually extending, and becoming increasingly deep-rooted and diversified.

Our company operates in 67 countries throughout the world (map 1). However, this fact should not hide the marked concentration of its revenue in a small number of highly developed countries.

Outside France, which in 2006 represented 47% of its business activity, our company reported 2006 revenue of €2 billion or more in three countries that together account for 44% of international revenue (United States, United Kingdom and Germany).

Around 90% of the revenue generated outside France is concentrated in just 20 countries where Veolia Environnement is close to or exceeds income of €200 million. The 46 remaining countries where Veolia is present currently only generate around 10% of revenue.

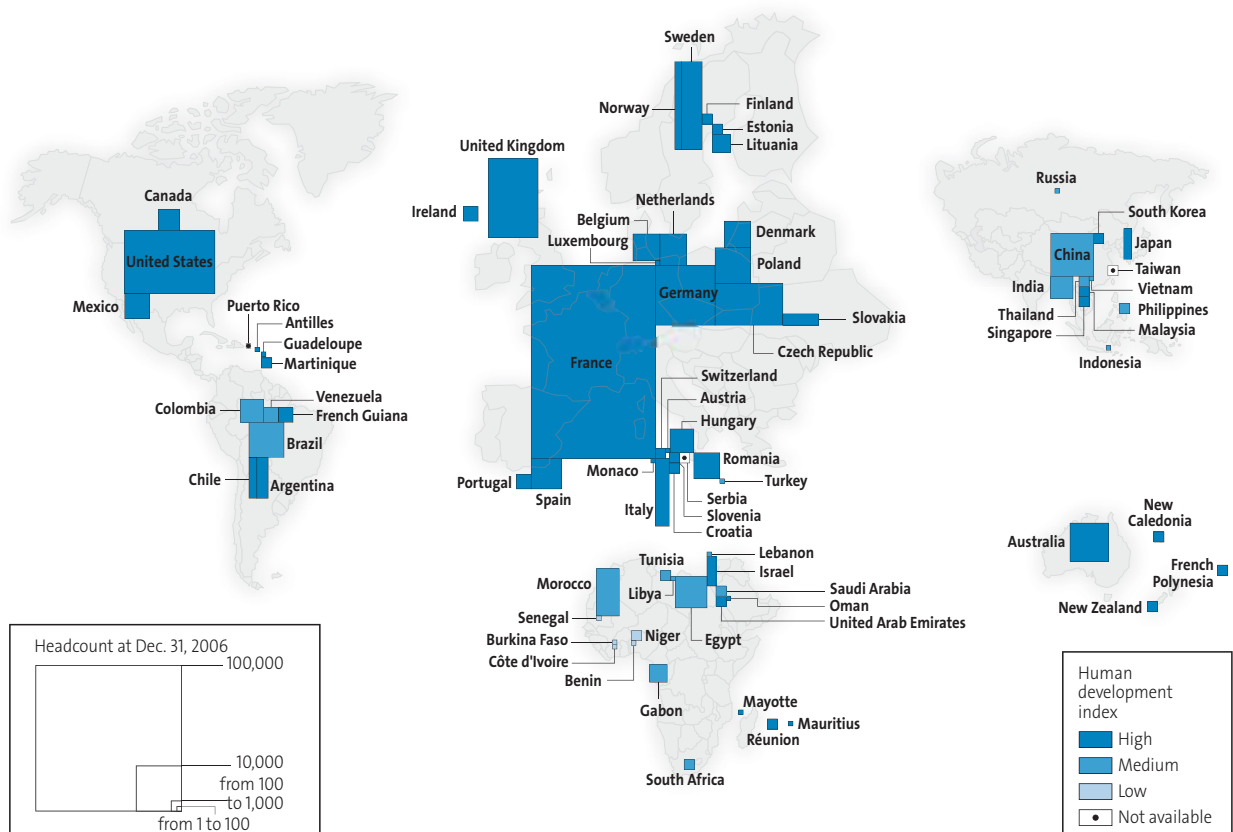
These 20 major countries already reflect the true diversity of the company’s global presence: they are located in Western

Europe (eight countries), Northern Europe (three countries), North America (United States), the Pacific (Australia), Eastern Europe (three countries), Asia (two countries) and Africa (two countries).

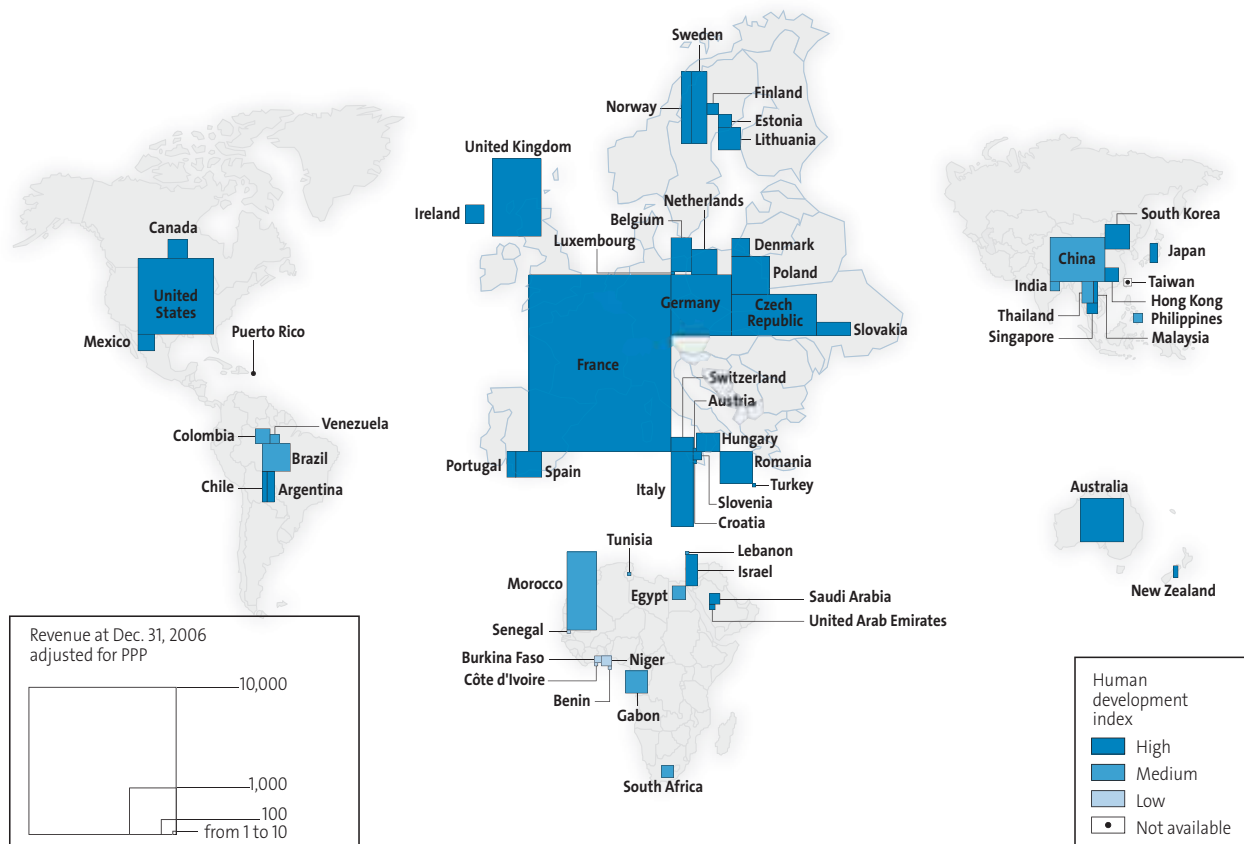
**Significant presence in emerging economies**

Taken in terms of human resources (map 2), Veolia’s presence in the world’s emerging economies or developing countries is much greater than the breakdown of revenue alone would indicate. Globally, one-quarter of the company’s employees work in these countries, which is more than double the regions’ corresponding share in our revenue. Of the 20 countries with the highest number of employees, nine are located in four regions: the new Eastern European democracies (Czech Republic, Poland, Romania and Hungary), Asia (China), Africa (Morocco, Egypt) and Latin America (Mexico and Brazil). This distortion is attributable in some cases to the structure of the activities developed in these countries, which are more labor-intensive (Brazil). The main cause, however, lies in the company’s human resources development model, which involves, within an ongoing move toward medium-term rationalization, the management of the employees taken over when it extends its scope of activity.

**2. Presence of Veolia Environnement worldwide by employee numbers**



### 3. Presence of Veolia Environnement worldwide by revenue adjusted for purchasing power parity



Obviously, this situation has a strong impact on the company's diversity. Its international growth is founded on using and upskilling local labor. The community of Veolia's 300,000 employees includes 13,000 Czechs, 9,000 Chinese, 6,000 Brazilians, 5,000 Moroccans and Egyptians, 3,000 Mexicans, 2,500 Indians, 1,500 Gabonese, 500 Nigerians, and so forth. This raises a serious challenge for their cultural and social integration within the company, which extends far beyond the challenges faced in the developed Western world.

#### Industrial presence undervalued by price effects

For identical services, selling prices differ greatly between regions with widely different purchasing power. Veolia's industrial presence (expressed as the number and size of facilities

managed) in the world's less wealthy regions is therefore undervalued (map 3). If revenue by region is adjusted for purchasing power parity (PPP)<sup>G</sup>, a discrepancy of 1 to 2.1 is evident in emerging economies and developing countries.

	Revenue	Revenue in PPP*	Ratio
New EU**			
entrants	1,808	3,523	2.0
Asia	771	1,842	2.4
Africa	681	1,538	2.3
Latin Am.	358	801	2.2
Total	3,618	7,704	2.1

\* Revenue in PPP: Revenue adjusted for purchasing power parity

\*\* EU: European Union

In some larger countries, the discrepancy can be even greater. For example, China accounts for around 1% of Veolia Environnement's revenue, but our industrial presence in China is closer to 4% of the company as a whole. This approach paints a different but no less

exact picture of our international presence.

#### The company's relative weight in foreign countries

Veolia Environnement has a long-standing presence in France, one that is diversified and deeply rooted in that country's economy and local life. Our "business model," based on the private management of public services under long-term partnerships, is well adapted to France's institutional, economic and business worlds.

These characteristics are far less common outside the company's traditional French borders.

Above all, if the company's weight is compared against a local wealth indicator, taking as the reference the French situation, it becomes apparent

that the countries in which Veolia Environnement can be considered as a major economic player do not always coincide with those where its revenue is highest.

Ratio of Veolia revenue to the GDP of several countries	France: 100
Morocco	126
Czech Republic	125
France	100
Lithuania	77
Niger	68
United Kingdom	15
Germany	11
United States	3
China	2

- In some emerging markets, in particular in Eastern Europe, Veolia has achieved a similar position in less than 10 years to that developed in the space of 150 years in France. The Czech Republic is the most outstanding example, but our growth in the Baltic States is also extremely dynamic.

- Our company has vast growth potential in the major developed and emerging economies. We will gradually tap into this potential as public-private partnerships open up in

the area of environmental services (United States) or as solvability becomes sufficient to pay for identified needs (China).

- Last, our company’s social responsibility in countries with a developing economy and where it has a significant footprint is highlighted in this approach. In these countries, Veolia is a major player from the economic, environmental and social points of view.

The analysis of our global presence and the role we play is an important aspect of our sustainable development strategy, which, as part of a coherent business model, does not dissociate our environmental and social responsibilities from our economic interests. Veolia is committed to continuing and indeed speeding up the definition of minimum global standards that will be applied to all its main activities in the environmental and social areas. These standards, which will apply wherever we operate, form part of what we feel are our responsibilities as the world’s leading environmental services company.



Chicago, Illinois (USA).



# Veolia Water

## *In his own words*

**ANTOINE FRÉROT** Chief Executive Officer of Veolia Water

*Throughout 2006 we witnessed a series of events that highlighted the extent to which water is of the utmost importance for everyone's future. These events also underlined the extent to which it has become urgent to take action. This was emphasized in the 2006 Human Development Report published by the United Nations Development Program (UNDP), which this time was devoted to water.*

*The World Water Forum in Mexico marked the recognition by all stakeholders of the universal right to water. Private operators requested that the means to make this right effective be implemented. To do so, stronger international solidarity seems essential. The approach has to be based on partnerships and efficiency, such that the modernization of water services—especially in the cities of the South—becomes a real priority.*

*Only in this way will we make the right to water a reality for all and thus continue to make our contribution to the United Nations' Millennium Development Goals. We are a long way off meeting those goals today, especially with regard to sanitation, the impact of which as an essential source of development should not be overlooked.*

*Another major challenge was highlighted at the World Water Week in Stockholm: that of transparency. Veolia Water is now a member of the Water Integrity Network (WIN) through its presence in Aquafed, the International Federation of Private Water Operators. Our membership is a demonstration of our conviction that growing access to water and sanitation for local communities can only be achieved through sound governance and the clear sharing of responsibilities between all stakeholders in the water sector.*

*Last, the question of water resources arose with increasing regularity throughout the year. And it will continue to do so in the years to come, even more acutely as a result of climate change. Here, our responsibility and expertise as an operator are clearly involved in providing appropriate technical answers with the lowest environmental and economic cost for communities, industry and the public. It is up to us to be the "conservers of scarce resources" such as water and energy, so as not to add to the ecological debt we are going to leave to future generations.*

## ① The issues driving change in our business

Each year, we assess the changes and the growing tension surrounding the increasingly crucial environmental, human and economic challenges we face.

Our 2006 assessment deepened our conviction that sustainable development, for a water and wastewater services operator, above all entails seeking concrete solutions, on a case-by-case basis, for each of our clients' services.

As such, three challenges, deeply rooted

in our corporate culture, remain at the heart of our action:

### 1. Ensure sustainable water management

Sustainable management of water resources is needed to maintain and protect the resources, both in terms of their quantity and their quality. The protection of extraction points, the prevention and reduction of chronic or accidental pollution, and the development of efficient wastewater systems are therefore essential. Veolia Water also pays close attention to the rational use of water resources by

helping reduce consumption, and by limiting the amount of water extracted from the natural environment. Last, recourse to alternative resources, such as desalination and recycling, are tried-and-tested solutions for reducing the pressure on our naturally available resources.

### 2. People at the heart of the water service

Water and wastewater services are provided thanks to the employees who work daily to ensure the quality and efficiency of the service and to meet customers' needs. Consequently,

training employees, making sure they have safe, durable working conditions and enabling them to progress throughout their career are evident priorities. Veolia Water is also committed to ensuring dialog with all stakeholders<sup>G</sup> to improve service and boost the attractiveness of local communities.

### 3. Foster access for all to water and good health

Water is a major factor in health, dignity and socialization, and is one of the keys to the balance and development of future society. Veolia Water is committed to contributing actively and responsibly to extending access to water. The company will take part in the international discussions and actions aimed at improving governance in the water sector, and contribute technical and operational solutions tailored to the expectations and payment capabilities of public authorities and the people they serve.

Wanting to rise to these challenges necessarily means wanting to see our profession progress. It means committing our corporate responsibility to a path of sustainability and transparency. It also means constantly challenging ourselves, using as the yardstick the changes in the world around us, the expectations of our clients and stakeholders, and the new environmental, technical and economic challenges. Thus, sustainable development is a driver for our profession's progress; it is leading us to:

- change our economic models through an appraisal of how we create value and to define a new model based on services and conserving scarce resources rather than on volume sales;
- change our ways of working through introducing innovative treatment processes, and permanently focusing on reducing our environmental footprint and that of our clients;
- change our role in society through more sustained and open dialog and greater focus on achieving stronger interaction with our stakeholders.

### 2 The challenges of climate change for Veolia Water

In 2006 Veolia Water undertook to promote treatment technologies that use less energy and, at some facilities, even generate alternative energy<sup>G</sup>. In particular, Veolia Water examined certain areas involving anaerobic fermentation and the production of recoverable methane gas.

The potential for drinking water to produce renewable energy has also been examined, and we now have a better understanding of the sources of our emissions. Above all, 2006 was the year that saw the emergence of the notion of the water sector's having to adapt to the effects of climate change. The activities of producing and distributing drinking water are and will be seriously affected by these issues and we need to find solutions today to be in a position to handle the changes that lie ahead.

Through its everyday actions Veolia Water is engaged in protecting resources and using alternative resources, and through its research programs it is reducing its facilities' energy consumption. The challenge of developing adaptation strategies has now become a priority.

### 3 The global water market

The issue of water and sanitation has become crucial in many countries because demographic growth is leading to increased water consumption, a deterioration in its quality and the need to implement efficient wastewater systems.

Today, the percentage of the world's population with access to a drinking water service provided by a private operator is between 6% and 7%, while the proportion of the population with access to a wastewater service operated or maintained by a private operator is around 4%. Veolia Water serves around 110 million people, that is, almost 2% of the world's population.



## Best Practice

### Lessons from the Mexico Forum

The 4th World Water Forum was held in Mexico from March 16 to 22, 2006, and was attended by representatives from more than 140 governments and international authorities, public and private operators, non-profit organizations and universities. The main lessons drawn from this forum were the following:

- unanimous recognition of the right to water and sanitation;
- recognition of the existence of a cost inherent in implementing this right;
- recognition of the World Water Council as a legitimate international authority.

Veolia Water attended this forum as a private water and wastewater service operator. Veolia's contribution concentrated on the transfer of expertise and skills, the spread of best practices and finding the right balance between North-South exchanges. The discussions were based on the presentation of three local experiences: water supply to villages in Mali, human resources development in Casablanca, and access to water and sanitation education for the most vulnerable communities in Morocco.

## SHANGHAI CONTRACT, CHINA: MANAGEMENT OF SHANGHAI PUDONG WATER SERVICES

Pudong is the first contract under which a Chinese public authority accepted having a private partner manage all its drinking water services, including billing and customer management. Veolia wanted to make this a showcase for its expertise in an area that still receives too little attention in China.

### WATER MOVEMENT CENTER

- Global management of the network using satellite images
- Geographical information system with detailed map of network
- Hydraulic model
- Network monitoring: installation of 400 flowmeters throughout the network in the longer term; today half are operational
- 442 employees dedicated to operations and network maintenance
- Network efficiency: 70.3% (+2% in 2006)

### HEADCOUNT

1,207 employees  
Over 30 hours of training per year and per employee (for over 90% of headcount) in 2006

### CENTRAL ANALYSIS LABORATORY

- + 920,000 meters for approximately 900,000 customers
- + 31,000 analyses in 2006
- Daily collection: sampling at all plants and 10 network points/day
- Water quality: bacteriological compliance = 99.9% and overall compliance = 95.6%

Emergency intervention on the network

Installations managed:  
8 pumping stations  
10 reservoirs  
6 treatment plants with a capacity of 1.4 million m<sup>3</sup>/day

### CUSTOMER CALL CENTER

- A single call number
- 24 hrs/day
- 98% of calls answered in under 15 seconds
- 327 employees dedicated to customer service

#### • ACTIVITIES:

- Water distribution
- Network management
- Customer services

#### • GOALS:

- Improve water quality
- Improve distribution
- Transfer of skills / employee training

#### • REGION:

Asia, China

#### • LENGTH:

Signed in 2002, for 50 years

#### • CONTEXT:

- Dwindling water resources (Yangtze and Huangpu rivers) coupled with growing requirements
- Complex infrastructure to be managed: 6 water treatment plants, 8 pumping stations and 10 reservoirs, via a 2,500 km network and over 920,000 meters
- Network renovation: reinforcement and extension work required
- Water requirements of Pudong inhabitants increasing, currently around 1.4 million m<sup>3</sup>/day, requiring extension of network and increase in connections

#### • NUMBER OF PEOPLE SERVED:

2.35 million

#### • HEADCOUNT:

1,207 people

#### • REVENUE (over 50 years):

€10 billion

#### • INVESTMENT:

Approximately €80 million over four years (2003-2006)





The decision was made in Pudong to bring the Customer Call Center, the Water Movement Center and the Central Analysis Laboratory together on the same physical platform. Customers are guaranteed faster response and the benefits of the single platform have been confirmed in emergency situations, i.e, water quality alert and breaks/leaks in a large pipe.

### 1 Customer commitments

- A “special situation” procedure is triggered if the Call Center records several calls from customers concerning deterioration in water quality in a given zone or notifying a large break or leak.

The Water Movement Center is immediately informed and coordinates all agents to deliver a rapid response.

- Consumer satisfaction: customer satisfaction surveys have been carried out every year since 2003 (industrial clients and households). After a four-year analysis of the findings, an action plan was defined to adapt services to customer expectations. Over 200 types of dispute were identified on start-up of the contract, of which 90% were resolved in less than two months.

- Definition of a Consumer Service Charter at end 2006 for Veolia Water China, which will be implemented by Shanghai Pudong Veolia Water Co.

### 2 Social commitments

- Enhancing the status of local employees through total transfer of personnel on changeover to public-private partnership<sup>G</sup>.

Guaranteed job security for all personnel and improved working conditions.

- Setting up an intensive training program at all levels of the organization (training center, on-site training, etc.) with the aim of enhancing service and guaranteeing service quality over the longer term. Strengthening managerial and technical skills while respecting and capitalizing on existing experience and culture, introduction of performance bonuses.

- Introduction of new health and safety procedures leading to improved working conditions.

### 3 Environmental commitments

As part of its environmental policy, Shanghai Pudong Veolia Water Co. undertakes to:

- comply with national and municipal laws and regulations
- identify, measure and assess the environmental impact of its activities and implement the necessary resources to reduce their impact
- reduce losses and consumption of natural resources: in concrete terms through rollout of the Environmental Management System<sup>G</sup>, which provides for precise mapping and zoning of the network and installation of 400 new flowmeters (around 200 currently being installed), allowing accurate and rapid detection of leaks. Special attention is paid to improving metering systems for “large consumers.”

### 4 Technical elements of the contract

To improve the quality of the water distributed, Shanghai Pudong Veolia Water Co. has to meet two major challenges: improve water quality and pressure and guarantee monitoring of quality throughout the production and distribution network.

The company has therefore mobilized its technical and scientific skills:

- new global network management techniques using satellite images, thanks to the SCADA system (remote monitoring and acquisition of data), for collecting information on water flow, pressure and quality in its production plants, pumping stations and at certain measurement points on the network, along with real-time monitoring;
- hydraulic modeling of the network: water quality monitoring system. The model can be used to establish the best distribution scheme for the available water. In an emergency situation, the model supplies pipe network operating parameters;
- installation of a Geographical Information System (GIS) to provide precise maps of the 2,500 km Pudong network, thanks to satellite images.

# Veolia Environmental Services

## *In his own words*

**DENIS GASQUET** Chief Executive Officer of Veolia Environmental Services

*The recovery of waste—as secondary raw materials, compost or energy—is now a reality. We are very active in all of these areas and our significant research and development efforts aim to increase recovery rates, reduce the environmental impacts of the various forms of treatment, develop new recovery methods and create new, durable treatment processes.*

*The question of energy, and that of the reduction of greenhouse gases, is one of the prime concerns of politicians and economic decision-makers, as well as of the companies and local public authorities that are our clients. In this respect, biomass offers huge potential because it is renewable and carbon neutral. Its development is a major aspect of European energy and environmental policies.*

*Veolia Environmental Services is active in all the new bioenergy processes and is a direct participant in the French government's biogas and biofuel production programs. More broadly, all our activity helps reduce greenhouse gases through energy recovery, recycling and biogas capture.*

*The collective awareness of environmental issues, which has translated into national and international regulations, has completely redefined the waste management sector—its essential contribution to waste recovery and recycling is now understood. By maintaining its technological lead in all its areas of expertise, Veolia Environmental Services contributes actively to protecting the natural environment and saving raw materials. We are also playing a crucial role in the switch from managing waste to conserving resources.*

## 1 The issues driving change in our business

Veolia Environmental Services is very aware of its social and environmental responsibilities as a company that handles all forms of waste at all stages in the treatment chain, and regularly develops technologies that turn waste into a resource.

Veolia Environmental Services acts to conserve natural resources and is focusing its strategy on:

- increasing the quantity of materials sorted and recycled (new raw materials), both in “traditional” areas (paper, cardboard, plastics, and ferrous and non-ferrous metals) and in new areas (Waste Electrical and

Electronic Equipment—WEEE);

- development of alternative energy<sup>G</sup> (biomass<sup>G</sup>, solid recovered fuel—SRF, etc.);
- positioning in the management of end-of-life products (WEEE, end-of-life vehicles and ships, dismantling oil and gas platforms, etc.) and industrial deconstruction (building dismantling and soil decontamination at disused factory sites for redevelopment);
- expertise in the recovery<sup>G</sup> of hazardous wastes;
- educating the public in the need to generate less waste, reuse more and sort better at the source;
- conservation of natural environments and the rehabilitation of sites as new living areas (expertise

in water and wastewater treatment and soil decontamination).

## 2 The challenges of climate change for Veolia Environmental Services

Worldwide, Veolia Environmental Services focuses on reducing GHGs<sup>G</sup> through the implementation of various mechanisms (CDM<sup>G</sup> projects, domestic projects and use of biomass). The waste sector accounts for around 3% of the world's GHG emissions (2.3% in the European Union). The reduction of GHG emissions is one of Veolia Environmental Services' key objectives, for which it uses the following levers:

- improved recovery and conversion into energy of biogas<sup>G</sup> at landfills<sup>G</sup>, especially in countries where there are no regulatory requirements: implementation of Clean Development Mechanism (CDM)<sup>G</sup> or Joint Implementation<sup>G</sup> projects;
- increased generation of energy (electricity or heat) from landfill gas and direct sale of the gas to industrial or public partners;
- cooperation with our clients to develop recycling, especially for glass, paper, aluminum and steel;
- optimized generation of energy (electricity and heat) at our incineration plants by developing partnerships with local consumers (companies and local public authorities);
- use of biofuels<sup>G</sup> produced from waste (used food oil) in our collection and transportation activities;
- maximum use of alternative means of transportation for conveying waste (rail and barge);
- optimized “green” vehicle technology, and training our drivers in rational driving.

## SEVEN PROPOSALS FOR A RESPONSIBLE APPROACH TO WASTE MANAGEMENT



*As a contribution to the public debate, Veolia Environmental Services has drawn up proposals outlining both fundamental principles and concrete measures aimed at improving waste management policies and practices. Viewed as part of a sustainable*

*development rationale, they encourage the implementation of social and environmental practices that contribute to combating climate change by limiting GHG<sup>G</sup> emissions.*

- 1. Return organic matter to the soil, thereby restoring the soil's quality (organic recovery).*
- 2. Use waste to save raw materials (materials recovery).*
- 3. Optimize the use of waste as a major source of renewable energy (energy recovery).*
- 4. Take action at all levels (national, Europe, world) to manage waste in ways that are socially responsible, to protect the environment and to foster research and education.*
- 5. Encourage the development of alternative transportation for waste and the use of clean fuels.*
- 6. Introduce tax incentives and financing policies that encourage better waste management.*
- 7. Institute an “environmental police force” to enforce a harmonized legal framework.*

> The complete document can be downloaded from:  
[www.veolia-environmentalservices.com/](http://www.veolia-environmentalservices.com/).

## 3 The global waste management market

The waste sector is becoming increasingly globalized, with more and more waste being produced everywhere. It is estimated that the total volume of waste collected worldwide is between 2.5 billion and 4 billion metric tons (excluding construction and demolition waste, and that from mining and agriculture). The prevention and reduction of waste at the source are therefore prime objectives. Nonetheless, waste is a potential source of materials and energy that is far from fully exploited. Treatment methods vary according to local conditions: where waste is concerned, there truly is a notion of “national thinking.” Through materials, organic and energy recovery<sup>G</sup>, waste becomes a resource, a secondary raw material, resulting in less reliance on primary natural resources and reducing GHG<sup>G</sup> emissions. The development of new recovery<sup>G</sup> techniques goes hand in hand with the emergence of new sales outlets for the recovered products, thereby resulting in a circular, environmentally sound economic chain.



## Best Practice

### Dismantling end-of-life ships

Expertise in complementary activities now enables us to take up a new industrial challenge—the dismantling of ships. For the past decade, Veolia Environmental Services has provided subsea surveying and inspection, and carried out maintenance operations on ships and oil and gas platforms (surface preparation, descaling, high-pressure cleaning and decontamination). In September 2006 Veolia Environmental Services opened a North Sea base in Lerwick (Shetland Islands) where offshore oil and gas platform components are sent at end of life to be sorted, decontaminated and dismantled. Veolia is also one of the founding partners in the Mer-Bretagne competitiveness center, the role of which is to provide solutions to issues of safety and sustainable development in the maritime environment.



## SHEFFIELD CONTRACT, UNITED KINGDOM: INTEGRATED WASTE MANAGEMENT

The United Kingdom has developed a public-private partnership approach for the waste sector under which operators are responsible for all waste streams generated within the area covered by the contract, for the long term and on the basis of ambitious targets. We believe this integrated management system is exemplary in terms of the clear responsibilities assigned to the private operator.

### HEADCOUNT

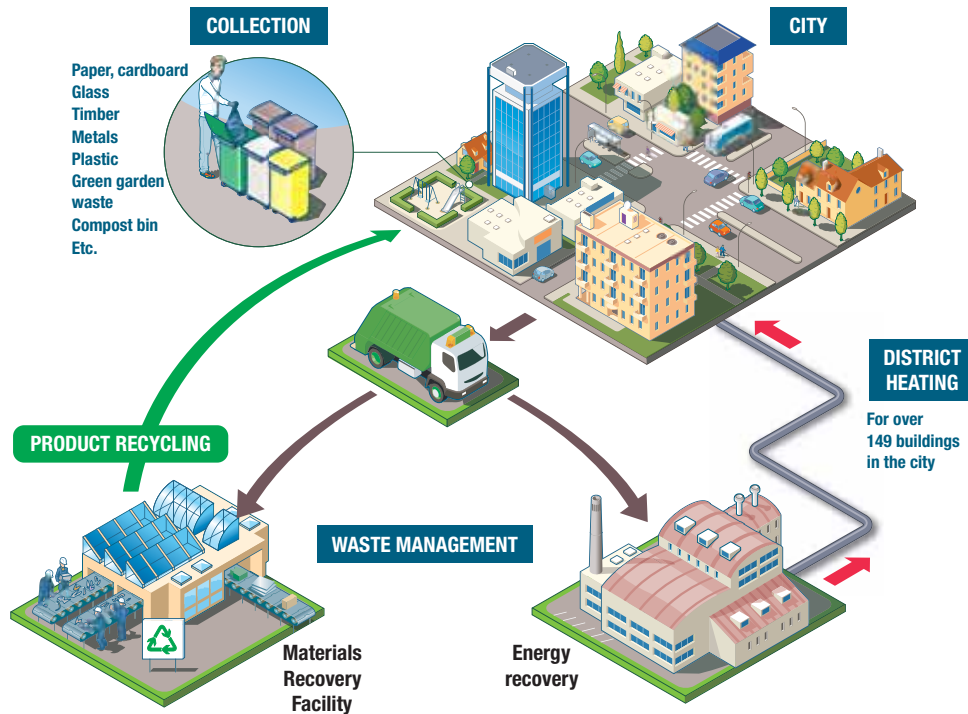
- 275 employees in 2006
- 80% of staff attended one or more training courses (1% of the payroll was dedicated to training) and all managers received training
- 7 employees were promoted
- All managers and supervisors attended a “diversity at work” training course
- A “dignity at work” training course is being held for all staff members throughout 2007

### WORKING WITH THE COMMUNITY

- Promoting recycling and encouraging waste reduction through education and waste awareness:
  - Communication campaigns
  - Workshops, discussions with local communities
  - “Recycling champions”
  - Mobile information unit
  - Schools programs
- Investing in the Sheffield area through the Landfill Tax Credit Scheme

### COLLECTION

- Domestic waste collection: service provided for 217,622 households
- Paper and cardboard collection (“blue bin” service) for 193,000 households
- Green garden waste collection from 45,000 households
- Textiles and cans collection trial to 12,000 households
- Correct collection rate: 99.95%
- 237,953 metric tons of municipal waste was generated in 2006



### IMPROVING MATERIALS RECOVERY

- Infrastructure managed:
- A Materials Recovery Facility with a paper and cardboard throughput of 20,000 metric tons per year
  - 5 Household Waste Recycling Centers and 200 bring banks across the city
  - Waste recycled or composted: 22% in 2006, compared with 4% in 2002
  - Paper and cardboard (1,600 metric tons collected monthly)
  - Textiles and cans
  - Green garden waste

### DEVELOPING ENERGY RECOVERY FROM WASTE

- Infrastructure managed:
- Energy Recovery Facility built to the latest environmental regulations (waste incineration directive)
  - Designed to handle up to 225,000 metric tons of waste generating up to 60 MW of thermal energy and up to 21 MW of electrical energy
  - Supplying heat and hot water to 149 buildings, saving over 12,000 metric tons of CO<sub>2</sub> in 2006

#### • ACTIVITIES:

- Collection and recycling
- Energy Recovery Facility
- District Energy
- Materials Recovery Facility

#### • CONTEXT:

- Integrated waste management contract
- Long-term sustainability
  - Long-term security for local authority
  - Secure financing for high-value capital projects

#### • LENGTH: Signed in 2001 for 35 years

#### • SHEFFIELD:

+500,000 inhabitants and around 240,000 metric tons of waste produced per year

#### • GOALS:

- Encourage waste reduction
- Achieve:
  - 21% recycling
  - 61% from energy recovery
  - Residual (18%) landfilled

#### • REGION: Europe, UK

#### • HEADCOUNT: 275 employees

#### • REVENUE:

- Sheffield contract revenue: £35 million (2006) = €51.5 million
- VES revenue (worldwide) = €7,377.2 million
- This contract represents 0.7% of total VES revenue

#### • INVESTMENT:

£80 million = €117.5 million

## 1 Social and environmental aspects

### Working with Sheffield's community to encourage waste reduction through education and awareness raising

From the beginning of the contract, Veolia Environmental Services has approached the waste reduction requirement of Sheffield's contract proactively. It has worked with Sheffield City Council on a series of communication campaigns designed to increase awareness of waste issues, encourage waste reduction and engage all sectors within the community.

#### Schools waste awareness program

Veolia Environmental Services also works with Sheffield City Council on a schools program, helping to deliver workshops, interactive sessions, games and crafts to city schools. In 2006, 15 waste education sessions were delivered to young children, while 70 waste education sessions were delivered to schools. Weekly recycling education sessions also take place at Whirlow Hall Farm Trust, a local charity providing residential visits to schoolchildren. In 2006 Veolia Environmental Services joined forces with the farm to deliver sustainability and recycling activity sessions.

#### Waste awareness

Workshops and discussion sessions with local community groups are frequently undertaken.

The Mobile Information Unit is present at many local events and in the city center at key dates throughout the year. As an information point, it promotes the "3Rs," "Reduce, Reuse, Recycle." Education and awareness sessions are often timed to coincide with local and national events such as Compost Week and Environment Day.

#### "Recycling Champions"

The "recycling champions" campaign encourages local people to take ownership of recycling efforts in their area. A total of 2,500 inhabitants are now registered. They receive information packs, newsletters, advice and support on recycling campaigns, and invitations to special events. One of these was a Fashion Show where Sheffield fashion students displayed outfits made completely from waste materials.

#### Students and recycling

As an important university destination, Sheffield has a large transitory population to persuade into good waste management practice. A two-year recycling campaign is currently targeting the city's students to raise awareness and encourage participation in recycling.

### Funding of community projects

The landfill tax credit scheme was introduced 10 years ago in the United Kingdom as a means to lessen the impact of landfill sites in neighboring communities. Veolia Environmental Services voluntarily donates 6% of its landfill tax liability to the Veolia Trust, a registered charity and environmental body. Two recent projects were financed in the Sheffield area:

- in 2005, the renovation of a disused building in Sheffield enabled it to be transformed into a functional family development center. The new center offers a wider service to parents, carers and children in a disadvantaged and deprived part of the city;
- in 2006, the funding of a new cycle track, built to race standard, replaced one that had fallen into disrepair.

### Customer satisfaction survey

A second satisfaction survey carried out in 2006 showed that the vast majority of respondents, around nine out of 10, were satisfied with the different waste management services they received. Moreover, recycling was important to 85% of respondents. The survey showed a significant increase in people's participation in recycling (from 40% in 2004 to 90% in 2006).

## 2 Technical aspects

At the start of the contract in 2001 Sheffield was recycling and composting 4% of its municipal waste. Working with Sheffield City Council, Veolia Environmental Services has developed an integrated waste management program aimed at achieving 21% recycling (objective reached in 2006 with a recycling rate of 22%) and 61% from energy recovery, with the residual (18%) landfilled.

Veolia Environmental Services operates five Household Waste Recycling Centers and maintains over 200 bring banks across Sheffield. The Materials Recovery Facility has a paper and cardboard throughput of 20,000 metric tons per year, with the capacity to deal with a further 5,500 metric tons. The Energy Recovery Facility has a waste throughput capacity of 225,000 metric tons of municipal solid waste and plays an important part in the city's innovative approach to waste management, generating up to 21 MW of electricity and up to 60 MW of heat for the District Energy Network. The network of pressurized hot water pipelines under the city supplies heat to 149 buildings, saving over 12,000 metric tons of CO<sub>2</sub> annually.

# Veolia Energy/Dalkia

## *In his own words*

**OLIVIER BARBAROUX** Chief Executive Officer of Veolia Energy (Dalkia)

*The world's population has increased fivefold since the start of the 20th century and will reach 9 billion by 2025. This demographic growth, combined with the increasingly rapid spread of consumer habits until now restricted to developed countries, will inevitably lead to higher energy consumption. We are confronted by a dual challenge as a result of this trend: how to manage increasingly scarce energy resources and anticipate climate change. Our response to these challenges must involve consuming less energy than we currently do, and thinking up new sources of energy for the future.*

*As a leader in energy efficiency, the responsibility of Veolia Energy (Dalkia) is to confront these new*

*constraints, which are already finding an echo in the changing expectations of our public authority and industry clients. The measures we have taken on more than 96,000 energy systems have already enabled us to reduce by 15% the energy that would have been consumed had we not acted.*

*In the coming years we will step up our efforts and, thanks to our R&D, we will extend our renewable energy offering, biomass in particular. Whenever possible, we will develop integrated energy management which, in addition to improving the energy efficiency of facilities, enables us to reduce end-use energy intensity.*

## 1 The issues driving change in our business

Our energy performance contracts enable us to respond to the main challenges facing our sector, namely, to limit increases in energy consumption and CO<sub>2</sub> emissions. These are set to rise by 21% and 27% respectively in the coming decade, according to the projections of the International Energy Agency (IEA).

### 1. Generate energy savings: from energy efficiency to integrated energy management

Veolia Energy (Dalkia) achieves reductions in energy consumption in two ways. The first is to improve the energy efficiency of systems by optimizing the transformation of the primary energy (fuel) into useful energy (heat, steam, cooled

water, etc.) and then optimizing the distribution of this useful energy through to its point of use.

The second way to reduce consumption is to decrease end-users' energy intensity, for example, by consuming less heat or cold to maintain comfortable temperatures inside a building. In 15% of our contracts, we implement this approach by leveraging a variety of factors, such as the operation of interior energy systems or managing intermittent operation.

Other levers should enable us to achieve further significant reductions in end energy consumption; these include influencing consumer behavior, and improving building envelopes, as well as their energy systems and the industrial process.

## 2. Optimizing the energy mix

Veolia Energy (Dalkia) also optimizes the energy mix, which involves using energy with a low CO<sub>2</sub> emission factor. Operating multi-energy systems is the core of the company's activity and is a significant driver for the use of low-emission energy, even when responding to variations in demand, which can at times be considerable and very rapid. Small individual systems are not conducive to this type of optimization, but the development of the use of collective systems is making it possible. Veolia Energy (Dalkia) also uses monitoring and management systems to develop the ability to manage a series of separate systems in such a way as to optimize the total energy mix. Last, new system designs or upgrades made under a long-term energy performance contract are significant

opportunities to make more use of low-emission energy sources.

At present the consumption of 7.8 million tOE primary energy breaks down into a majority of gas (56%), then coal (28%), heating oil (5%), and around 5% renewable<sup>G</sup> or alternative<sup>G</sup> sources of energy.

### 3. Develop the use of renewable energy

Veolia Energy (Dalkia) currently operates around 100 thermal power plants fired by biomass<sup>G</sup> and its development teams are working on significantly boosting this number of facilities. The current areas of development are concentrated on biomass. These resources hold considerable potential with, firstly, an immediately exploitable forestry resource equivalent to approximately twice the forestry mass currently used; and secondly, the potential of farm biomass, which will eventually account for 60% of biomass energy. Work is also being carried out on other types of renewable energy, such as geothermal, which is currently used for around 20 district heating networks<sup>G</sup>, and solar to generate electricity and produce hot water. By 2015-2020, the consumption of primary energy managed by Veolia Energy (Dalkia) from renewable or alternative sources should be close to 15%.

### 4. Seeking new solutions

Veolia has research programs in each of these areas aimed at improving the performance of existing techniques and technologies (biomass combustion, anaerobic digestion, emission treatment, energy storage, co-combustion of biomass and coal, etc.), and developing future solutions (gasification, fuel cells, CO<sub>2</sub> capture, etc.). We will also be focusing our efforts on reducing end energy consumption through Energy Demand Control (EDC), and promoting high energy-performance buildings.

### 2 The challenges of climate change for Veolia Energy

In order to achieve short- and medium-term reductions in CO<sub>2</sub> emissions, the measures put forward by the IEA include energy savings (58%), the development of renewable sources of energy (20%), optimized energy mix (12%), and nuclear energy (10%). Veolia Energy (Dalkia) is positioned in the first three of these proposals, which account for 90% of the potential reduction.

While the primary energy<sup>G</sup> we used in 2006 emitted 20.6 million metric tons of CO<sub>2</sub>, overall we reduced emissions by more than 4.2 million metric tons of CO<sub>2</sub>. Integrated energy management leads to significant energy savings and therefore a reduction in the emission of greenhouse gases<sup>G</sup>. Optimizing the energy mix, the use of renewable or alternative sources of energy and cogeneration also contribute to cutting CO<sub>2</sub> emissions. By 2015-2020, through the growth in our business and the improved efficiency of our solutions, Veolia Energy (Dalkia) will have achieved energy savings and CO<sub>2</sub> emission reductions comparable to its current consumption and emission levels.

### 3 The global energy market

At the European level, the energy services market is currently worth €25 billion for 120,000 jobs. It is a rapidly growing sector driven by the prospect of dwindling fossil fuel resources and the need to combat climate change. The sector's growth is also attributable to the broader range of services being made available and integrated management of energy quality is driving growth at Veolia Energy (Dalkia). The sectors in which the greatest effort is required are industry, housing and health care.



## Best Practice

### Solar energy in Spain

In 2006 Veolia Energy (Dalkia) Spain began installing and operating thermal solar panels on new housing projects in Madrid—a total of 840 housing units, for a total investment of €757,000. The panels generate thermal energy used to heat domestic hot water and so reduce the quantity of conventional fuel required. The reduction in the consumption of primary energy has been estimated at 30% to 35%, a 10% reduction in the total consumption (hot water + heating) of primary energy over a full year. The initial results confirm this estimation.



## VÉNISSIEUX CONTRACT, FRANCE: MANAGEMENT OF A DISTRICT HEATING NETWORK

The combination of contractual stability and integrated management has made it possible to achieve very positive environmental results under excellent economic conditions over the medium term.

### OPTIMIZE THE ENERGY MIX

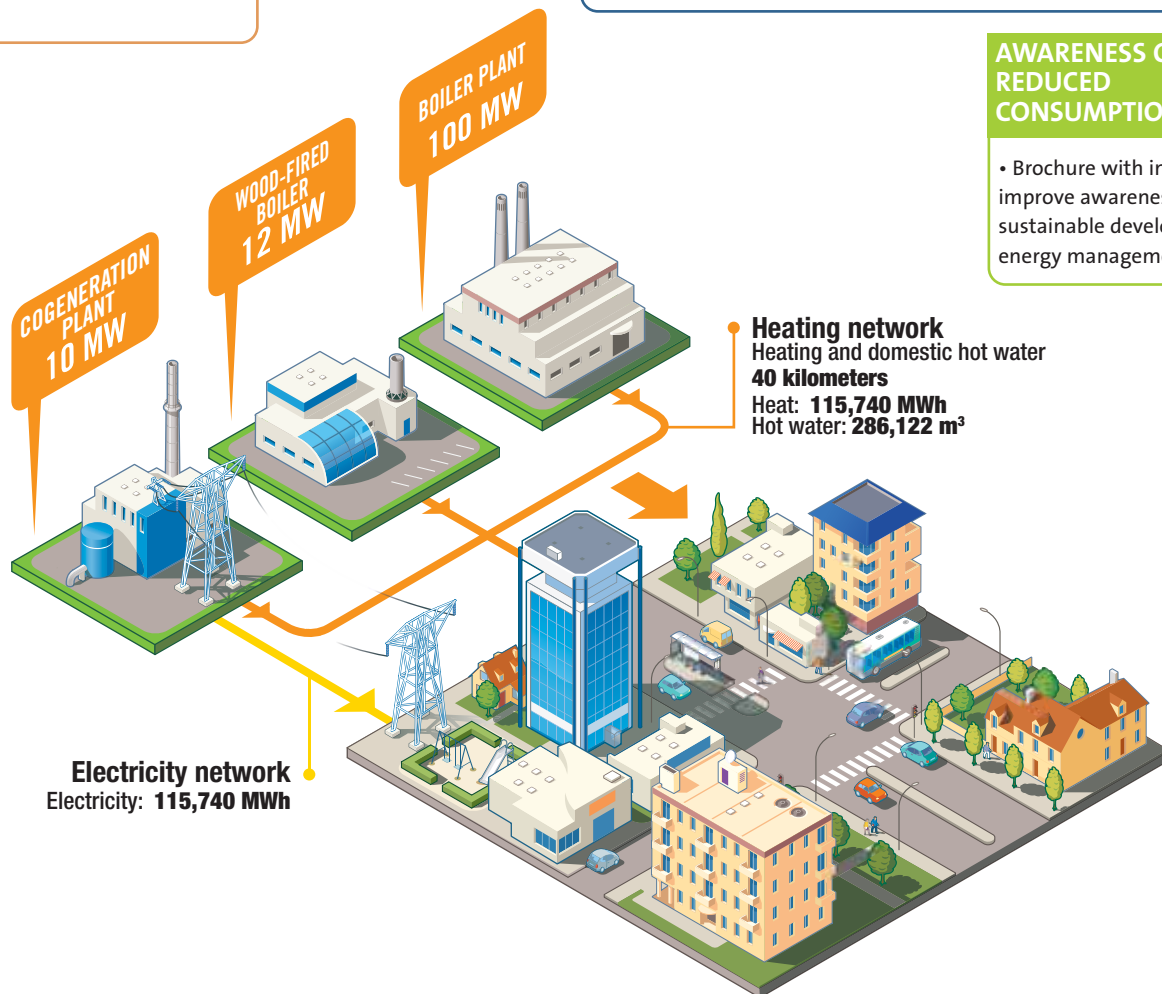
- Fuel used:
  - Heating oil: 43%
  - Gas: 42%
  - Wood: 15%
- Reliance on heating oil: 100% in 2000, only 40% in 2006

### REDUCE ENVIRONMENTAL IMPACTS

- In 2000, installation of continuous emission measurement and analysis equipment
- Renewable energy as a percentage of the total energy consumed: 15%
- Emissions avoided:
  - 6,880 metric tons of CO<sub>2</sub> in 2002; 19,700 metric tons of CO<sub>2</sub> in 2006
  - 30% less dust particles compared with 2002
  - 44% less sulfur dioxide compared with 2002

### AWARENESS OF REDUCED CONSUMPTION

- Brochure with information to improve awareness of sustainable development and energy management



#### • ACTIVITIES:

- Boiler plant management
- Management of the city district heating network

#### • CONTEXT:

- Increased energy bill due to higher cost of energy derived from fossil fuels

#### • GOALS:

- Update the equipment
- Protect the environment
- Diversify energy sources and contain costs
- Improve supply reliability
- Guarantee improved user comfort

#### • REGION:

Europe, France

#### • LENGTH:

The rider including biomass was signed in 2006, extending the contract through to 2014

#### • VÉNISSIEUX:

12,900 housing unit equivalents (9,655 apartments, schools, health care centers, and sports, leisure and culture facilities)

#### • HEADCOUNT:

16 employees

#### • INVESTMENT:

Cost of the installation (wood boiler and cogeneration plant) = €14 million

#### • 2006 REVENUE:

€9 million. This contract represents 0.14% of the annual revenue of Veolia Energy (Dalkia)

#### • PRICE CHANGE:

Since 2002, the price of the MWh has increased at a slower pace than if energy derived from fossil fuels alone had been used.  
- The price of hot water has stabilized below what it would have been had the energy sources not been diversified.

The City of Vénissieux (France) contracted Veolia Energy (Dalkia) to manage the Les Minguettes boiler plant and the heating network that provides heat and hot water to housing units, schools, health care centers, and sports, leisure and culture facilities. Veolia Energy (Dalkia) has overseen the continual upgrade of these facilities to ensure the best user comfort, improve service reliability, upgrade equipment, diversify energy sources, contain costs and protect the environment.

### 1 Social aspects

In 2001 the boiler plant was fired solely with heating oil (high viscosity oil). The switch to renewable<sup>G</sup> or alternative<sup>G</sup> energy—animal fat, wood and cogeneration<sup>G</sup>—provided the solution to the problem of our clients’ rising energy bill. With a boiler exclusively fired with heating oil, the cost of heating was entirely indexed to the cost of oil and the euro/dollar exchange rate. Recourse to renewable or alternative energy, such as wood and animal fat, has made it possible to stabilize the energy bill and the price per megawatt-hour sold to users by limiting the impact of the volatility of exchange rates and the rising cost of crude oil. The use of wood is a significant factor in stabilizing the energy bill as its price is relatively unaffected by fluctuations in the energy market.

To help our clients cut their energy bill, Veolia Energy (Dalkia) Vénissieux distributed brochures at local meetings detailing nine simple things people can do everyday to help save energy.

Focusing on wood, which is available and managed in the Rhône-Alpes region, also helps develop the regional economy and local employment (handling, preparation, etc.).

### 2 Environmental aspects

The Vénissieux boiler plant’s improved energy mix has gradually helped reduce energy costs and cut pollution emissions, especially CO<sub>2</sub>, since 2001.

In 2002 Veolia Energy (Dalkia) replaced 16% of the heating oil used to fire the boiler with an original form of renewable energy: animal fat. This switch led to savings of 6,880 metric tons of CO<sub>2</sub> right from the first year.

In 2006 Veolia Energy (Dalkia) optimized the boiler plant’s energy mix by building a wood-fired boiler, which now supplies 15% of the energy, and a gas-fired cogeneration plant that supplies 42% of the energy, mix. As a result, CO<sub>2</sub> emissions have been cut by 19,700 metric tons, dust particles by 30% and sulfur dioxide by 44%.

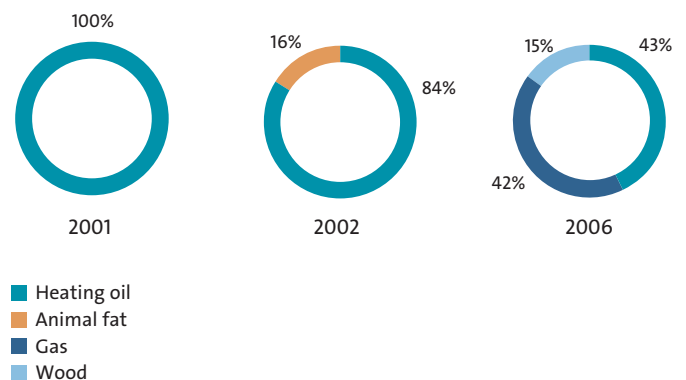
A total of €6 million has been invested to replace part of the energy generated from heating oil with energy generated from wood. As a source of energy, wood has high environmental qualities: a biomass<sup>G</sup> product, unlike fossil fuel energy, wood is a renewable source of energy. Further, its use is carbon neutral as it is a natural part of the carbon cycle because trees absorb CO<sub>2</sub>. The medium-term goal is to raise the share of renewable energy from 15% to 35% by increasing the amount of energy supplied from wood.

### 3 Technical aspects

Diversification of the energy sources used to fire the boiler plant:

- a 15 MW wood-fired boiler tapping into emerging supply markets based on recovery and forest maintenance and supplying a low cost source of energy;
- the installation of a 12 MW cogeneration (natural gas) system, chosen because of its high energy performance for the combined production of electricity and heat (overall performance of 75%).

THE VÉNISSIEUX CONTRACT ENERGY MIX



# Veolia Transport

## *In his own words*

**STÉPHANE RICHARD** Chief Executive Officer of Veolia Transport

*Two dominant trends are determining changes in public transportation: the steady increase in the number of city dwellers and the size of cities, and combating climate change. These trends presuppose that we are collectively able to change the means and availability of transportation by getting people out of their cars and into public transportation, and moving toward less polluting forms of technology. As a central player in inventing and implementing these changes, we are thus becoming a mobility operator. Greater attention to our clients' expectations is the first factor driving this shift in our business model. Understanding those expectations implies making public transportation a truly viable alternative to the private car through improving its quality, and making rail freight an alternative to transporting goods by road.*

*Our innovations are technological: they include solutions such as real-time passenger information, payment by mobile phone and multi-operator data interfaces. They are also sociological: improved quality of customer call centers, transportation on demand, transportation designed for people with disabilities, etc.*

*At the same time, we need to improve the management of the environmental impacts of our entire activity. This is why we are developing an energy diversification policy for our vehicles, with an emphasis on clean energy, and the construction of "green depots." To steer this policy and measure its effects, in 2006 we launched a study to assess the eco-efficiency of the means of transportation we operate.*

## 1 The issues driving change in our business

Veolia Transport is adapting its business to the economic and social changes taking place in cities, to the increasing number of passengers and the accompanying environmental challenges.

### 1. Promote competitive means of transportation

To achieve this, we participate in reorganizing mobility in consultation with public authorities, in order to serve their territory and provide a closer match to their needs. In urban areas, the improved operation of bus, metro and light rail systems aims to make public transportation a truly viable alternative to private cars.

Our employees pay attention to what passengers say, for example, by attending community association

meetings. We improve real-time information for passengers to boost transportation fluidity and facilitate network use. This is achieved through the management of data interfaces between operators connected to our customer call centers, and the development of flexible payment systems. On a bigger scale, we are developing alternative solutions to freight transportation by road. After Germany, Veolia Transport is developing its rail freight business in France and the Netherlands, an activity that is in line with the expectations of both governments and industry. On average, one train equates to 40 trucks taken off the road.

### 2. Reduce the environmental impact of our transportation systems

Veolia Transport helps limit pollution generated by transportation and protect

the quality of our environment. The promotion of public transportation in urban areas reduces air and noise pollution; similarly, the transfer of freight from road to rail contributes to the reduction of greenhouse gases, and lessens the risk of road accidents.

Veolia Transport wants to do everything in its power to reduce environmental nuisances. In 2006 this commitment led to the construction of green depots (40% energy savings); conservation of non-renewable resources by recycling vehicle wash water, such as in Rennes, France (68% potential savings); and above all the use of clean fuels. Almost all our road vehicles now run on fuel with a very low sulfur content, and almost 15% of the Veolia Transport fleet can be

qualified as clean due to the use of biofuels<sup>G</sup>, particle filters and Compressed Natural Gas<sup>G</sup> (CNG). Lastly, 5% of our vehicles are electric. Between 2001 and 2005, these different measures enabled us to cut the pollution generated by our fleets by 20% at the local level; a further 5% reduction is targeted by 2008.

### 3. Make our mobility services accessible to all

To do so, Veolia Transport adapts to the needs of passengers in remote or less densely populated areas. We provide “on-demand” services that passengers can order as and when required. At the end of 2006, Veolia Transport acquired SuperShuttle in the United States. This transportation-on-demand company uses 1,200 vehicles to transport 8 million passengers a year to 25 airports. Veolia Transport also organizes on-demand services for people with disabilities using specially equipped vehicles and trained assistance and driver personnel. In 2006 on-demand services accounted for almost 20% of the trips made by our services.

## 2 The challenges of climate change for Veolia Transport

By developing public and alternative transportation, we contribute to reducing the number of vehicles on the road (personal cars and trucks), and so to cutting GHG<sup>G</sup> emissions.

A bus or a coach emits between 80 and 90 grams of CO<sub>2</sub> equivalent per person per kilometer traveled, whereas a private car emits twice as much. More than 60% of our drivers have been trained in “professional quality driving,” which can lead to fuel savings of between 5% and 20%. The use of electric vehicles and biofuels for our fleets cuts GHG emissions by 12% to 15%. Our “journey eco-efficiency” study applied to 44% of our trips has enabled us to calculate that we have contributed to avoiding 2.1 million metric tons of CO<sub>2</sub>, as travel by public transportation generates three times less CO<sub>2</sub> than the same trip by private car. Veolia Transport hopes to use the financial mechanisms stipulated in the Kyoto Protocol<sup>G</sup>. Using the Clean Development Mechanism<sup>G</sup> would facilitate the implementation of mass transit projects, especially in the countries of the South. Veolia Transport is also in favor of using the carbon trading system for the transportation sector at the national level.

## 3 The global transportation market

The public transportation market is worth €460 billion, of which 15% is open to competition. It is a rapidly growing sector: in 2016, it will be worth €750 billion, of which 30% will be accessible. The sector’s main growth drivers are increased travel and trade; the rapid rise in urban concentration worldwide; awareness of the environmental impacts of transportation; public transportation priorities adopted by governments and public authorities; and the gradual liberalization of these markets. In Europe, the opening up of the road and rail markets (especially in the United Kingdom), the growth in trade resulting from the extension of the European Union and the lack of transportation infrastructure in Central and Eastern Europe are generating considerable growth prospects. In North America, the market’s rapid growth is linked to increased recourse to contracted services, the growing interest in the French version of public-private partnerships<sup>G</sup>, and the rail expertise of European operators, as cities install heavy transportation systems.

In Asia, recently opened markets are undergoing very rapid growth; many under-equipped countries have launched ambitious investment programs, especially in rail. At present, there are few international players in these markets with the ability to tailor the resources rolled out to local needs. Lastly, the mass transit market in Europe is a growing sector currently worth €15 billion.



### Best Practice

#### Access to transportation for people with disabilities

In February 2005, French law made it compulsory for transit authorities to make transportation systems accessible for people with disabilities. Veolia Transport feels it is important to disseminate guidelines. The various types of disabilities (motor, visual, auditory and mental) are presented, and advice given to drivers about how to assist, communicate with and support PRMs under the best possible conditions on board the vehicle. This guide has also helped open up dialog between the company, PMR associations and local public authorities.



## ROUEN CONTRACT, FRANCE: MANAGEMENT OF AN URBAN TRANSIT SYSTEM

It has become essential to factor sustainable development into the integrated management of urban transit systems. Economic and environmental performance must be accompanied by high levels of social and community awareness: the Rouen contract is an excellent illustration of these points.

### INFORM

- Fixed information on schedules, and real-time visual and audible information at all TEOR Rapid Bus Transit stations and at the light rail system stops
- Customer information service at central control centers
- Web site and i-mode technology
- “Allo Métrobus” telephone information service

### ACCESS FOR ALL

- Taxi service for isolated areas
- Transportation-on-demand for people with disabilities: 70,000 trips a year
- Bus: access ramp for wheel chairs in buses and raised station platforms
- Light rail: accessible stations
- TEOR: accessible stations, raised platforms, direct access to the vehicle

### SAFETY

- Central control station to track operations
- Initial six-week driver training course
- Training budget: €1.2 million
- Specific training for the 300 light rail and TEOR drivers
- Annual knowledge review for licensed drivers
- Quarterly vehicle inspections



### REDUCE ENVIRONMENTAL IMPACTS

- Fleet of 191 buses, 66 TEOR sets and 28 light rail sets
- Usage: 40 million trips per year, up 59% since the light rail system entered service
- Buses equipped with clean engines, particle filters, biofuels—15% reduction in GHGs, i.e., 2,971 metric tons of CO<sub>2</sub> per year
- Pollution emissions\*: 9.2 grams/trip in 1994, 5.2 grams/trip in 2006
- Bus depot near city center to limit emissions

\* Controlled pollutants: particulates, carbon monoxide, unburnt hydrocarbons, nitrogen oxide

### AWARENESS

- 30 mediators
- Accident prevention sector (Citizen forums: 25 presentations and awareness sessions for 1,250 students; City Raid Adventure: 7 junior high schools, 468 children; “Dégrad’action” anti-vandalism program)
- Priority Education Networks
- Civic conduct advertising campaign

#### • ACTIVITIES:

- Construction and maintenance of the light rail system
- Operation of the transportation network

#### • CONTEXT:

- The Rouen urban area defined the services, pricing and quality, and invested in resources
- TCAR (Greater Rouen mass transit operator) made commitments on passenger numbers, costs, contract compliance and safety, and manages the network’s operation, contributes its multi-business expertise and is responsible for management of all social aspects.

#### • GOALS:

- Promote access for all
- Reduce environmental impacts
- Generate awareness and promote sustainable mobility
- Inform, and ensure safety

#### • REGION: Europe, France

• **LENGTH:** Signed in 1991 for 30 years, operations started in 1994

#### • GREATER ROUEN:

Population of 411,000, 45 districts

#### • HEADCOUNT:

1,108 employees, of whom 661 drivers, 40 inspectors, 30 mediators

#### • 2006 REVENUE:

€68.9 million in 2006, i.e., 1.4% of Veolia Transport’s annual revenue

#### • INVESTMENT:

In accordance with the usual model for urban transit systems, the city is responsible for basic infrastructure (e.g., vehicle replacement) and TCAR for standard operating investments.

## 1 Social aspects

In Rouen, TCAR (the Greater Rouen mass transit operator) is responsible for all social aspects.

→ Customer satisfaction

- Customer satisfaction surveys are carried out every three years by an external organization. The results are processed and used to redefine the commercial policy and correct any significant points raised.
- Complaints procedure: all complaints receive an answer within 30 days.

→ “Professional and quality driving” training.

- The training budget represents 4.5% of the payroll, i.e., €1.2 million. The initial six-week course is followed by specific training for the 300 TEOR (Bus Rapid Transit system) and light rail system drivers; their knowledge is checked annually or following time off work exceeding two weeks.
- Standard training aims to improve stress management, foster rational driving and prevent accidents. The rational driving course contains information on sustainable development, and the positive and negative environmental impacts of our activity.

→ Systematic supervision of drivers following an attack or accident.

→ Access for people with disabilities

- The light rail system is accessible, and all stations are equipped with escalators
- The TEOR station platforms are raised to enable access for wheelchairs, strollers, etc.
- 60% of buses are accessible with an electrically operated ramp and stop request system
- Work is ongoing to improve access at the stops on the 10 lines that comprise the network
- In all, 90% of the network is equipped to enable access to people with disabilities.

→ Civic and awareness actions: the role of mediators

The TCAR network serves 100% of the city’s greater urban area. A preventive approach has been structured around 30 mediators. This initiative was started in 1995 with a local security contract: mediators, young people employed through a non-profit organization, provide ongoing dialog in problem areas. This approach includes upward mobility possibilities for the mediators: hired under unlimited-term

contracts by TCAR, after several years they can develop a career in the company.

- Specific preventive actions are carried out in partnership with the Department of Education, non-profit organizations, the judicial authorities and the police:
  - *Citizen forums*
  - *City Raid Adventure*
  - *Citizen education programs (the “Dégrad’action” anti-vandalism program and Priority Education Networks)*
- Presentations by TCAR agents in primary and secondary schools to generate awareness about road safety and civic conduct to generate involvement in the life of the neighborhood.

## 2 Environmental aspects

→ TCAR is not responsible for purchasing vehicles. However, it does act as a consultant and submits proposals to the city, for example, to define and operate a fleet of buses with environmental standards above European regulations: clean engines with particle filters (catalytic converters), and biofuels<sup>G</sup> (30% “diester” diesel biofuel since 1995).

→ Communication campaigns to promote public transportation.

→ Intermodal transportation is made easier via feeder stations (free parking with a bus ticket).

→ Safety: quarterly inspection of all vehicles.

## 3 Technical aspects

→ TCAR has implemented an experiment in association with ADEME (the French environment and energy management agency) involving the use of biofuels in vehicles equipped with particle filters. The aim is to check whether the two systems can operate jointly without any damage. Biofuels are now used in almost 80% of the buses.

→ TEOR, the Bus Rapid Transit system, operates in its own corridor or on shared roadways, and has priority at intersections. The bus stop platforms are raised and house automatic ticketing machines. An innovative optical guidance system ensures systematic platform approach to less than 5 centimeters. The commercial operating speed is close to that of the light rail system.

# Our Research and Development effort

## 1 R&D structure

New environmental issues are increasing the need for technological advances and development. More than ever, we have to focus our R&D effort on research into breakthrough innovations while also paving the way for the main research topics of the future.

We now know that the development of new technologies must be accompanied by an assessment of the impacts their long-term use will have on the environment and public health. Our R&D work therefore analyzes the

life cycle of all new processes developed in order to quantify their impacts and identify potential avenues for improvement or modernization.

Technological solutions in energy and the combat against greenhouse gases<sup>G</sup> are development priorities. Intensive efforts are being made in the development of clean sources of energy, such as biomass<sup>G</sup>, solar power, cogeneration and fuel cells, and in research into solutions to improve energy performance, save fossil fuels and provide clean and efficient transportation.

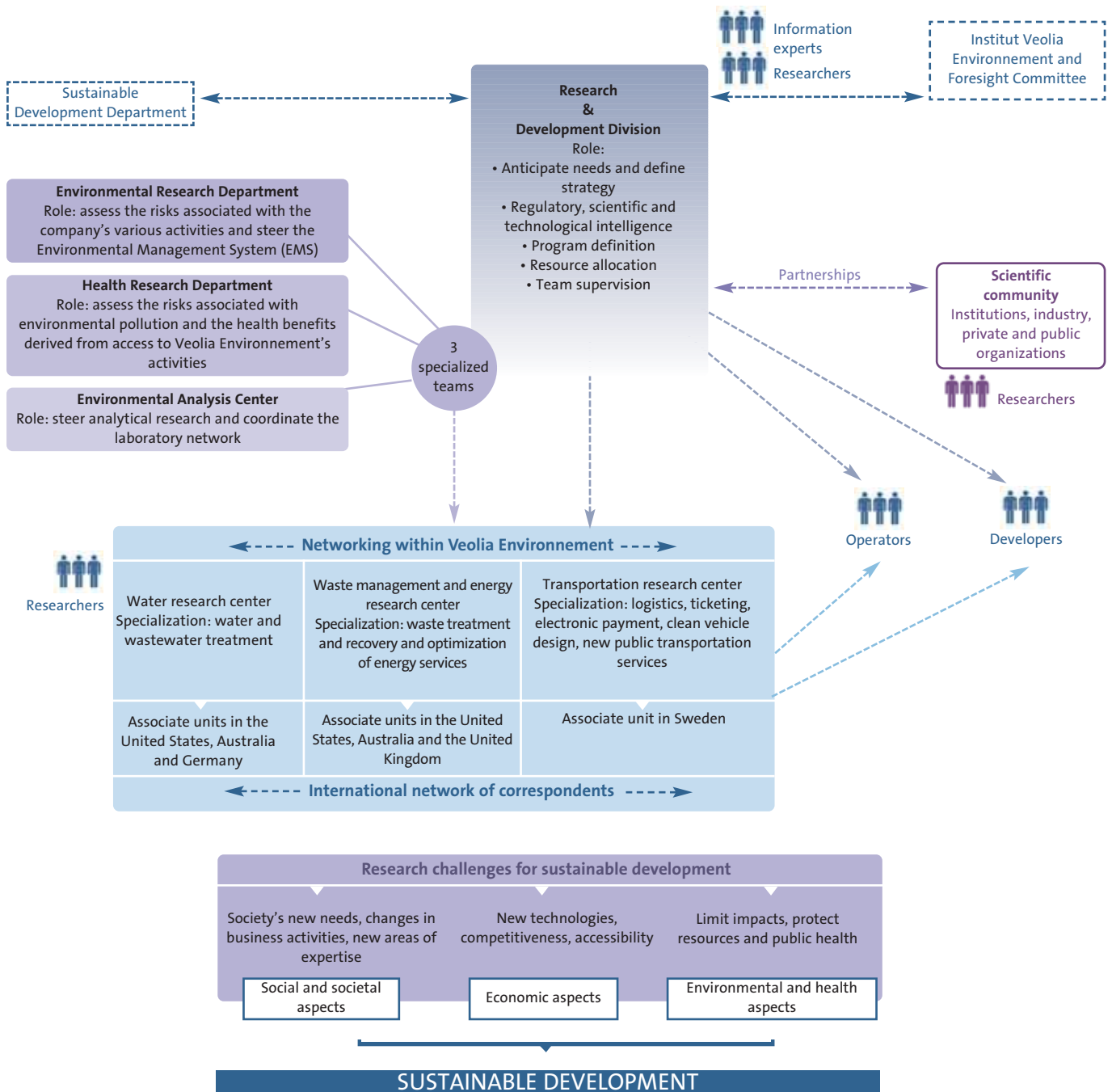
## KEY FIGURES

- 700 experts: 350 in research and 350 in development
- 3 research centers in France and associate units in other countries
- €115 million budget in 2006
- Around a hundred prestigious partners (institutions, industry, private and public organizations)
- Around a hundred pilot units used to validate the performance of technologies developed



Maisons-Laffitte water research center (France)

## R&D STRUCTURE



### Method

R&D involves various teams working together to provide innovative solutions that are crucial to the company's competitiveness. Their work is carried out following a five-step method that ensures rapid progress is made toward reliable and efficient industrial applications, while containing the technological risk. Regulatory, technological and competition intelligence is gathered to identify future needs, which serve as the basis for defining new research programs. Laboratory or field trials are then carried out to check feasibility. A pilot unit is built, in the laboratory or on site, to validate and ensure the reliability of the technology being developed. Lastly, a pre-industrial unit is built and then monitored by operating personnel.



## 2 The challenges for R&D

### • Manage and conserve resources

R&D programs focus on processes for reuse, recycling or replacement (alternative resources). Such processes protect and conserve natural resources, such as water, air, raw materials and fossil fuels, by limiting recourse to them.

→ **Seawater desalination: an alternative and widely available resource**

*Improved environmental balance*

In many regions of the world, seawater desalination is ultimately seen as the main means to produce drinking water and a way of overcoming the shortage of available freshwater sources. The main problems encountered in desalination are membrane<sup>G</sup> clogging (for processes based on reverse osmosis<sup>G</sup>), high energy consumption, and the environmental impacts, in particular those caused by the discharge of brine into the natural environment.

↗ **Objectives:** work on seawater pretreatment to limit membrane clogging and on reducing energy consumption to further decrease the cost of desalination, which has already been cut by a factor of four in 10 years.

### • Limit pollution

A major aspect of our research involves developing solutions to limit air, water and soil pollution.

→ **Coastal wastewater discharge: optimum management**

*Reduce the impact on the natural environment*

In wet weather, some wastewater<sup>G</sup> systems cannot cope and end up discharging untreated wastewater into the natural environment (due to treatment capacity being exceeded, stormwater weirs on combined systems, etc.). This direct discharge of pollution affects the immediate natural environment and the receiving coastal environment.

↗ **Objectives:** develop a transposable and adaptable decision-aid tool that will enable wastewater system managers to minimize the impact on the receiving environment and to assess the risk of bathing water deterioration on a daily basis.

### • Protect public and employee health

Given the rise in water and air pollution-related diseases (gastroenteritis, respiratory diseases, etc.), Health Research seeks to find solutions to new challenges by compiling health safety monitoring indicators, improving workplace conditions, protecting employee health, sharing knowledge and good practices, etc.

→ **Bioaerosols: employee exposure in materials recovery facilities**

*Improved health safety*

To improve employee health safety, a study is being carried out to assess sorting operatives' exposure to aerosols in sorting booths.

↗ **Objectives:** define and validate an exposure assessment method, measure bioaerosols<sup>G</sup>, and propose personal and collective prevention systems based mainly on ventilation. The results will be used to develop and focus on the safest processes.

### • Optimize technical and economic performance

R&D carries out studies and trials to make technologies accessible both from a technical and economic point of view.

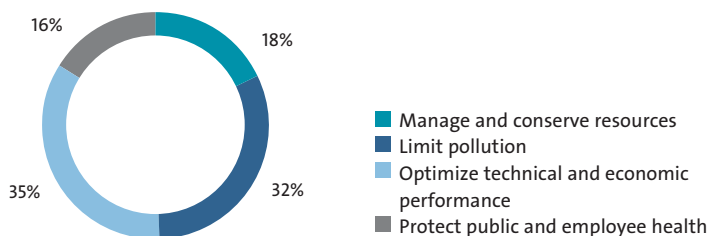
→ **The intelligent bus: attractive, clean and economic public transit**

*Significant advantages for passengers and environmental friendliness*

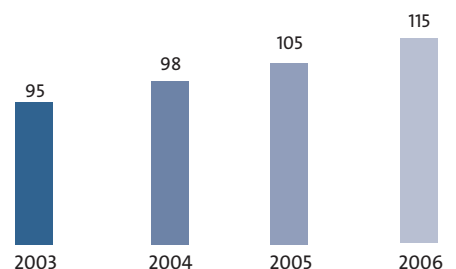
The new services provided by intelligent buses simplify travel and optimize the amount of time spent in transportation, thus increasing the appeal of public transit.

↗ **Objectives:** make bus systems more attractive and more economical in terms of time, fuel consumption, brake and tire wear, etc. R&D focuses on innovations such as passenger information on mobile phones, bus priority systems at traffic lights, contactless ticketing using mobile phones, and dynamic display panels. In addition to this program, development work is being carried out in the areas of clean fuels and engines.

BUDGET BREAKDOWN BY CHALLENGE (percentage)



R&D BUDGET (in millions of euros)



### • Greenhouse gases

Greenhouse gases<sup>G</sup> are a central issue for all of Veolia Environnement's activities. To meet this challenge and combat climate change, research focuses in particular on energy optimization, the development of renewable energy<sup>G</sup> and capturing CO<sub>2</sub>.

→ **Bioenergy: renewable sources of energy to reduce greenhouse gas emissions**

*Energy recovery from waste*

The use of waste (liquid and solid) as a source of energy is a concrete solution for saving fossil fuels and promoting renewable sources of energy while minimizing environmental and health risks.

↗ **Objectives:** develop, assess and validate the use of bioenergy<sup>G</sup> such as solid recovered fuels, biogas<sup>G</sup> from landfills<sup>G</sup>, wastewater sludge and biofuels<sup>G</sup> to offer clean energy and limit greenhouse gas emissions.

## The Institut Veolia Environnement

The prime purpose of the Institut Veolia Environnement, which was set up in 2001, is to contribute to a better understanding of the changes taking place in the area of the environment and to anticipate the impact of these changes on public policies, private initiatives and society in general. The institute's work is focused on dialog with civil society, and aims at building independent scientific expertise that will enrich Veolia's long-term vision and enable the company to improve its ability to anticipate change.

The directions and projects are defined with an independent Foresight Committee<sup>1</sup> comprising six experts of different nationalities from the academic and institutional worlds.

The institute's environmental foresight work involves cross-disciplinary research at the international level in five main areas:

- economic dimensions of the environment;
- links between health and the environment;
- climate change and lifestyles;
- urban growth imperatives; and
- society and environmental issues.

The diversity of skills and academic disciplines (economics, health, sociology, demographics, history, etc.) of the institute's

network of experts enables it to approach each of its study areas from many different angles. Using the directions defined with the Foresight Committee, the permanent team identifies the study topics and the most competent specialists to head the program. Scientific partnerships and agreements on study programs have recently been signed with prestigious universities. In addition to coordinating research and leveraging the results, the team organizes international conferences. In 2006 two conferences were held: one in Toulouse (France), jointly with IDEI (Institut d'Économie Industrielle) on the topic of public-private partnerships; and the other in Bangalore (India), with IDDRI (Institut du Développement Durable et des Relations Internationales) and TERI (The Energy and Resource Institute), on the links between Energy, Environment and Development. These events are attended by representatives of non-profit organizations, universities, major international organizations and corporations to discuss the main issues in sustainable development.

The institute also organizes workshops for Veolia Environnement employees to generate awareness about the need for foresight thinking. In 2006 the topics addressed included climate change, risk management and communication, and the interaction between waste treatment and urbanization.

In 2007 a symposium is being organized in Montreal (Canada), in partnership with the Pew Center on Global Climate Change (USA) and the National Round Table on the Environment and the Economy (Canada). It will present a long-term strategy approach to climate change. The launch of a multi-disciplinary scientific journal called *S.A.P.I.EN.S.* (Surveys and Perspectives Integrating Environment and Society) is also planned. It will publish articles by leading specialists about the most outstanding advances made in the field of environmental foresight.

### <sup>1</sup> The Foresight Committee

Hélène Ahrweiler, President of the University of Europe  
Harvey Fineberg, President of the United States Institute of Medicine  
Pierre Marc Johnson, Advisor to leading international organizations  
Philippe Kourilsky, Professor at the Collège de France  
Mamphela Ramphele, Former Managing Director of the World Bank  
Amartya Sen, Economist and Nobel laureate in 1998.

# Details of activities in developing countries

For the past two years, we have opted to spotlight our action in developing countries. Our aim is to describe specific aspects of our business within the social contexts of the African nations where we operate and to measure the progress made, in particular in terms of access to essential services. Last year, we extended this focus to include Latin America, primarily in our water, wastewater<sup>G</sup> and waste management businesses, which we operate through our subsidiary Proactiva<sup>1</sup>. This year, we have chosen to concentrate on one country in each of these regions—Gabon for Africa and Mexico for Latin America—in order to provide a more detailed presentation of the way the income derived from our business is redistributed within these communities.

The following table illustrates the environmental and social impacts of our water, wastewater and electricity activities in the main countries where we operate in Africa.

2006 indicators – Africa			
	Niger	Morocco	Gabon
Contract start date	2001	2002	1997
Headcount	526	4,302	1,500
Number of customers	82,425 (water)	588,476 (water) 735,945 (electricity)	107,089 (water) 179,370 (electricity)
Subsidized service and connections <sup>G</sup>	11,688 (water)	38,311 (water/wastewater) 36,044 (electricity)	In 2006: 839 (water) 1,809 (electricity)
Water distribution network efficiency	83%	Tangier - Tetouan: 76% Rabat: 81%	81.5%
Bacteriological compliance rate for the water supplied	100%	Tangier - Tetouan: 99.5% Rabat: 100%	97%
Overall compliance rate for the water supplied	94.6%	Tangier - Tetouan: 99.2% Rabat: 100%	99.30%

The following table illustrates the environmental and social impacts of our water and wastewater activities in the Latin American countries where we operate.

2006 indicators – Latin America								
	Aguascalientes	Mexico City	Monteria	San Andres Island	Bogotá	Tunja	Caracas center	Catamarca
Country	Mexico	Mexico	Colombia	Colombia	Colombia	Colombia	Venezuela	Argentina <sup>a</sup>
Contract	1993 – 2023	1993 - 2009	2000 - 2020	2005 - 2020	1998 - 2018	1996 - 2026	2002 – 2008	2000 – 2030
Service	Water and wastewater concession	Commercial administration 469,145 customers	Water and wastewater concession	Water and wastewater concession	BOT, drinking water production	Water and wastewater concession	Network maintenance and management Commercial administration	Water and wastewater concession
Headcount	680	255	340	58	89	116	96	130
Water distribution network efficiency	66.4%	-	57.4%	60%	Rehabilitation of the Tibitoc water production plant.	66.9%	-	68.5%
Wastewater treatment efficiency	-	-	56%	-	Water supply to the Bogotá public water authority (EAAB)	-	-	65.3%
% of population served for water	99.5%	-	96%	70%	Flow rate treated: 3.3 m <sup>3</sup> /sec	100%	-	100%
% of population connected to wastewater system	98%	-	36%	30%		98.6%		58%

<sup>1</sup> Company owned jointly by FCC and Veolia Environnement

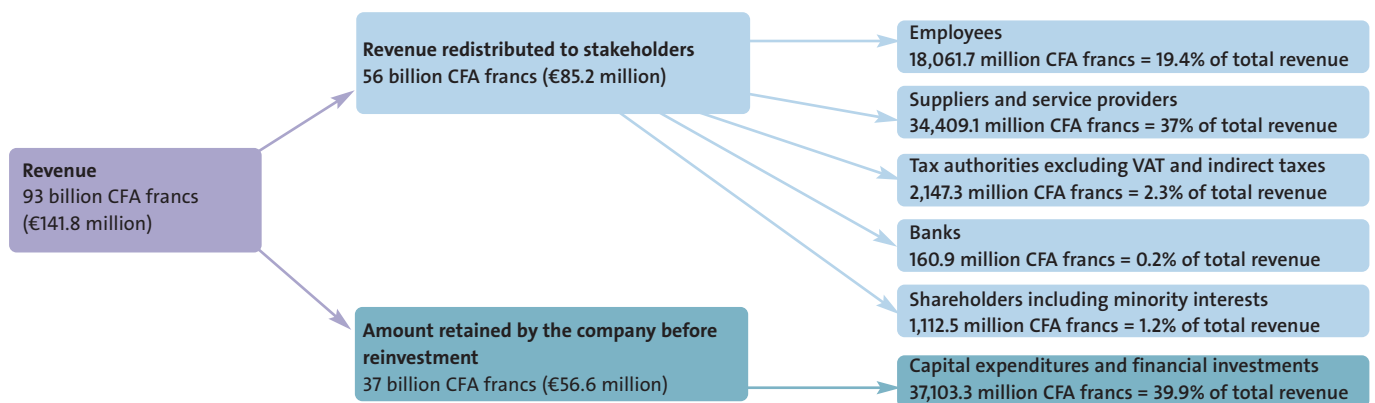
## Africa: the example of Gabon

In Gabon, Veolia Water manages the country's water and electricity services through its subsidiary Société d'Eau et d'Électricité du Gabon (SEEG). In a major shakeup of the water and electricity sectors, the Gabonese government decided to call in a private partner to manage SEEG. Following an international call for tenders, Veolia Water was selected in 1997 as the majority stakeholder (with a 51% interest) to operate the water production and distribution and electricity generation and distribution services in all the country's urban centers. This was the first public service concession awarded by the Gabonese government to a private partner.

Since the start of the contract, the water service connection rate has risen from 40% to more than 65%. For electricity, the rate has risen from 65% to 93%. The rate of new subscriber uptake is still strong: in 2005 the number increased by 8% for both water and electricity. SEEG also focuses on boosting its employees' professionalism and motivation through an active policy of investment in training at its own training center. In this way Veolia Water, through SEEG, is making a long-term contribution in partnership with the contracting public authority to Gabon's economic and social development.

The contract's objectives are clear: increase the number of people served and improve the quality of the water and electricity services.

### Redistribution of income<sup>1</sup> to the stakeholders<sup>G</sup> (in CFA francs)



<sup>1</sup> 2005 data



## Best Practice

### Rolling out the Environmental Management System (EMS)<sup>G</sup> in Africa, the Middle East and India

In compliance with Veolia Environnement's sustainable development policy, Veolia Water AMI (Africa-Middle East-India) is rolling out its EMS to enable the region's business units<sup>G</sup> to better control their environmental impacts. The rollout, involving all levels of the subsidiaries' hierarchies, takes place in three stages. The first analysis phase took place in 2006. Environmental management plans were drawn up for each business unit, establishing indicators and targets (action plans). In these areas, as in others, the EMS is above all a management tool providing the company with a methodological framework and measurement instruments for improving performance to ensure the long-term viability of our management contracts.



## Latin America: the example of Mexico

In Latin America, through its subsidiary Proactiva<sup>1</sup>, Veolia Environnement supplies water and wastewater<sup>G</sup> services to more than 16 million people and waste management services to 88 municipalities totaling a population of more than 26 million.

### 1 Human resources policy

Veolia Environnement has more than 2,000 employees in Mexico, who supply environmental services to 10 million people. The company is a major player in local development. It strives to contribute to social progress and environmental protection in the regions where it operates and also introduces initiatives to assist its own employees.

#### Integration policy

In 2006, 1,816 Mexican employees attended the Veolia Environnement integration course. Introduced in 2005, it targets all 8,000 company employees in Latin America. Each one-day integration session is limited to 25 to 30 people and aims to create a sense of belonging to the company, improve labor relations, inculcate a sense of worth and trust, create opportunities for dialog, and reveal the company's human potential.

<sup>1</sup> Company owned jointly by FCC and Veolia Environnement

#### Employee-employer dialog

To develop dialog, in 1997 the human resources teams in collaboration with the 13 union delegates introduced a structured arrangement for talks involving the three entities concerned: management, human resources and the trade unions. The next step was the creation of a negotiations committee dedicated to employee-employer dialog, which meets once a year at each of the 10 Mexican locations. The decisions taken at these meetings are implemented locally after consultation with the trade union delegate and a senior human resources officer. As a result of this structured dialog, there have been no strikes or union action since 1997.

#### Health and safety

2006 was Safety Year for Proactiva. Numerous activities focusing on prevention, health and safety were organized at all locations in Mexico where we operate. A national awareness campaign about the correct use of personal protection equipment and preventive actions in the event of a natural catastrophe targeted all Mexican employees.

Similarly, the "hand washing" campaign launched internationally by Veolia Environnement was taken up at 92% of Mexican locations.

### 2 Waste management

In Mexico, Proactiva operates eight non-hazardous waste landfills<sup>G</sup> that processed more than 1.6 million metric tons of waste in 2006. Our activity also focuses on developing sophisticated expertise that is an appropriate response to our level of environmental responsibility. All our landfills are equipped with modern waste processing and landfilling systems: cell base waterproofing systems, stormwater drainage, recirculation and treatment of leachate<sup>G</sup>, passive biogas<sup>G</sup>, ventilation systems and surface water monitoring. Our activity, which used merely to involve waste collection and landfilling, is gradually evolving and developing through integrated solutions that in some cases cover a broad spectrum of waste management services: street cleaning; green, household and industrial waste collection; waste transfer and sorting; and treatment and landfilling of non-hazardous and hospital waste.



Queretaro landfill, Mexico.

Under the awareness programs implemented for Mexican communities, Veolia Environnement regularly organizes and participates in campaigns targeting children.

The next development step will involve biogas emission management at its landfills through Clean Development Mechanism<sup>G</sup> (CDM) projects implemented under the Kyoto Protocol<sup>G</sup>. Using the income from the sale of CO<sub>2</sub> Emission Reduction Unit (ERU) certificates, it will be possible to invest in technical solutions to capture and actively extract biogas, and then either flare it or recover its energy content. Such systems only existed up until now at landfills in industrialized countries. Veolia Environnement’s landfills in Mexico have an emission reduction potential of 400,000 to 500,000 metric tons of CO<sub>2</sub> equivalent per year.

### 3 Water

In Mexico City, Veolia Environnement (Proactiva) provides the commercial administration of water services for 469,145 customers, equaling a total population of 2.5 million. Since 1993, in Aguascalientes, Veolia Environnement has been responsible for water production and distribution, wastewater service, and commercial administration for a population of 735,000.

### Staggered billing system

As part of its strategy to improve the after-sales service offered to its customers in Mexico City, Veolia Environnement has introduced a staggered billing system. Customers now pay their bills at different dates. This has reduced the number of customers coming to the agencies at any one time, resulting in faster and better quality service.



## Best Practice

### Source-separated waste sorting in Queretaro

In line with the sustainable development commitments of the municipality of Queretaro, Veolia Environnement has installed a new materials recovery facility for source-separated waste at the city’s landfill. With an initial daily capacity of 50 metric tons and 12 sorting compartments, the facility has led to the creation of an additional 40 jobs. During the period when the project came on stream between March and August 2006, 16.5% of the sorted waste was recovered and sold.

## 2006 indicators – Mexico

Mexico, Waste management	QUERÉTARO	MÉRIDA	XALAPA	TLALNEPANTLA	TUXTLA GUTIÉRREZ	NUEVO LAREDO
Waste landfilled in 2006	250,000 M metric tons	220,000 M metric tons	110,000 M metric tons	335,000 M metric tons	160,000 M metric tons	165,000 M metric tons
Contract	1996 – 2026	1997 – 2018	2003 - 2018	1998 – 2012	2005 - 2026	1994 - 2009
Population	700,000	765,000	420,000	720,000	500,000	450,000
Service	Collection Landfilling	Landfilling	Landfilling	Landfilling	Street cleaning Collection Transportation Transfer Landfilling	Street cleaning Collection Transportation Landfilling
Materials recovery facility	Yes	-	-	-	-	-
Watertightness system	Compacted clay Geomembrane	Geotextile Geomembrane Compacted silt	Compacted clay Geomembrane			-
Leachate collection and treatment	Recirculation Evaporation pond					
Current biogas recovery and treatment system	Passive ventilation ducts					
CDM <sup>G</sup> project CERU <sup>1</sup> envisaged	100,000/yr	130,000/yr	-	150,000/yr	50,000/yr	30,000/yr

<sup>1</sup> Certified emission reduction units of 1 metric ton of CO<sub>2</sub> equivalent delivered under the CDM project.







An aerial photograph of a green roof. A dark, corrugated metal drainage channel runs diagonally across the lower portion of the frame. The roof is covered in a dense layer of green vegetation, including various grasses and small leafy plants. The lighting is bright, creating shadows within the drainage channel and highlighting the texture of the plants.

## Approach

To incorporate sustainable development in our strategy, we must make it central to our activities and change the way we conduct our business. This means defining our objectives and commitments in sustainable development, publicizing those objectives and commitments within the company and measuring our performance.



# Incorporating sustainable development in our management systems

## 1 Structuring our approach: our principles and commitments in support of sustainable development

To incorporate sustainable development in the conduct of our business, our own commitments and objectives must be defined and adapted to the realities of our divisions and to our international reach. Besides the numerous action plans in our road map we have, over time, developed and adapted tools for structuring our approach. For example, in 2006 we overhauled the Veolia Environnement Sustainable Development Charter (*see opposite*) to align our commitments with the changing issues in sustainable development and to make it more pertinent to the needs encountered on the ground by our four divisions. Embarking on a sustainable development approach does not only involve making an internal commitment, but also subscribing to major international commitments, such as the United Nations' Global Compact.

## 2 An inter-disciplinary commitment

Our will to promote sustainable development is reflected at all management levels. Our Sustainable Development Department, which reports to the Chairman and Chief Executive Officer, is responsible for coordinating our company's policies and presenting its performance. It also prepares the company for future developments, helping it to identify the challenges ahead and assisting it in formulating objectives. The department

has correspondents in all four divisions, in each geographic area in which we have a presence and in the main functional departments. They help it deploy the tools for reporting economic, social and environmental performance. Country and area sustainable development correspondents are gradually being appointed to maintain close ties with the local managers.

## 3 The reporting process

Measuring our performance in sustainable development shows us not only the impacts our activities are having, but also allows us to improve our performance through adjustments to objectives and action plans.

### Environmental reporting

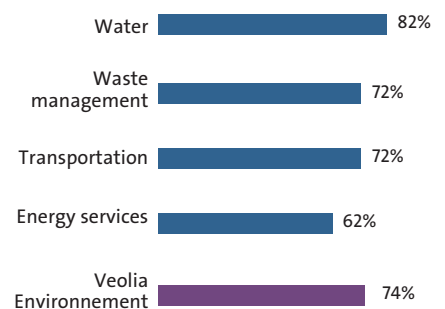
Each year since 2001, we have provided information on approximately 100 indicators based on the methodological procedures laid down in the Measurement and Reporting Protocol for Environmental Indicators. The reporting scope now covers 67% of company revenue. In 2006 we finalized our Environmental Information System (EIS) and organized its deployment. This system will enable us to optimize the environmental indicator reporting process.

**Social reporting** enables us to adapt our human resources steering and management tools to match each entity's particular circumstances. Since 2001, 150 indicators have been deployed throughout Veolia Environnement. They now cover 1,450 subsidiaries in 67 countries. Based on information gathered in the reporting process, we

compile best human resources and corporate responsibility practices, which are published in our Social Initiatives annual report. Dedicated software is employed to enhance the reliability of data collection and validation. The resulting data is analyzed by geographic area, country and type of activity. The use of consistent indicators also facilitates uptake, supports and ensures objective evaluation and clearly reflects the social performance of each Veolia Environnement entity over time.

**Customer reporting** presents all of the practices and procedures used to measure, ensure and improve the satisfaction of our individual customers through 10 indicators, primarily on the awareness campaign to promote responsible consumption that was created in 2006. With the addition of three new business units—Changzhou in China, Columbia and Las Vegas in the United States—the coverage in 2006 increased to 34 subsidiaries in 15 countries (*see pages 60 and 61*). The reporting scope will be extended significantly in 2007 to reach 80%.

### CUSTOMER REPORTING SCOPE 2006 (% of 2006 revenue from public authorities)



#### 4 Training in environmental issues and building sustainable development awareness

In 2006, the first 79 students in the new master's program in Environmental Services Management and Engineering completed their training. The program was established by Veolia Environnement for its future operations managers in partnerships with the University of Marne-la-Vallée, University of Cergy-Pontoise and the national civil engineering school. To train these managers to become true agents of sustainable development, 20% of the teaching time is devoted to environmental and sustainable development topics.

In addition to the training dispensed by our centers, which, because of our activities, concentrate on the components of environmental services, more efforts were employed in 2006 to build environmental and sustainable development awareness. For example, Veolia Environmental Services France (Veolia Propreté) designed a program for integration and training for workers it had recently hired under unlimited-term contracts. Five modules make up the common core of the programs: knowledge of the company; accident prevention, health and safety; interpersonal relations and conduct; work techniques; and environmental awareness. The environmental

awareness module focuses on conserving water resources and biodiversity<sup>G</sup>, air pollution and climate change, reducing waste production, and solutions for better waste management.

About 950 people will be taking this half-day module, which will combine presentations, debates, tests and tips on ways people can help protect the environment.

To share the foundations of sustainable development with all its operations' employees, Veolia Transport has developed a set of memo cards that is available in French, English, German, Spanish and Chinese. Based on the principle of an educational game, the cards give amusing examples of environmentally sound practices and helpful advice on making sustainable development a habit.

Last, Veolia Water focused this year on educating its support and operational managers about sustainable development issues. They were offered two kits—one on sustainable development and the other on energy and greenhouse gases<sup>G</sup>—reviewing the basic concepts needed for a sound analysis of these fields and presenting the innovative experiments that have been carried out. The kits will help them give their clients better advice. A total of 1,700 copies of the kits were distributed in French and English in countries in which Veolia Water has operations.

## Our Sustainable Development Charter

### Veolia Environnement's commitments

1. Protect the environment, contribute to conserving natural resources and biodiversity, and combat climate change.
2. Promote—through innovation, research and development—environmental, economic and social solutions that will meet the needs of future generations.
3. Raise awareness of environmental challenges and the ensuing need for behavioral changes among all concerned with our activities.
4. Adapt our service offers, through dialog, the quality of the advice we provide and our expertise, to meet the needs and expectations of clients.
5. Ensure our employees' health and safety and help improve public health.
6. Provide working conditions in which fundamental human rights and international labor standards are complied with.
7. Promote diversity and combat discrimination to guarantee equal opportunities.
8. Encourage skills development and upward mobility for our employees throughout their career.
9. Gradually set our own environmental and social standards to be applied to all our operations around the world.
10. Base our corporate governance on transparent communication, anticipation of risks and the definition of rules for ethical conduct and compliance.
11. Contribute to local economic and social development, and to meeting international goals for access to essential services.
12. Encourage partners, subcontractors and suppliers to adhere to our values and make their own contribution to our sustainable development commitments.

# Deploying our sustainable development strategy and approach

Commitments and priorities	Action plans and objectives
<b>Research and Development</b>	
Ethical conduct	Distribute and explain the Ethics, Belief and Responsibility program
Risk management	Implement the action plans set out in the risk map
Dialog with our stakeholders	Establish a Sustainable Development Visiting Committee to advise on sustainable development strategy and performance
Preparation for health crises	Development of preparedness plans at all our subsidiaries for a flu pandemic
Customer satisfaction	Enlarge the coverage of customer satisfaction surveys
Service commitments to our clients and customers (consumers, local public authorities, industrial companies)	Prepare then implement service commitment charters
Responsibilities toward our suppliers	Develop procedures for monitoring the application of suppliers' sustainable development commitments
<b>Personnel</b>	
Reduce staff turnover	<ul style="list-style-type: none"> <li>Reduce turnover rate of employees with unlimited-term contracts to 10%</li> <li>Reduce resignation rate to 4%</li> <li>Reduce dismissal rate to 2%</li> </ul>
Reduce the types of temporary employment	<ul style="list-style-type: none"> <li>Reduce fixed-term contract rate to 4%</li> <li>Reduce temporary employee rate to 3.5%</li> </ul>
<b>Skills management and development</b>	
Management of demographic issues and anticipation of needs in qualifications	<ul style="list-style-type: none"> <li>Increase number of employees in work-study programs to 2%</li> </ul>
<b>Compensation, employee benefits and social protection</b>	
Introduce a fair compensation policy and expand employee stock purchase plans	
<b>Length and organization of work time</b>	
Reduce absenteeism	Reduce absenteeism rate to 4%
Reduce overtime	Reduce average annual overtime to 49 hours per employee
<b>Employee health and safety</b>	
Reduce the accident frequency and severity rates	<ul style="list-style-type: none"> <li>Reduce frequency of accidents at work to 25</li> <li>Reduce severity of accidents at work to 0.67</li> </ul>
<b>Diversity</b>	
	Develop a diversity management system
<b>Labor relations</b>	
	Deploy the European Works Council created in 2005



**Global Compact principles**

**Human Rights**

- 1. Support and respect human rights
- 2. Do not commit human rights abuses

**Labor**

- 3. Uphold freedom of association and recognize the right to collective bargaining
- 4. Eliminate all forms of forced and compulsory labor
- 5. Abolish child labor
- 6. Eliminate discrimination

**Environment**

- 7. Take a precautionary approach to environmental questions
- 8. Promote responsible environmental practices
- 9. Propagate environmentally friendly technologies

**Anti-corruption**

- 10. Combat all forms of corruption

Timeframe	Indicator trend	Comments	Global Compact Principles	Pages
Ongoing	→		9	28-31
Ongoing	→	400 managers educated about this in two years (2004-2006)	10	45
Ongoing	→			46
2007	✓	Committee established in 2007 for two years		50-51; 101
2008	→			46; 74
2008	→	96% of cases covered by reporting scope measure customer satisfaction (corresponding to 74% of company revenue from local public authorities)		60-61
	→	Partially prepared		60-61
Ongoing	→		1, 2, 4, 5	62-63
Ongoing		Current objectives until 2006. The objectives for 2007 and beyond are being defined.		66-67
2006				68
2006				
2006				
Ongoing				
2006				
2006				73
Ongoing	→		1	66-67; 69
2006		Current objectives until 2006. The objectives for 2007 and beyond are being defined.		
Ongoing	→		1	66-67; 69
Ongoing		Current objectives until 2006. The objectives for 2007 and beyond are being defined.		66-67; 70
2006				
2006	✓	Current objectives until 2006. The objectives for 2007 and beyond are being defined.		66-67; 71; 74
2006				
Ongoing	→	A report will be made on the situation in 2007	1, 2, 6	75
Ongoing	→		1, 2, 3, 4, 5	71-72



Commitments and priorities	Action plans and objectives
<b>Social innovation</b>	
	Identify, publicize and reward social initiatives
<b>Environmental Management System</b>	Deploy an EMS in 80% of relevant activities
	Conduct environmental audits on 100% of our priority facilities
<b>Conserve natural resources</b>	
Conserve water resources	Reduce leaks in water distribution networks by maintaining efficiency at above 80% in the EU (15 countries)
Conserve energy resources	Expand renewable and alternative energy
Conserve raw materials	Expand recycling and materials recovery
Conserve soil and biodiversity	Increase the ratio of organic recovery to total tonnage of treated sludge
<b>Reduce our environmental impacts</b>	
Combat climate change	Recover and treat landfill gas by equipping 100% of our landfills by the end of 2006
	Help reduce CO <sub>2</sub> emissions under energy services contracts by improving the performance of facilities with a capacity of over 20 MW
Environmental health	Monitor sanitary quality of drinking water
	Reduce dioxin emissions by improving incinerator flue gas treatment
	Manage <i>Legionella</i> risk in our systems
Reduce air pollution	Educate our employees and the public about health and the environment
	Support the use of cleaner fuels and vehicles by reducing polluting emissions from our passenger transportation vehicles
Reduce pollutant discharge into water	Reduce polluting emissions by improving incinerator flue gas treatment
	Collect and treat leachate by equipping 100% of our landfills
Conserve biodiversity	Maintain the treatment efficiency of our wastewater treatment plants at above 80%
	Improve characterization of our impacts
Control our own impacts	Systematize our approach to managing biodiversity
	Identify our impacts and systematize an approach to managing our impacts

## Encourage the achievement of sustainable development targets through financial incentives

Veolia Environnement does not yet have any formal reporting procedures on compensation associated with social and environmental performance criteria. We have, however, identified certain best practices in the area.

### SPOTLIGHT

*Non-financial considerations in manager compensation: the example of the policy in 11 American waste-to-energy plants belonging to Veolia Environmental Services*

*In these facilities, employing close to 700 people, the managers' compensation is linked to their performance in the management of 14 criteria in the following areas:*

- facility organization and safety;*
- environmental performance;*
- quality of human resources and internal communications management;*
- quality of external communications, with clients and local regulatory authorities;*
- personal performance.*

*At least 30% of the managers' compensation is based on these criteria, with the exact proportion depending on their level of responsibility.*

Timeframe	Indicator trend	Comments	Global Compact Principles	Pages
Ongoing	→		1	38
2008	→			78
2008	→		7	
Ongoing	→		7, 8	12, 79, 90, 96
Ongoing	II		7, 8	
Ongoing	→		7, 8	20-21, 80, 96
Ongoing	→		7, 8	16-17, 79
Ongoing	→		7, 8	80
2006	II		7, 8	16-17, 81, 84-89
Ongoing	→		7, 8	20-21, 84-89
Ongoing	→		7, 8	
Ongoing	→			81-82
Ongoing	→	Publication in 2006 of a practical guide titled “Acting to Promote Environmental Health”		32-35, 74
2008	→		7, 8	24-25, 83
Ongoing	→			82
Ongoing	→		7, 8	83
Ongoing	→			83
Ongoing	→		7, 8	92-93
Ongoing	→			92-93
2007	→		7, 8	96

Legend ✓ Target reached → In progress II Objective to be redefined

## SPOTLIGHT

### INCORPORATION OF NON-FINANCIAL CONSIDERATIONS IN EMPLOYEE INCENTIVE PLANS: the example of three Veolia Transport systems in France—the Le Havre transit system and the Tours and Angers inter-city systems

To enable their staff to benefit from their personal performance, three transit systems negotiated incentive plan agreements that make their employees partners in the attainment of social and environmental targets. The basis of incentive bonuses was linked to success in improving three indicators: number of accidents, absenteeism and employees' fuel consumption. These agreements are part of a continuous improvement process, with the amounts of the incentive bonuses tied to the number of targets reached and the extent to which the targets for each indicator are reached.

To ensure staff adhere to this approach, the three systems established policies on helping their employees reach and even surpass their targets, for example, by stepping up training in rational driving. Because drivers were not aware that postures and movements would improve their working conditions, they were given training in the proper adjustment of their seats and their posture at the wheel. Better driver comfort as a result of the training also improves the quality of service and safety, besides considerably lowering fuel consumption. Other actions include training in management and communication for supervisory staff and systematic inquiries into the causes of accidents and employee absences.

# Promoting good governance

Good governance facilitates implementation of sustainable development policies and is a prerequisite for introducing corporate social responsibility practices. The Accounts and Audit Committee is the governance body that examines our accounts. Our Nominations and Compensation Committee makes proposals to the Board of Directors regarding the compensation of our senior officers and independence of our directors.

Veolia Environnement's organization is based on a Board of Directors and the company is listed on the Paris (Euronext) and New York stock exchanges (NYSE). As such, it abides by the regulations on corporate governance concerning the independence of its Board members. Directors are considered independent when they have no relations with our company, subsidiaries or management that could impair their objective judgment, in keeping with the recommendations of the Bouton report

in France. Our internal regulations require the Board of Directors to evaluate the independence of each of its members once a year based on criteria set out in the regulations, particular circumstances, the situation of the member, the company and its subsidiaries, and the opinion of the Nominations and Compensation Committee. In 2006, the Board of Directors voted to create a Strategy, Research, Innovation and Sustainable Development Committee.

## Evaluation of Veolia Environnement's performance

Standards of good governance		Company at March 30, 2007				
INDEPENDENCE	Directors among themselves and in relation to management	The presence of at least 50% of independent directors on the Board and its committees (Accounts and Audit Committee and the Nominations and Compensation Committee): • Definition of independence adopted for the Board of Directors' internal regulations	Board of Directors 8/14	Accounts and Audit Committee 2/3	Nominations and Compensation Committee 2/3	Research, Innovation and Sustainable Development Committee 1/3
		The average Director's term of office is four years	Six years (with half the Board renewed every three years, as was the case in 2006)			
INDEPENDENCE	Statutory Auditors in relation to management	Statutory Auditors may not provide consulting services other than ancillary audit services	yes (but with rare exceptions)			
		Meetings of Statutory Auditors and Directors with no members of management present	yes (see in particular Accounts and Audit Committee)			
ROLE IN DECISION-MAKING	Directors	Maximum five simultaneous mandates	yes*			
		Number of meetings and average attendance rate at Board and Committee meetings:  • Number of meetings • Attendance rate	Board of Directors 8 73 %	Accounts and Audit Committee 7 71.43 %	Nominations and Compensation Committee 2 100 %	Research, Innovation and Sustainable Development Committee 3 100 %
		Annual evaluation of the Board and its Committees	yes**			
	Shareholders	Formal evaluation of the Board every three years	yes			
		Percentage of votes expressed at the Annual Shareholders Meeting by shareholders present, represented or voting by mail in 2006 (excluding proxies held by the Chairman)	79.66 %			
	Other stakeholders	Attendance (quorum) at the last Annual Shareholders Meeting (2006)	57.58 %			
Number of resolutions on corporate social responsibility (CSR) proposed and approved at the Annual Shareholders Meeting in 2006		none				
FINANCIAL INFORMATION	Number of speakers who asked questions on CSR in 2006	One out of 16 questions				
	Chairman's compensation in 2006 ***	€2,114,794				
	Criteria for determining and setting compensation for the Chairman and senior management	See Chapter 15 of the 2006 Reference Document				
	Number of stock options awarded to the Chairman in 2006 and the 10 largest awards • Options awarded to the Chairman • 10 largest awards	150,000 603,000				

\* To the best of the company's knowledge, based on Directors' statements and excluding legal waivers.

\*\* In addition to a formal evaluation every three years, the Board must devote one point on its agenda every year to evaluating and discussing its performance.

\*\*\* Total gross fixed and variable compensation, Directors' fees paid by the company and its subsidiaries and benefits in kind.

# Upholding ethical standards

Unethical conduct in any part of the company can reflect negatively on the whole company because it can undermine the trust of our clients and partners, create discord in our teams and tarnish our image. Veolia Environnement's Executive Committee therefore created an Ethics Committee at the beginning of 2004 to oversee practices in our company. The three-member Ethics Committee is independent of the company's chain of command. Any employee may refer ethical matters to it, and it can also take up issues at its own initiative. It receives and deals with issues brought to its attention by employees and third parties in complete confidentiality, and makes recommendations for improving the situation. The committee fulfils its responsibilities in many ways, advising, mediating and promoting the values in its Ethics, Belief and Responsibility program. It was decided in 2006 that corporate-level meetings would be held for observations and evaluation on ethical questions. The groundwork for these meetings is now under way.

## Ethics, Belief and Responsibility program

Our Ethics, Belief and Responsibility program was introduced in 2003 and was updated by the Ethics Committee at the end of 2004. It is designed to promote the company's ethical values: scrupulous compliance with the law, fair dealing, social responsibility, risk management, corporate governance and a commitment to sustainable development. The program, which has been translated into nine languages, is designed to disseminate these values in a form that will be embraced in all countries in which we operate. The Ethics, Belief and Responsibility program will be updated as required to bring it in line with changing issues and to take into account the

results and achievements of the current program. Several measures have resulted from the program: training and communication, procedures for selecting outside consultants, and reporting procedures.

## Training in ethics

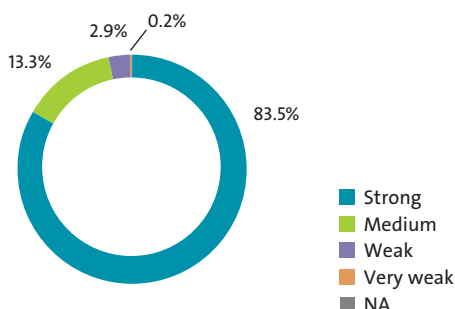
Since November 2004, 14 seminars, attended by more than 400 high-level managers, have been held in France, Chile, China and the Netherlands to increase awareness of ethical issues. The Ethics Committee has also played a role in training senior managers at Campus Veolia Environnement.

## Deployment of procedures

In 2006 a new section devoted to ethics was created for Veolia Environnement's intranet. It carries information about the Ethics Committee, ways of contacting it, its program and its other publications, such as the 2006 code of conduct on securities trading and compliance with financial law.

REVENUE BREAKDOWN ACCORDING TO PERCEPTION OF BUSINESS ETHICS BY COUNTRY

Source: Transparency International, 2006 data



## Best Practice

### Veolia Environmental Services' compliance helpline

Veolia Environmental Services North America introduced its Waste-to-Energy Compliance helpline on July 1, 2006.

Through this helpline, problems regarding occupational safety, compliance with environmental standards, discrimination and harassment, conflict of interest, illegal commercial practices and misappropriation of company resources can be signaled and appropriate action taken. The service is available 24/7 in various languages, and calls are free and treated in complete confidentiality. Depending on the seriousness of the case, it takes from one to 14 days to initiate an inquiry. Varied means were employed (posters, cards, a letter from the CEO, intranet presentation, etc.) to encourage employees to use the service, with particular emphasis placed on new employees.



# Anticipating and managing risks

The Risk Management Department steers a coordinated-management system to anticipate risks, analyze them and set appropriate action plans. In 2006 Veolia Environnement met two crucial objectives: to map the company's major risks and to comply with the Sarbanes-Oxley Act.

## 1 Risk mapping

The coordinated-management system is enabling Veolia Environnement to incorporate risk anticipation in its expansion process. An essential objective in 2006 was to map the company's major risks. This entailed nearly 150 interviews with senior managers. The evaluation was carried out using a consistent methodology designed to analyze inherent risks, the levels of control in place and the residual risks.

*The principal issues are identified in the table opposite, "Major risks highlighted by corporate risk mapping."*

Once the risks were ranked and analyzed, pilot action plans were developed and will be deployed in 2007 in coordination with the corporate and divisional risk management committees. This exercise also improved the management of cross-division risks and enabled us to pool experiences and current best practices at the corporate level.

## 2 Compliance with the Sarbanes-Oxley Act

For risk anticipation, rules of conduct must also be established, especially with respect to the publication of financial information and internal audits. Veolia Environnement is subject

to the Sarbanes-Oxley Act because it is listed on the New York Stock Exchange. This act requires that a certificate be produced every year on the effectiveness of internal controls. The certificate must be signed by the Chairman and Chief Executive Officer and the Chief Financial Officer. In addition, the auditors must attest to the reliability of management's certification and to the quality of the internal audit.

A structured program to reinforce and evaluate our internal controls procedures has been set up, along with an internal audit system suited to the diversity in our activities, contracts and internal organizations, as well as our growth.



## Best Practice

### Preparation for a flu pandemic

In the face of the threat of a worldwide avian flu epidemic, Veolia Environnement has made preparations to ensure that its clients can count on uninterrupted service and that its employees are protected everywhere in the world. In May 2005, committees were set up at headquarters and in our subsidiaries.

An extranet presenting information and procedures was made available to each operation in order to help it make its own plans for maintaining essential activities. Bird-flu masks were stockpiled at over 240 sites in every country in which we operate.

Prevention also entails adopting good habits. An international clean-hands awareness campaign, "Hygiene for my Health," began in September 2006 for our employees worldwide. The campaign will be stepped up in 2007.

The Internal Audit Department was set up in 2004 as part of the Finance Department with the responsibility of formalizing our internal audit procedures. It has now developed and deployed the procedures, which have been adopted in the divisions and business units.

Many employees of the subsidiaries were associated with this centralized exercise in the interest of widespread dissemination of our rules and ensuring that the procedures will endure. The Audit Department sent nearly 20,000 questionnaires accompanied by tests to more than 400 entities—business units, the divisions and head office—representing close to 75% of the company’s consolidated accounts.

Three such evaluations have been carried out since 2004, involving the active participation of approximately 1,000 people. This information formed the foundation for the corporate internal audit evaluation. Whenever weaknesses were identified, action plans were established by the divisions and head office.

The Board of Directors’ Accounts and Audit Committee met regularly with the Statutory Auditors to examine questions in detail.

Besides ensuring compliance, the exercise enabled us to roll out continuous improvement plans for our internal audits and make them a central and permanent part of our management methods.

### Major risks highlighted by corporate risk mapping

Issue	Management objective	Action plans
Manage our expansion	<p><b>Objective:</b> carefully select the contracts and markets in which the company seeks to expand</p> <p><b>Factors:</b></p> <ul style="list-style-type: none"> <li>→ Market dynamics</li> <li>→ The fit of the new contracts with our procedures and practices</li> </ul>	<ul style="list-style-type: none"> <li>→ Creation of engagement committees</li> <li>→ Reinforcement of the rules of engagement</li> </ul>
Maintain our competitive advantages	<p><b>Objective:</b> reinforce our strengths:</p> <ul style="list-style-type: none"> <li>→ our technical expertise, resulting from our teams’ experience and our strong R&amp;D</li> <li>→ our operating staff’s sense of service</li> <li>→ our legal and financial expertise and our expertise in labor relations</li> </ul>	<ul style="list-style-type: none"> <li>→ Creation of a Board of Directors’ Strategy Committee for R&amp;D and Sustainable Development</li> <li>→ Actions in knowledge management to share expertise developed within the company</li> </ul>
Guarantee the effectiveness of our internal controls	<p><b>Objective:</b> maintain the balance between:</p> <ul style="list-style-type: none"> <li>→ the decentralization required for our service activities</li> <li>→ the best operational and financial controls</li> <li>→ the propagation of expertise and best practices</li> </ul>	<ul style="list-style-type: none"> <li>→ Review of our financial reporting system</li> <li>→ Deployment of uniform rules and procedures in finance and human resources</li> <li>→ Reinforcement of our training programs</li> </ul>
Anticipate and manage environmental and health risks	<p><b>Objective:</b> provide all professional guarantees of:</p> <ul style="list-style-type: none"> <li>→ quality of the products distributed and services offered</li> <li>→ compliance with environmental and safety standards.</li> </ul>	<p>Environmental Management System (EMS)</p> <p>Entails four steps:</p> <ul style="list-style-type: none"> <li>→ analysis of environmental impacts</li> <li>→ establishment of the objectives and action plans</li> <li>→ deployment of the actions</li> <li>→ environmental audits.</li> </ul>

# Ensuring responsible lobbying

Environmental regulations originated in national, European and international institutions. In fact, close to 90% of these regulations arose at the European and international levels, for example, through the Kyoto Protocol<sup>G</sup> and the Basle Convention. Veolia Environnement has to act in these different economic, political and legal contexts, taking two vital objectives as its starting point:

- anticipate the major challenges of the future in environmental services management and thereby contribute to debate at various levels;
- promote best practices in order to minimize our activities' impacts on the environment and on human health.

Given the context, our lobbying activity is organized at several levels:

- a major international presence: Veolia Environnement is in contact with many organizations that influence thinking on environmental policy. Some examples are the OECD,

UNEP, UNITAR, UN-Habitat, WFP, UNICEF, Unesco and FAO. We also work with think tanks and non-profit organizations, which give us input upstream of the legislative process;

- as Veolia Environnement's domestic market, Europe is a focal point. Because we are represented in European institutions, our analyses and proposals are relayed and we are ensured a regular presence in the bodies regulating, standardizing and representing our activities (European Commission, European Parliament, Council of the European Union, Council of European Municipalities and Regions, European Economic and Social Council, representations of the Member States, technical committees, trade associations, an industry organization (BUSINESSEUROPE, formerly UNICE) and a think tank (Confrontation Europe);
- in France, Veolia Environnement either directly lobbies stakeholders<sup>G</sup> or lobbies through trade associations.

The table below presents significant examples of our approach to lobbying.

	Subject matter	Reason(s) for lobbying	Objective(s)	Means employed	Results
WATER	European directive on the protection of groundwater from pollution and deterioration (2006/118/CE) of December 12, 2006	Veolia Water extracts groundwater in order to produce drinking water.	- Lobby for strict environmental quality standards on pesticides and nitrates. - Have the directive recognize artificial groundwater recharge.	Veolia Water lobbied the European Commission and European Parliament through EUREAU <sup>1</sup>	Lobbying completed: the ideas that Veolia Water argued for via EUREAU were retained in the directive.
	Directive on the management of bathing water quality (2006/7/CE) of February 15, 2006	Most bathing water contamination observed so far has been associated with inadequacies in wastewater systems in wet weather. The directive called for application of the objectives imposed by the framework directive on water before the framework directive took effect, in other words, before the work could be carried out on the wastewater systems.	Ask for the application dates of the bathing water directive to be aligned with those of the Water Framework Directive (WFD) because in the first versions of the text, the bathing water directive was to take effect in 2009 while the first deadlines for the WFD were set between 2013 and 2015.	Veolia Water lobbied the European Commission and European Parliament through EUREAU <sup>1</sup>	Lobbying completed: the ideas that Veolia Water argued for via EUREAU were retained in the directive.
	EU study of the issues associated with pressure on water resources and drought	At the last meeting of the water directors of the Member States, in June 2006, the Member States asked for a study of the issues associated with pressure on water resources in Europe and with periods of drought. The issue for Veolia is recognition of the urgent need for local decision-making in cases of pressure on water resources and periods of drought.	Convince the European Commission of the need for additional guidelines regarding the Water Framework Directive (WFD); in other words, better definition of the exemption criteria for the objective of "good ecological status" mentioned in the directive and an effective introduction of the user-pays principle mentioned by the WFD.	Veolia Water lobbied the European Commission through EUREAU <sup>1</sup>	So far, no results have been obtained. However, a task force steered by the Commission was set up in November 2006 and has already published its first report. In addition, the new strategy of common WFD implementation now includes "pressure on resources and drought."

	Subject matter	Reason(s) for lobbying	Objective(s)	Means employed	Results
WASTE MANAGEMENT/ WATER	Revision of Directive 86/278/CEE on wastewater sludge	We want to encourage coordination with the soil strategy under development and defend maintenance of the different treatment options (waste or product).	Encourage organic recovery.	Veolia lobbied within EUREAU in cooperation with FNADE <sup>2</sup> and FEAD <sup>3</sup>	The Commission's revision project, which reflected its desire to unilaterally increase restrictions on land application of sludge, has been taken off the agenda. It will be proposed again in 2008 or 2009.
	Revision of the Waste Framework Directive <sup>4</sup>	For 30 years, this directive has set the framework for the activities of Veolia Environmental Services. It is therefore imperative that its review—examined in first reading by the European Parliament and the Council of the European Union—take into account all aspects of responsible waste management.	Include basic rules in this framework agreement: health and safety, the maintenance of provisions on hazardous waste, a consideration of all types of recovery (materials, energy) and traceability requirements. The different possibilities for the status of waste is another important point that needs addressing.	Tools have been developed to contribute to the ongoing debate concerning this directive: - a summary, Veolia Environmental Services' 12 Proposals for Waste Management, was distributed to all of the interested parties; - launch of the worldwide waste review.	The directive is still in first reading and we are doing our utmost to make sure that our proposals are understood and examined by the European Parliament and Council. Parliament has accepted many proposals and amendments. Now the focus must be on the work done on this directive by the Council of the European Union.
WASTE MANAGEMENT	Proposed directive defining a framework for protecting soil	Soil is threatened by many factors and needs protection. The Commission proposed a framework directive in September 2006, and several aspects of it directly concern Veolia Environmental Services' activities.	- Promotion of the rational use of exogenous organic matter, decontamination and prioritizing the use of industrial sites in order to preserve undeveloped sites. - Clarification of the relationship with other existing regulations. - Harmonization of the methods for determining concentrations in hazardous substances. - Prioritize, in risk evaluation, sites where the health and environmental risks are greatest.	Veolia Environmental Services took part in a French Senate symposium on November 20, 2006 in association with the magazine <i>Valeurs Vertes</i> and the farmers' group SAF-Agriculteurs de France on "Soil: Protecting and improving the resource: a global issue." The symposium provided an opportunity to confront the viewpoints of personalities from the scientific, industrial and agricultural communities on issues related to soil, its protection and exploitation. Lobbying was also carried out through FNADE and FEAD.	The proposed directive is in first reading by the EU institutions. Veolia Environmental Services is continuing its efforts to ensure that its proposals are examined and discussed.
	Preparation of the directive on energy efficiency	The directive's objective was to create the conditions for rational energy use. But in the initial wording, the drafters focused mainly on the situation of producer-distributors, ignoring the specific role of companies like Veolia Energy (Dalkia) that are specialized in energy efficiency and whose activities can provide targeted responses to this directive's issues and objectives.	- Improve knowledge of the specifics of Veolia Energy's business, its experience and the value of its experience for implementing the objectives the EU is seeking. - Avoid the risks of unfair competition, in particular the use of their position by energy producers and distributors to limit other players' access to the energy efficiency market.	Lobbying of the members of the European Commission and Parliament through the European Federation of Intelligent Energy Efficiency Services (EFIEES)	- The definitions retained in the directive (published early 2006), take our suggestions into account and distinguish between business in "energy efficiency" and the vague term "energy services." - Provisions that ignored the existence of our business and subjected us to unfair competition have been removed (for example, the possibility for producer-suppliers to offer free audits financed by energy sales).
ENERGY SERVICES	Draft European regulation on public service obligations in public passenger transportation by rail and road	This draft regulation should open the European public road and rail transportation market to public-private partnerships in the next few years.	Defend a number of positions so that the text will retain all of its substance: - open and transparent access to the road and rail market; - limitations on the length of subsidies by mutual agreement; - prohibition of bidding on open contracts by companies holding directly awarded contracts.	Lobbying of EPTO, the association of private European operators	In progress.
	Negotiation of the collective agreement for the rail transportation branch, which will apply to companies established in France once the French freight market is opened to competition	Introduction of an applicable collective agreement.	Arrive at a modern legislative framework on employment that will make for flexible, versatile staff prepared for the needs of a private sector company.	- Participation in the employers' delegation at the parity commission. - Preparation of negotiations for the organization representing the sector, the International Association of Public Transport. - Participation in the domestic projects steering committee	Negotiations began at the end of 2006.  Possible time frame for negotiations: 18 months.
TRANSPORTATION	"Domestic" environmental projects	It is in Veolia's interest for financial incentives to be established because they will reward its reductions in greenhouse gases.	Create financial incentives for reducing greenhouse gas emissions in the transportation sector, which is not covered by the directive on quotas.	- Comments to French government and European Commission representatives.	Launch of the domestic projects in France by the Minister of Finance and Economic Affairs on December 4, 2006.
VEOLIA					

<sup>1</sup> EUREAU: European union of national associations of water and wastewater service suppliers

<sup>2</sup> FNADE: French national association of waste management and environmental services

<sup>3</sup> FEAD: European Federation of Waste Management and Environmental Services

<sup>4</sup> Proposed directive of the European Parliament and Council, of December 21, 2005, regarding waste [COM(2005) 667 - Not published in the Official Journal].

# Intensifying dialog with our stakeholders

## Identifying our stakeholders and their expectations

By the very nature of its activities, Veolia Environnement is rooted in the local context. Each of our operations is part of an urban or industrial fabric forming a specific community that has numerous and diverse expectations concerning our economic, social and environmental impacts.

Our actions at the corporate level are therefore only a fraction of our dealings with stakeholders. The essential part lies in the day-to-day

management of our activities. By the same token, the stakeholders with whom we have specific and more elaborate relations (*see, for example, in lobbying government, pages 48-49*) do not reflect the diversity of the players with whom we interact on a regular basis.

Moreover, each of our activities is part of a higher-level network with specific stakeholders who are dealt with by each of our operating divisions. The

table opposite shows our main stakeholders' expectations regarding the major challenges we have identified for our businesses. The information is based on all of our contacts with these stakeholders through our annual reports and other publications, but also through the public events the company participates in, public inquiries and consultative bodies, industry working groups, customer satisfaction surveys, partnerships and the like.



## Best Practice

### Involving our partners in order to improve access to public transportation for people with reduced mobility

In early February 2005, French law made it obligatory for all urban and long-distance transportation systems to be accessible to people with disabilities. In Le Havre, where it manages the transit system, Veolia Transport initiated dialog with all of its partners and in particular with organizations representing PRMs.

The first stage, in 2006, consisted of introducing 17 buses equipped with special ramps on one of its routes and modifying the sidewalks at the bus stops to make it easier for PRMs to board the vehicles. Technical difficulties were overcome thanks to the involvement of the various stakeholders<sup>G</sup>, such as associations for the disabled (GIHP, APF, Louis Delamare Foundation), our CTPO Bus Océane subsidiary, the drivers, the Le Havre metropolitan area authority, the City of Le Havre and the construction company. The result was an improvement in access and information for the disabled, as well as in the drivers' work, through ground markings to guide the drivers and the preparation of information documents, such as a guide to accessibility and a map showing accessible stops.

This pilot initiative will serve as a basis for future projects: a new route is to be equipped, more accessible buses will be added in 2007, route use by the disabled will be evaluated and a handbook on bus-stop layout will be distributed to all of the area's municipalities.



This table shows the interest expressed by our stakeholders in Veolia Environnement's commitments and priorities.

Commitments and priorities	Clients and customers					Non-profits and NGOs					
	Shareholders and financial community	Public authorities	Consumers and consumer groups	Industrial and tertiary companies	Suppliers and service providers	Employees and trade unions	Environment	Out-reach	Neighbors and neighborhood groups	Scientific and academic community	Government
<b>Strategy</b>											
R&D work		✓		✓			✓			✓	✓
<b>Approach</b>											
Ethical standards	✓	✓	✓	✓		✓	✓				✓
Risk management	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Dialog with our stakeholders	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Economic performance</b>											
Sustainable financial performance	✓				✓	✓					✓
Customer satisfaction		✓	✓	✓							
Service commitments to clients		✓	✓	✓							
Service commitments to industry				✓							
Responsibility toward our suppliers/procurement					✓						
<b>Social performance</b>											
Employment	✓	✓				✓		✓	✓		✓
Skills management and development		✓				✓		✓		✓	✓
Compensation, benefits and social protection		✓				✓		✓			✓
Length and organization of work time						✓		✓			✓
Employee health and safety		✓	✓	✓		✓		✓			✓
Employee-employer relations	✓	✓		✓		✓		✓			✓
Social policy innovation		✓				✓		✓			✓
Diversity		✓				✓		✓			✓
<b>Environmental performance</b>											
Environmental Management System	✓	✓			✓		✓		✓		✓
<b>Conserving natural resources</b>											
Conserving water resources		✓	✓	✓			✓		✓		✓
Conserving energy resources				✓			✓				✓
Conserving raw materials				✓			✓			✓	✓
Conserving soil and biodiversity		✓					✓		✓	✓	✓
<b>Limiting our environmental impacts</b>											
Combating climate change	✓	✓		✓			✓			✓	✓
Environmental health		✓	✓				✓		✓		✓
Reducing atmospheric pollution		✓	✓	✓			✓		✓		✓
Reducing pollutant discharge into water		✓	✓	✓			✓		✓		✓
Conserving biodiversity		✓					✓		✓	✓	✓
Managing our own impacts	✓	✓		✓		✓	✓		✓		✓

# Meeting the challenges facing us

Our sustainable development approach gives us a better picture of our stakeholders'G expectations. In turn, this enables us to intensify our internal analysis of the challenges that confront us due to the nature of our activities and the diversity of the environmental, social and geopolitical contexts in which we operate.

## Water

### Promote access to essential services

The World Bank and GPOBA (Global Partnership for Output-Based Aid), in support of the National Initiative for Human Development (INDH) spearheaded by King Mohammed VI of Morocco, have made a donation to finance a subsidized-connectionG program in which Amendis, a Veolia Water subsidiary in Morocco, is a stakeholder. Amendis received a donation of \$2 million (€1.49 million) to be used exclusively to promote connection to the municipal water and wastewater systems. The donation subsidized connections for 3,000 low-income households. Thus, 20,000 people benefited directly from the project.

Amendis' role is to help the Moroccan authorities make INDH a success and fulfill the commitments that were a condition of the donation. Veolia Environnement's first step was to enter into a partnership with the Moroccan ministry of the interior and the contracting authority in order to obtain the aid. The donation is contingent on meeting the specifications defined by the World Bank.

### Increasing consideration for biodiversityG in our water and wastewater services

Veolia Water's program at the wellfield of the Crépieux Charmy

water production facility was extended in 2005 to include all of its facilities in Lyons. Now the goal is to include all of the facilities managed by Veolia Water in France's Centre-Est region, followed by all of France and, in the medium term, all of Veolia Water's activities.

The three pillars of the program are an assessment of the sites' wildlife, the introduction of a consultative process, and adaptation of management methods based on the results of the assessment and consultation.

In preparation for program extension, a workshop on biodiversityG and site management was held during the regional seminar in October 2006. Regional operating methods are being established and new programs are being included during contract renewal negotiations.

## Waste management

### Adoption and implementation of REACH

The REACHG regulation defines a new European policy on the management of chemicals (their registration, evaluation and authorization). After years of intense negotiations, REACH was adopted in December 2006 and will take effect on June 1, 2007. REACH is an EU regulation applying to all of the Member States. While it does not apply to waste, it will have implications for our company.

An internal Veolia Environmental Services task force has been set up, targeting the division's health and safety, technical, purchasing, industrial markets and emerging markets managers. The objectives are to determine the exact consequences for our activities of the system established by REACHG and prepare the division for the adjustments that will be required internally and in its contractual relationships. The task force's work will continue in 2007.

### Clarification of responsibilities at each level

It has become necessary to clarify the definitions of all of the players (under international, EU and French law) in the waste treatment chain. This is now being done in connection with the revision of the framework directive. A clear distribution of the responsibilities (at the international, European and national level) of each of these players is needed to ensure a high level of environmental protection during waste treatment.

### Health and safety

Veolia Environmental Services wants to educate its employees about protecting their own health and that of others. Many campaigns have been carried out on smoking (information and help in quitting at Veolia Environmental Services' headquarters in Nanterre), hygiene ("clean hands" campaign) and fatigue