LET'S MAKE **OUR CITIES SUSTAINABLE**



LET'S MAKE OUR CITIES SUSTAINABLE

THE TRIPLE CHALLENGE OF DEVELOPMENT, QUALITY OF LIFE AND THE ENVIRONMENT

Since 2009, more than one out of two people have been living in a town or city. By 2050, there will be 6.4 billion city dwellers on the planet, who shall want first and foremost to have access to essential services whilst living life in a harmonious environment, a source of well-being and personal growth.

From the very beginning, cities were built and stretched along coastlines and rivers, sources of energy, trading, transport, water and life. To support the development of cities, infrastructure and services for the management of drinking water, wastewater and waste were deployed, providing city inhabitants with a clean and safe environment to live in. In the future, these services shall continue to be key factors in the well thought-out and sustainable growth of cities.

Integrated within its natural environment, a city must be a place with a strong sense of community spirit and cooperation among generations and neighbourhoods. A city that is proud of its past, of its cultural heritage and of its specificities, but also open to the future and to modernity. Building such a city and making it attractive requires everyone's involvement.

These challenges are also those of SUEZ ENVIRONNEMENT (GDF SUEZ Group): bringing together development, quality of life and the environment.

For more than a century, SUEZ ENVIRONNEMENT has been working at the heart of cities and regions and supporting all the players, decision-makers and experts of the urban space. Every day, SUEZ ENVIRONNEMENT runs and maintains complex infrastructures which ensure the production and distribution of drinking water, the collection and treatment of wastewater and the collection, treatment and recovery of waste, so that we can all live in harmony with our cities.

Through long-term and locally-based relationships, SUEZ ENVIRONNEMENT, backed by its eighty thousand employees around the world, help cities to grow by offering tailor-made and adapted solutions. In that sense, SUEZ ENVIRONNEMENT deploys its solutions in cities of varied sizes and cultures, such as Perth in Australia, Chongqing in China, Santiago in Chile and Casablanca in Morocco. Furthermore, with its research centres and its network of partners, SUEZ ENVIRONNEMENT is creating tomorrow's solutions.

Like ecosystems, the workings of the cities are increasingly complex in an ever more demanding context. For that reason, as a historic and innovative player in the management of the main water and waste cycles, in France and around the world, SUEZ ENVIRONNEMENT brings its experience, its know-how and its innovations to all the players for towns and cities in order to build a high-performance, responsible and ecological city: a sustainable city.

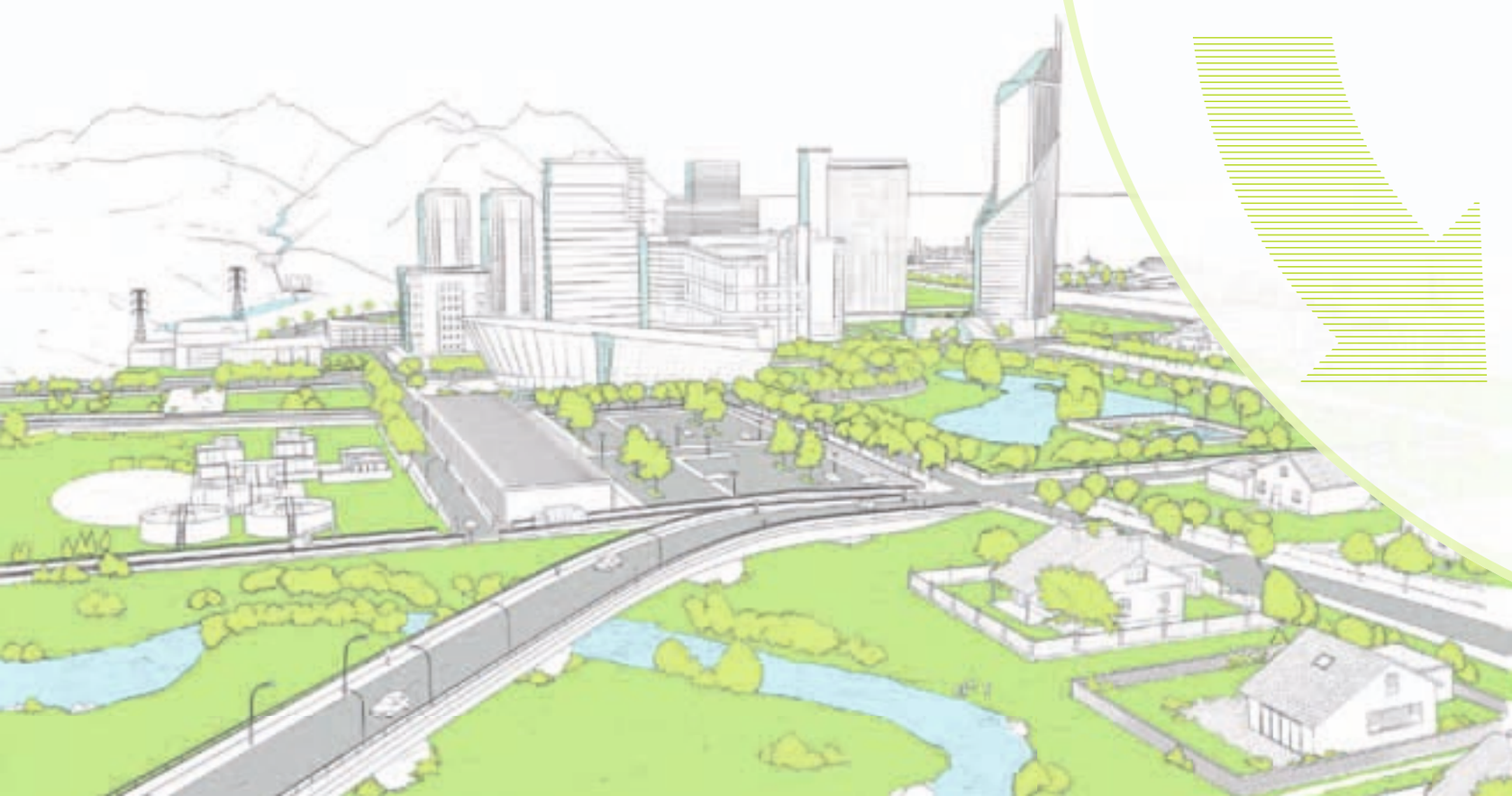
INTEGRATED INTO ITS ENVIRONMENT, A CITY MUST BE A PLACE WITH A **STRONG SENSE OF COMMUNITY SPIRIT AND COOPERATION** OPEN TO THE FUTURE.



LET'S MAKE **OUR CITIES SUSTAINABLE**

PREPARING CITIES FOR **RISKS** AND **CHANGES**

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WATER, A KEY FACTOR IN THE **DEVELOPMENT** OF CITIES

"**Water in the city is critical.** Most often it is invisible and yet essential to any urban organisation. It is the starting point for many other urban challenges, both technical and socio-cultural."

MICHEL CANTAL-DUPART, urban planner-architect, professor at the Cnam ("Urban planning and environment" chair professor) and member of the scientific council of the International Workshop on Greater Paris.

Water is one of the essential flows that supply the city and give it the possibility for human and economic development. SUEZ ENVIRONNEMENT works every day on the entire water cycle to supply cities with a variety of water resources as well as drinking water that is safe to drink and is of high sanitary and ecological quality. In particular, SUEZ ENVIRONNEMENT ensures water quality and quantity management by offering, where appropriate, alternative resources (seawater desalination, artificial groundwater recharging or reuse of treated water) by implementing technologies such as reverse osmosis.

OPTIMISING DRINKING WATER NETWORK EFFICIENCY

The innovative "Missing water circle" method is used to find out about the performance of the drinking water distribution network and to find ways to improve it. It identifies water losses in the distribution network and evaluates the volume of water that has not been recorded. The objective is to forecast the recoverable volume and then put forward a corrective action plan to reduce costs and preserve the water resource. This method was, for example, used by Lyonnaise des Eaux in the urban community of Bordeaux (gain of 1.6 million cubic metres and 2.7% yield improvement in six months), in Algiers by SEAAL (transition from an intermittent feed to a 24/7 supply), in Vienna (in France), under direct management (optimising the 2010 investment plan), in Casablanca by LYDEC (yield improvement of 10% over ten years) and in five of the largest cities in China managed by SUEZ ENVIRONNEMENT.

...and tomorrow...

MEASURING THE WATER FOOTPRINT

Through its subsidiary SAFEGE, SUEZ ENVIRONNEMENT follows and takes part in the international initiative to develop the ISO 14046 standard relating to the water footprint. Using the same calculation that was used for the environmental footprint and according to the Water Footprint Network, the water footprint is defined as the total volume of water used directly or indirectly to produce a product or a service. This quantity is estimated by taking into account water consumption and pollution along the entire production chain. The measurement of this volume forms part of the development of a comprehensive strategy for the management of the resource.

SUEZ ENVIRONNEMENT ENSURES WATER RESOURCE QUALITY AND QUANTITY MANAGEMENT



NEW **SOURCES OF ENERGY** FOR CITIES

"Cities are increasingly looking to **find synergies between urban services** related to energy, water, waste management and mobility. Innovation lies at the intersection of these "traditional" city businesses." **STÉPHANE QUÉRÉ, director of sustainable urban development** at GDF SUEZ.

The scarcity and rising prices of fossil fuel are prompting the city to improve its energy performance across all of its activities.

SUEZ ENVIRONNEMENT contributes to the local production of non-fossil energy through energy recovery processes and the recovery of biogas and sludge from waste storage sites and wastewater treatment plants. This "biogas" can then be used to produce electricity and heat or, once it has undergone purification, it can be re-injected into the natural gas network.

The Group has also commissioned one of the most modern energy recovery plants in Europe, ReEnergy, at Roosendal in the Netherlands. Every year, ReEnergy produces the equivalent of the electrical consumption of seventy thousand households. The heat produced can be used to fuel greenhouses near the plant and the residual heat will be used to heat an eco-district currently under construction. On a broader level, SUEZ ENVIRONNEMENT is developing new solutions to provide integrated energy to cities and to improve the energy efficiency of urban services.

RECOVERING CALORIES FROM WASTEWATER

Lyonnaise des Eaux offers Degrés Bleus®, a combined heating and air conditioning solution that reuses calories from wastewater. The solution, which is intended for local authorities and building managers, has been implemented for the heating of the Wattignies school in Paris. As it covers up to 73% of requirements, this solution is expected to reduce greenhouse gas emissions by approximately 76 teqCO_2 per year. The Levallois aquatic centre is also seeing the benefits of using this technology. With the calories from the water discharged by ten thousand inhabitants, this solution provides permanent thermal comfort. This process helps to reduce energy costs (48,000 euros saved since the first year) and fight against global warming (66% reduction in greenhouse gas emissions, i.e. 150 teqCO_2 per year).

...and tomorrow...

ENERGY RECOVERY FROM WASTEWATER TREATMENT WASTE

CETaqua – the laboratory of AGBAR, a subsidiary of SUEZ ENVIRONNEMENT – is the leader of the BIOCELL project (supported by the European LIFE+ programme for the environment and nature). This project aims to demonstrate the technical feasibility and economic and environmental relevance of energy production from fuel cells powered by biogas that has been produced from wastewater treatment waste. The SUEZ ENVIRONNEMENT network of research centres is working on the operational testing of new sources of energy, thereby maximising the energy performance of infrastructures and fighting against climate change.

91 MILLION PEOPLE AROUND THE WORLD HAVE THEIR DRINKING WATER SUPPLIED BY SUEZ ENVIRONNEMENT

CONTROLLING THE FLOWS **OF WATER AND WASTE**

INNOVATIVE AND **RESPONSIBLE** MANAGEMENT

"Nowadays, ***an efficient city is a city that is well-equipped*** with infrastructures. Sanitation and waste treatment systems, previously only considered as a cost, are now making a city attractive." **DOMINIQUE LORRAIN, director of research at CNRS** (LATTS) and director of the City chair at the École Nationale des Ponts et Chaussées.

All city activities produce waste and effluents whose management is becoming increasingly complex for public service providers. SUEZ ENVIRONNEMENT supports local authorities in this management to achieve their sanitation objectives. The Group also contributes to the development of a circular economy through its sorting, recycling and waste recovery activities. By way of example, SITA France, a subsidiary of SUEZ ENVIRONNEMENT, produces copper pellets from electric cables that have reached the end of their lives which are then reused by NEXANS to make new cables..


Northumberland conty (United-Kingdom).

WASTE MANAGEMENT PARTNERSHIPS

SITA helps municipalities to meet the recycling targets set by national regulations. For example, in Great Britain, SITA UK is helping the county of Northumberland to exceed the target set by the government to recycle and compost 40% of its municipal waste, through a private finance initiative (PFI) contract. The two partners have the common goal of limiting the proportion of waste that will be put in storage centres in 2012 to 8%, a rate that should be achieved through a high level of recycling combined with energy recovery from residual waste.

On the other hand, since 2010, SITA France has been a partner of the Food Banks which, throughout France, collect, sort and distribute food free of charge to combat wastage and help the most disadvantaged to feed themselves and eat better. The partnership aims to contribute and use SITA's know-how (through the training of volunteers) to improve the quality of sorting and storage of food collected by these banks. SITA is also participating in the financing of sorting rooms in the Food Banks.

...and tomorrow...

USING STATE-OF-THE-ART TECHNOLOGY TO REMOVE MICROPOLLUTANTS

The water framework directive sets 2015 as the year by which the good ecological and chemical status of water bodies is to be restored. To meet this challenge, SUEZ ENVIRONNEMENT and CEMAGREF have formed a research partnership, which includes the AMPERES programme, which is co-financed by the French National Research Agency (ANR), and has a total budget of 2.4 million euros. This programme was designed to identify the priority substances and the micropollutants present in urban wastewater, and then determine the most effective treatment for their removal. While most stations already remove up to 85% of these molecules, the removal of the residual amount now requires the use of state-of-the-art treatment solutions such as the membrane bioreactor solutions developed by Degrémont, combined with advanced tertiary treatments.
Current R&D work is geared towards testing these new treatments for the removal of micropollutants.

SUEZ ENVIRONNEMENT SUPPORTS LOCAL AUTHORITIES IN THE MANAGEMENT OF WASTE AND EFFLUENTS GENERATED BY THEIR ACTIVITIES



A PROTECTED **LIVING ENVIRONMENT**

"Pneumatic collection doesn't only solve the issues related to waste. **Healthier, safer, less burdensome,** simpler..., it makes things better for everyone: citizens, industrialists, workers and elected officials." **CÉCILE VEYRUNES, Deputy Mayor** of Vitry-sur-Seine, in charge of waste management.



Vitry-sur-seine (Val-de-Marne).

The activities of the city are likely to bring about noise and odours, for which satisfactory solutions must be found.

Due to technical and urban constraints, some wastewater treatment stations, such as the Marseilles station, are located right in the heart of the city. Subsidiaries of SUEZ ENVIRONNEMENT are therefore developing infrastructures which will have a limited impact on city residents.

SUEZ ENVIRONNEMENT considers urban services as a whole and puts forward transversal innovative solutions to reduce disruption and to achieve a pleasant and healthy living environment. Thus, SITA France, a subsidiary of SUEZ ENVIRONNEMENT, has worked with partners to develop an electric waste collection lorry to eliminate air pollution and reduce the noise associated with the collection of household waste. Lyonnaise des Eaux, meanwhile, is working on the reintroduction of water and nature into the city by building fountains, laying out valleys, etc.

PNEUMATIC COLLECTION FOR A RENOVATED CITY

As part of the urban renewal of the Balzac neighbourhood, the town of Vitry-sur-Seine has decided to have its waste collected through pneumatic suction. By 2018, ten thousand households, in four large housing areas, will be served by a 10.5 km long underground network, making such a project the largest developed in Europe. This is not only an effective response to increasing waste and congestion of collection services, but also a true metamorphosis of the living environment of city residents.

Having receptacles available, no longer having containers on pavements and the eradication of unpleasant odours will make public spaces cleaner and healthier. This organisation will facilitate sorting and improve its quality, especially in collective housing.

...and tomorrow...

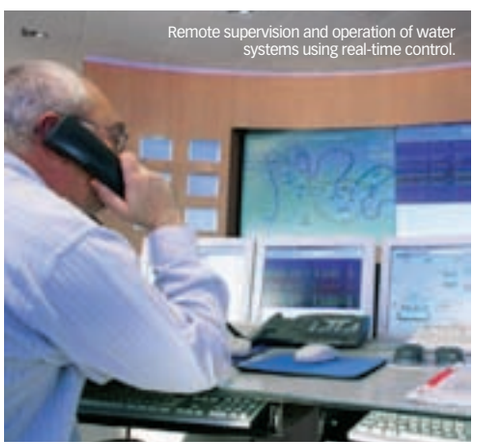
RESTORING OUR MARINE ENVIRONMENTS

A number of SUEZ ENVIRONNEMENT subsidiaries are working on projects that will help restore the integrity of the marine ecosystem and promote its resilience to the operation and infrastructure of the city. Thus, the GIREL (Infrastructure Management for the ecological rehabilitation of the coastline) programme, implemented on the large port of Marseille and selected as part of the call for projects launched in May 2010 by the Rhône Méditerranée et Corse Water Agency and the PACA Sea Cluster, includes SAFEGE (transplantation of algae structures, trophic resources and indicators of water quality) and Lyonnaise des Eaux projects, in partnership with Ecocean (capture, breeding and release of indigenous juvenile fish populations).

350 SUEZ ENVIRONNEMENT MANAGES 350 SORTING CENTRES AND 118 COMPOSTING PLATFORMS AROUND THE WORLD

SUSTAINABLE MANAGEMENT OF INFRASTRUCTURES

"Companies must take part in the improvement of the city, in other words, like elected officials, they must deal with the fundamental issues: making a city work using high-performance tools that enable everyone, every day, **to thrive in a common space.**" **CÉCILE VEYRUNES, Deputy Mayor** of Vitry-sur-Seine, in charge of waste management.



Remote supervision and operation of water systems using real-time control.

City infrastructures deliver daily essential services to city residents, such as the distribution of drinking water, the collection of wastewater and rainwater, etc. It's imperative that these services operate permanently at the highest level. Their long-term effective management is complex and requires high-performance tools for forecasting, modelling and comparing potential alternative solutions, whilst also taking economic constraints into account. SUEZ ENVIRONNEMENT provides its expertise in these areas to support the sustainable management of drinking water and sanitation networks.

SUSTAINABLE MANAGEMENT OF OUR UNDERGROUND RESOURCES

The water systems of the city represent a significant investment (construction, maintenance, renewal) which must meet the everyday expectations of city residents. Sustainable and long term management of the underground resources of cities helps in dealing with the many issues relating to the age of water networks. It improves the quality of water and sanitation services, by optimising the technical and economic performance of the network. This sustainable management avoids water losses and increases the environmental performance of the service (carbon footprint, trenchless works).

SUEZ ENVIRONNEMENT and its subsidiaries have developed a range of innovative and complementary solutions, based on the acquisition, integration and analysis of data and modelling simulation of network operations: ANTICIPER, by SAFEGE, is used to prioritise work and interventions in the short term; PREVOIR, by Lyonnaise des Eaux, deployed for example in Bordeaux, to plan long-term renewal based on the level of service sought; METRESA, by AGBAR, set up in Alicante, to optimise interventions and the renewal of the sanitation network. These solutions also allow local authorities to maximise their investments.

...and tomorrow...

HIGH-PERFORMANCE AND SUSTAINABLE SOLUTIONS FOR NETWORK INSTALLATIONS

The research programme ECORES is the result of a partnership between several SUEZ ENVIRONNEMENT and GDF SUEZ research centres. It aims to test various innovative techniques for installing gas and water pipes in order to assess their technical, environmental and economic performance. New techniques for works in urban areas will not only optimise network operations, but also limit the inconvenience caused to residents (traffic, noise ...) and to the environment.

SUEZ ENVIRONNEMENT IS DEVELOPING INNOVATIVE SOLUTIONS BASED ON THE MODELLING OF NETWORK OPERATIONS



INTEGRATED **URBAN DEVELOPMENT**


Harbor design and development.

To grow sustainably, the city must be viewed in context. SUEZ ENVIRONNEMENT therefore participates in the environmental performance assessment of projects so that urban renewal programmes and the construction of new neighbourhoods are optimal. Furthermore, to perform well across the city, the solutions must fit in to the existing urban context. With that in mind, GDF SUEZ and SUEZ ENVIRONNEMENT are adopting an integrated approach to urban development across the city, neighbourhood, and even the building.

"City planning that works has to be thought out conceptually and technically; it must **meet the subtle complexity of cities** created by the knowledge and cultures brought in by all the stakeholders in the city."

MICHEL CANTAL-DUPART, urban planner-architect, professor at the Cnam ("Urban planning and environment" chair professor) and member of the scientific council of the International Workshop on Greater Paris.

ADVANCE CONSULTATIONS FOR URBAN PROJECTS

To help local decision-makers in their planning choices, SUEZ ENVIRONNEMENT and its subsidiary SAFEGE have developed a range of consultation services related to the issues of urban development and environmental performance of eco-districts: project management assistance with regard to sustainable development, such as for the Triangle de Gonesse development project, environmental analyses of urban planning, HQE Aménagement® (High Environmental Quality Development) initiatives, studies and project management of urban transport schemes.

And, to enable city authorities to measure and monitor the relevance of the scenarios and recommended solutions, SUEZ ENVIRONNEMENT has developed a multi-criteria assessment to evaluate project and service performance: CityBiose®.

...and tomorrow...

THINKING ABOUT THE CITY IN A SYSTEMATIC AND CONTEXTUAL WAY

Presented by a multidisciplinary team from the social sciences, engineering sciences and environmental sciences (LATTS, ENPC, SUEZ ENVIRONNEMENT, EPA Plaine de France), the SYRACUSE project was selected as part of the French National Agency for Research's (ANR) "Sustainable buildings and cities" programme. It studies the possible synergies existing between various urban services (water, waste, energy, etc.) in association with analysis of social, economic, physical and environmental data to determine the technologies that are best suited to a given context. These synergies are considered at different city scales (buildings, neighbourhoods) and seek to reduce the energy and natural resources being consumed and limit the discharge of waste and all kinds of pollutants.

190,000 KM OF DRINKING WATER DISTRIBUTION NETWORKS AROUND THE WORLD DEPLOYED BY SUEZ ENVIRONNEMENT

PREPARING CITIES FOR **RISKS** AND **CHANGES**


Wastewater treatment plant (Bordeaux).

CONTROLLED MANAGEMENT OF **RISKS...**

"The sustainable city is **not a concept or an ideology**; it is a local and continuous construction that interacts with citizens, of highly-efficient and economically viable solutions over time." **GUY GEOFFROY, deputy for Seine-et-Marne, Mayor** of Combs-la-Ville and President of the National Association of Eco-Mayors.

The environment in which cities develop is one that is in constant evolution and which involves risks. To deal with climate change, demographic growth, threats to biodiversity, natural risks and the increasing complexity of rules governing municipal responsibility (safety and quality of life), SUEZ ENVIRONNEMENT develops services that are specially adapted to urban systems. Their ultimate aim is to contribute to the prevention of risks by becoming part of a proactive approach which is focused on climate and environmental performance.

PREVENTING FLOODING AND POLLUTION RISKS

The prevention of flood risks and the ecological and sanitary quality of natural environments and bathing water are major concerns for public authorities. That's why SUEZ ENVIRONNEMENT, through its subsidiaries, has developed a range of complementary innovative solutions based, among other things, on the real-time modelling of the behaviour of sanitation systems during periods of rain and the impact on environments.

Lyonnaise des Eaux rolled out the INFLUX solution, which has been adopted by the urban community of Bordeaux, and also the Syndicat Interdépartemental pour l'Assainissement de l'Agglomération Parisienne (SIAAP, the Paris Sanitation Treatment Authority), which covers 8.6 million inhabitants and 400 kilometres of networks. AGBAR developed its COWAMA (Coastal Water Management) solution in Barcelona and, since, in three other Spanish cities. SAFEGE, in turn, implemented the QUALICÔTE tool, in partnership with Actimar, in the Cannes region.

...and tomorrow...

ADAPTING TO THE RISKS OF FLOODING IN THE MEDIUM AND LONG TERM

Climate change could alter the risks that cities may face. The European Framework Directive on flood risks places a particular emphasis on the consideration of climate change in the reduction and control of flood risks. For over three years, SUEZ ENVIRONNEMENT research teams have been conducting studies in several countries on the impact of climate change on a local scale, to obtain a more thorough understanding of the potential risks cities are facing. Their assessments based on the different types of flooding will make it possible to establish adaptation measures based on the possible developments of such events and climate scenarios.

SUEZ ENVIRONNEMENT OFFERS REAL-TIME SIMULATION TOOLS TO SHOW THE BEHAVIOUR OF NETWORKS DURING PERIODS OF RAIN



... AND **CHANGES**

"Cities are **willing and dynamic players** when it comes to fighting climate change. They may, for instance, favour a circular economy with control of all flows."

STÉPHANE QUÉRÉ, director of sustainable urban development at GDF SUEZ.



Santiago city in Chile.

The issue of climate change is of particular relevance to urban areas. Indeed, towns and cities have a two-fold involvement: they contribute to climate change, but may also be affected by it, depending on their situation, structure and population.

SUEZ ENVIRONNEMENT helps cities and regions both in their analysis and to create regional plans (energy-climate plans, for example), and to implement solutions that enable them to avoid, reduce, and offset their impact on the environment, and ultimately, to be more resilient. The SUEZ ENVIRONNEMENT subsidiaries also know how to adapt infrastructures and their management to the impacts of urban demographic growth. As such, AGBAR, in partnership with Degrémont, which treats wastewater and restores water quality in the region of Santiago, Chile, has anticipated a doubling of the population and has modernised and accordingly revised the capacity of wastewater urban effluent treatment station for water from the Mapocho River.

CARBON FOOTPRINT

Since 2009, the Barcelona metropolitan area (i.e. the city and its thirty-five surrounding municipalities) has been calculating the carbon footprint of the activities of the urban water cycle using the Carbon Footprint Calculator (CAFCA) developed by AGBAR in its CETaqua research laboratory. After creating guides, organising a training plan and adapting the tool for use on the Internet, AGBAR facilitated its distribution in other cities, in Spain and in Chile. In 2009 and 2010, over one hundred people were trained how to use this tool (calculation of the greenhouse gas emission of facilities), representing nearly one hundred and fifty AGBAR operations in those two countries.

and tomorrow...

ASSESSING THE IMPACT OF CLIMATE CHANGE ON THE RESILIENCE OF INFRASTRUCTURES

The infrastructures and water networks as well as their management method could be affected by climate change and its effects. For that reason all SUEZ ENVIRONNEMENT research centres are working on developing a method for assessing the resilience of infrastructures against climate change. Such knowledge would give operators of water infrastructures the ability to optimise the management of the resource by integrating the constraints related to climate change.

74 MILLON EUROS ALLOCATED BY SUEZ ENVIRONNEMENT FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION

CONTRIBUTING TO AN **ATTRACTIVE** AND **HARMONIOUS** CITY

A CITY WITH A SENSE OF **COMMUNITY** AND **IN TOUCH** WITH ITS INHABITANTS…

"Making a commitment with the city for **better social diversity** means being a responsible employer, namely by helping people experiencing difficulties to enter the labour market." **DIANA GALE, Emeritus Lecturer in Public Affairs,** University of Washington, and former Managing Director of Seattle Public Utilities.

A centre of activities and attractiveness, the city is perceived by its inhabitants as a place to live, work and flourish.

As a player of the city, SUEZ ENVIRONNEMENT is contributing to the local and interdependent economy by promoting employment and workplace integration. The Group relies on listening to stakeholders to establish improved management methods for resources and urban services.

In Orléans, the renewal of the production and management of drinking water contract connects the municipality through four committees and a dedicated partnership. This new contract makes provisions for an "Essential water" price band (reduced social rate for the first forty cubic metres) and a "Chèques Ô" solidarity fund (unit cost of 50 euros) managed by the social action community centre for the most disadvantaged populations.

By installing remote meter reading in cities, SUEZ ENVIRONNEMENT is also giving city residents the opportunity to play a part in making greater savings of water resources. The Group has installed such a system in Paris' Left Bank district and across the whole island of Malta (covering four hundred thousand inhabitants), which faces a serious shortage of natural water resources (exacerbated by the consequences of climate change and tourism).

PROMOTING INTEGRATION THROUGH EMPLOYMENT

Established in 2002, SITA Rebond, a SITA France subsidiary specialising in the integration of people through economic activity, promotes access to employment for the long-term unemployed, those receiving social welfare, and young people aged under 26 who lack qualifications. SITA Rebond offers these people individual social work support. Since its creation, it has helped more than three thousand people through its twelve integration entities operating in France.

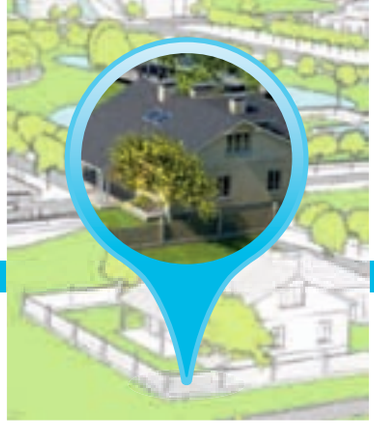
Convinced that promoting equal opportunities is a driver for companies and their performance, in 2011, SUEZ ENVIRONNEMENT set up the Maison pour rebondir, in Bordeaux. Connected to all local (public and private) institutions involved in providing access to employment and training, this entity provides concrete solutions to young people and women who have no access to work, and creates social links by revitalising neighbourhoods where economic activity is weak. This is an initiative that the Group would like to replicate.

and tomorrow…

RENEWING METHODS OF GOVERNANCE

To invent new solutions based on a shared assessment and to redefine water governance in France, in early 2010, Lyonnaise des Eaux launched the "New Ideas for Water" programme. After twelve months of work and dialogue with consumers and all players involved in water, the "Contract for Water Health" was launched. Through this initiative, Lyonnaise des Eaux prepared the adaptation of its business model and renewed its relationships with local authorities and consumers, by offering a more open style of governance for the services it manages on behalf of local authorities.

SUEZ ENVIRONNEMENT HELPS LOCAL AND INTERDEPENDENT ECONOMY BY PROMOTING EMPLOYMENT AND INTEGRATION




Barcelona (Spain).

… A GREAT PLACE **TO LIVE**

"The sustainable city must go beyond the current concept of urbanity and offer much more than a range of geographically concentrated services; it must enable everyone **to live and flourish throughout their lives."**

GUY GEOFFROY, deputy for Seine-et-Marne, Mayor of Combs-la-Ville and President of the National Association of Eco-Mayors.

The lifeblood of regions, the city contributes to their expansion. Dynamic and firmly looking ahead to the future, the city must make people and companies want to move there. Its attractiveness is therefore a priority for SUEZ ENVIRONNEMENT which, with its management of major water and waste cycles, is a stakeholder in a cleaner, more beautiful city, which better integrates nature in an environment that is pleasant to live in every day.

REEVALUATING RIVERS

To the north of Barcelona, the Besòs is a vulnerable coastal river undergoing strong urbanisation and subjected to a Mediterranean climate which causes it to experience large variations in flows. The objective of the AGBAR project and of the Barcelona local authorities was to combine protection against flooding with the enhancement of the river's ecological, environmental and recreational assets.

Works on 9.2 kilometres of the river bed have helped create a 150 hectare riverside park, thanks, among other things, to the improvement in the quality of effluents that have undergone tertiary treatment, the creation of wetlands, the reconstruction of the natural environment of flood-resisting shorelines, improved hydraulic capacity, implementation of a centralised hydrological warning system for the evacuation of the area in the event of torrential flooding, and the building of an amusement park.

BRINGING NATURE BACK INTO THE CITY

and tomorrow…

Following the Grenelle Environnement, all the French players have been taking action on issues of biodiversity, and in particular on the place of nature in the city. SUEZ ENVIRONNEMENT, in connection with environmental associations, continues to analyse and discuss the services provided by the ecosystems and the ecological continuity of the regions, for a city that is on good terms with its natural environment. Lyonnaise des Eaux is working, among other things, on the valuation of water in urban environments, as a source of well-being for inhabitants by offering them protected areas in the city.

80,000 EMPLOYEES IN OVER 70 COUNTRIES ACROSS FIVE CONTINENTS

today...

1. MISSING WATER CIRCLE
Method used to determine and improve the performance of the drinking water network. (P. 6)

2. DEGRÉS BLEUS®
Recovery of calories from wastewater for heating and air conditioning of buildings. (P. 7)

3. ENERGY RECOVERY FROM WASTE
Use of energy from waste through incineration or methanisation. (P. 7)

4. WASTE RECYCLING BY SITA-NEXANS
Recycling by SITA of electric cables at the end of their lives which are then reused by NEXANS to make new cables. (P. 8)

5. PNEUMATIC COLLECTION
Underground collection contributing to the improvement of urban life. (P. 9)

6. PREVOIR®, METRESA®, ANTICIPER®
Tools for sustainable management of our underground resources. (P. 10)

7. CITYBIOSE®
Assessment and visualisation software for the environmental performance of community services (drinking water, sanitation, cleaning, transport, lighting and energy). (P. 11)

8. INFLUX, COWAMA, QUALICÔTE
Solutions for modelling the behaviour of sanitation systems in periods of rain and their impact on the natural environment. (P. 12)

9. CAFCA
Tool for calculating the carbon footprint of activities in the urban water cycle. (P. 13)

10. REMOTE METER READING
Information and real-time management tool for the consumption of water by residential customers and businesses. (P. 14)

11. MAISON POUR REBONDIR
A programme promoting the integration of disadvantaged populations through employment. (P. 14)



INNOVATIVE SOLUTIONS FOR A SUSTAINABLE CITY

Alongside the elected officials and the city's stakeholders, SUEZ ENVIRONNEMENT and its subsidiaries wish to meet the challenges of a city that combines growth, attractiveness and respect for its inhabitants and the environment.



and tomorrow...

WATER FOOTPRINT
Participation in the development of the ISO 14046 standard for measuring the volume of water consumed for a given activity or product. (P. 6)

FUEL CELL
Project to produce electricity from a fuel cell supplied with biogas from wastewater treatment waste. (P. 7)

DISPOSAL OF MICROPOLLUTANTS
AMPERES: Research programme on micropollutants in wastewater at the inlet and outlet points of treatment plants, and assessment of the removal ability of treatment technologies. (P. 8)

RESTORATION OF OUR MARINE ENVIRONMENTS
GIREL: Project for the ecological development of port infrastructures and restoration of coastal environments. (P. 9)

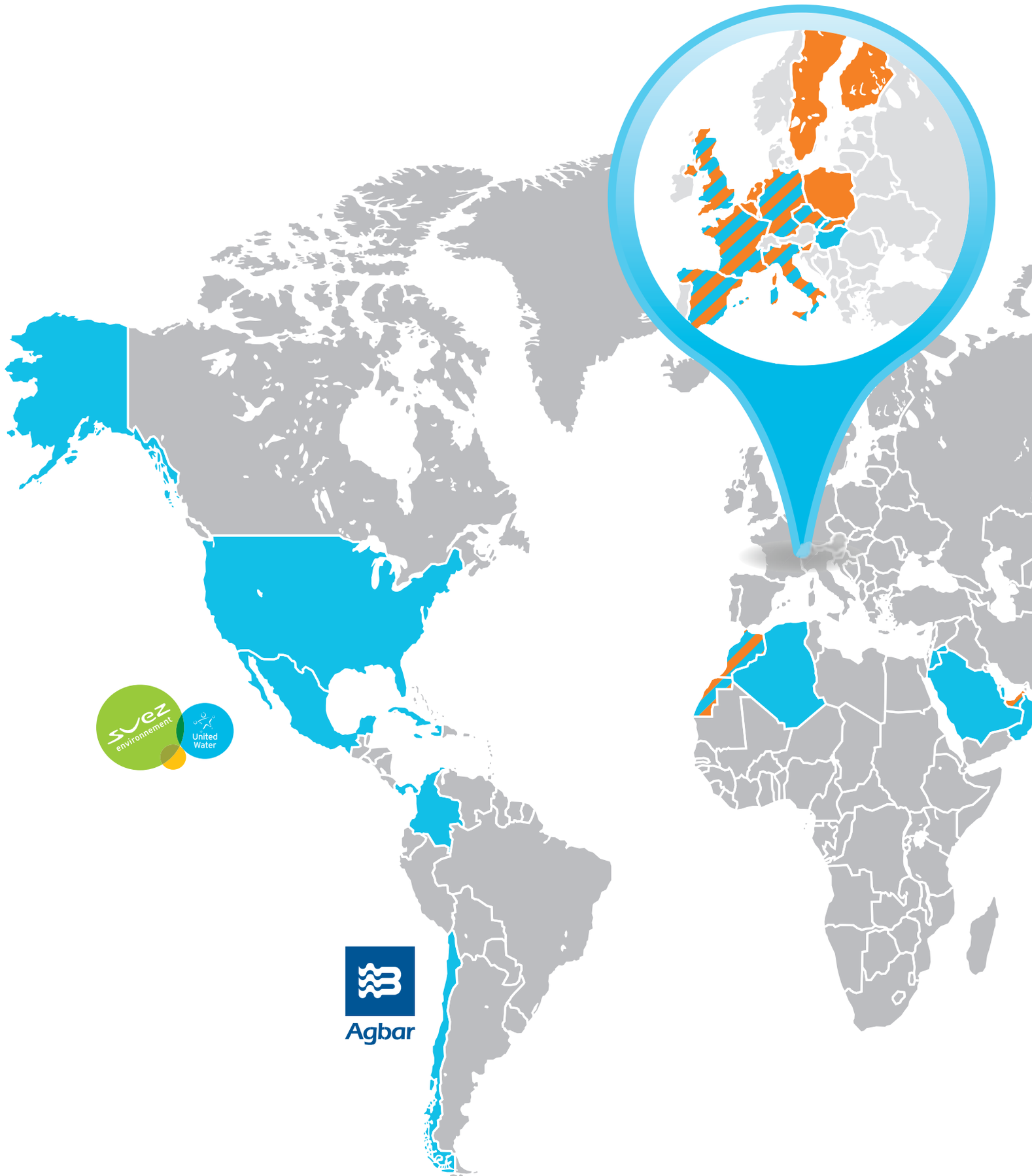
SUSTAINABLE MANAGEMENT OF THE NETWORK
ECORES: Analysis of technical, economic and environmental performance of innovative methods for network installations. (P. 10)

SYMBIOSIS BETWEEN URBAN NETWORKS
SYRACUSE: ANR research programme studying the flows (water, energy, waste…) at various scales of urban development, by including socio-economic and environmental data to determine the technologies that are best suited to the situation. (P. 11)

ADAPTING TO CLIMATE CHANGE
Development of methods for
- the evaluation and control of risks related to flooding (modelling at local level);
- evaluation of the resilience of water infrastructures to climate change. (P. 12-13)

WATER GOVERNANCE
Lyonnaise des Eaux's new governance model for the water resource which began with an open discussion entitled "New Ideas on Water" and led to the "Contract for Water Health" which renews the company's relations with its stakeholders. (P. 14)

NATURE IN THE CITY
New approaches to the reintegration of nature into the city (ecological continuity, ecosystem services) for the well-being of residents. (P. 15)


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SUEZ ENVIRONNEMENT IS A WORLD LEADER

dedicated exclusively to the water and waste businesses, and present on five continents.

In the field of water, SUEZ ENVIRONNEMENT's activities include:

- collection, treatment and distribution of drinking water;
- collection and purification of domestic and industrial water;
- biological and energy recovery of sludge produced through purification.

In the field of waste, SUEZ ENVIRONNEMENT provides:

- collection of all types of waste and urban cleaning;
- sorting and pre-treatment of waste;
- recycling, material, biological and energy recovery of recyclable waste and the disposal by incineration or landfill of residual waste.



Worldwide presence

suez environnement Degrémont

SAFEGE Ingénieurs Conseils

Water activity

Waste activity

Water and waste activities

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