our commitments and solutions for the climate

ready for
the resource revolution

SUEZ is developing its activities and innovating day after day, by delivering concrete solutions to its customers and partners that will help us rise to the new challenges of resource management.

SUEZ is a leading player in resource management and the circular economy that is active in numerous fields of activity, from water and water treatment, to the recycling and recovery of waste, and consulting. In the water sector, SUEZ protects resources and natural ecosystems, produces drinking water and contributes to the depollution of wastewater. Thanks to the efficient management of its networks and *smart* solutions, the Group optimises the use of water in order to preserve water resources in the long term. Finally, SUEZ treats water to make it drinkable, desalinates seawater and manages the treatment of sludge and the purification and recycling of wastewater.

SUEZ also delivers material, energy and biological solutions for the recycling, management and reuse of all types of waste. It pursues one main goal: to produce new resources.

As a key player in the territories where it provides services, SUEZ supports local authorities and industry in all of its activities, through innovative solutions and consulting actions. These technical, economic, environmental and social solutions all contribute to sustainable urban and regional development.

SUEZ promotes the circular economy in all of its business lines in order to encourage the emergence of a new climate responsible production model.

For SUEZ, the resource revolution is circular, concrete and collaborative. Circular, through the creation of a new production cycle, centred on the recycling and recovery of resources. Concrete, because it is based on tangible and innovative actions and solutions that secure resources. And collaborative, thanks to the contribution of everyone who, in their own way, is committed to improving the management and the protection of resources.

SOLUTIONS FOR THE CLIMATE

Fighting climate disruption is a top priority for SUEZ, which has set itself three objectives: to mitigate the causes of climate disruption, to adapt to its consequences and to build new alliances that develop climate responsible models.

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impacts and issues of climate change

A consensus now exists that the climate is changing due to human activity. In 2014, the Intergovernmental Panel on Climate Change published its fifth analysis report that exposes the current and future disruptions of our natural ecosystems.

THE IMPACTS:

- An increase in droughts, the frequency and intensity of rainy episodes.
- An increase in extreme weather events, such as heat waves, flooding, cyclones and forest fires.
- A risk of the extinction of numerous natural species.
- A drop in crop yields.
- Negative impacts on means of subsistence, especially for populations living in poverty.
- A 98 cm rise in sea level and a 4.8 °C rise in mean temperatures in the most pessimistic scenarios.

THE CONSEQUENCES ON WATER:

- **40%** of the world's population will live in water-stressed areas in 2035. *(source: UN)*
- **40%** reduction in water reserves, compared with current levels, by 2030. *(source: the World Bank)*

How can these changes be limited?

By keeping mean temperature increases to less than 2 °C by the end of the century.

How?

→ **By limiting total CO_2 emissions to about 2,900 gigatonnes between 1870 and 2100.** In 2014, two thirds of this total had already been emitted. So the remaining "carbon budget" is 1,000 gigatonnes of CO_2.

→ **By reducing greenhouse gas emissions by 70%** in 2050 compared with 2010.

(source: IPCC)

introduction by Brice Lalonde, UN Global Compact Special Advisor on Sustainable Development

"The objective of COP21 is to reduce greenhouse gas emissions. And to achieve this objective, all countries must engage, which is the reason why we have to find the mechanisms that are necessary to help developing countries, which are in the process of becoming large emitters of greenhouse gases, change their energy mix.

Reaching an agreement between 195 countries is not easy, especially since every country tends to defend its own interests. Existing negotiation practices prevent us from going beyond a state-oriented approach, and taking the biosphere, which transcends the notion of states, into consideration. But I am still optimistic, there will be an agreement, however insufficient it may be, which will send a clear signal to start transforming our models.

And the game has changed significantly in the past year. Now, every head of state knows that action is necessary. We have moved on from words to deeds, as the countries' proposals and their contributions to limiting greenhouse gas emissions testify. The need to do without fossil fuels, which have driven three centuries of growth, is gradually emerging, even if the question of "how" remains complex.

Numerous decisions have already been taken in this direction. Several sovereign funds have withdrawn fossil energies from their portfolios and President Obama has committed his country to the development of renewable energies. We can never overstate the case that the climate is first and foremost a matter of economics and technology. The goal is to change our model of production, no more and no less. And this is not possible without business and industry. Many of them have already come onboard by including the climate in their CSR policies and they are taking actions to reduce their greenhouse gas emissions, just like SUEZ with these new commitments, or they are proposing low-carbon solutions. The mobilisation of civil society, from local authorities to companies, is one of the features that characterises COP21 conference. And their pragmatic approach is precious. Local authorities are an effective relay of public opinion that is increasingly aware of climate issues. Businesses often have an international perspective, they test new solutions, and many of them have come out in favour of putting a credible price on carbon. They are prepared to go even further, provided that the framework is clear. This is why the agreement and its ability to mark out the way forward are so important.

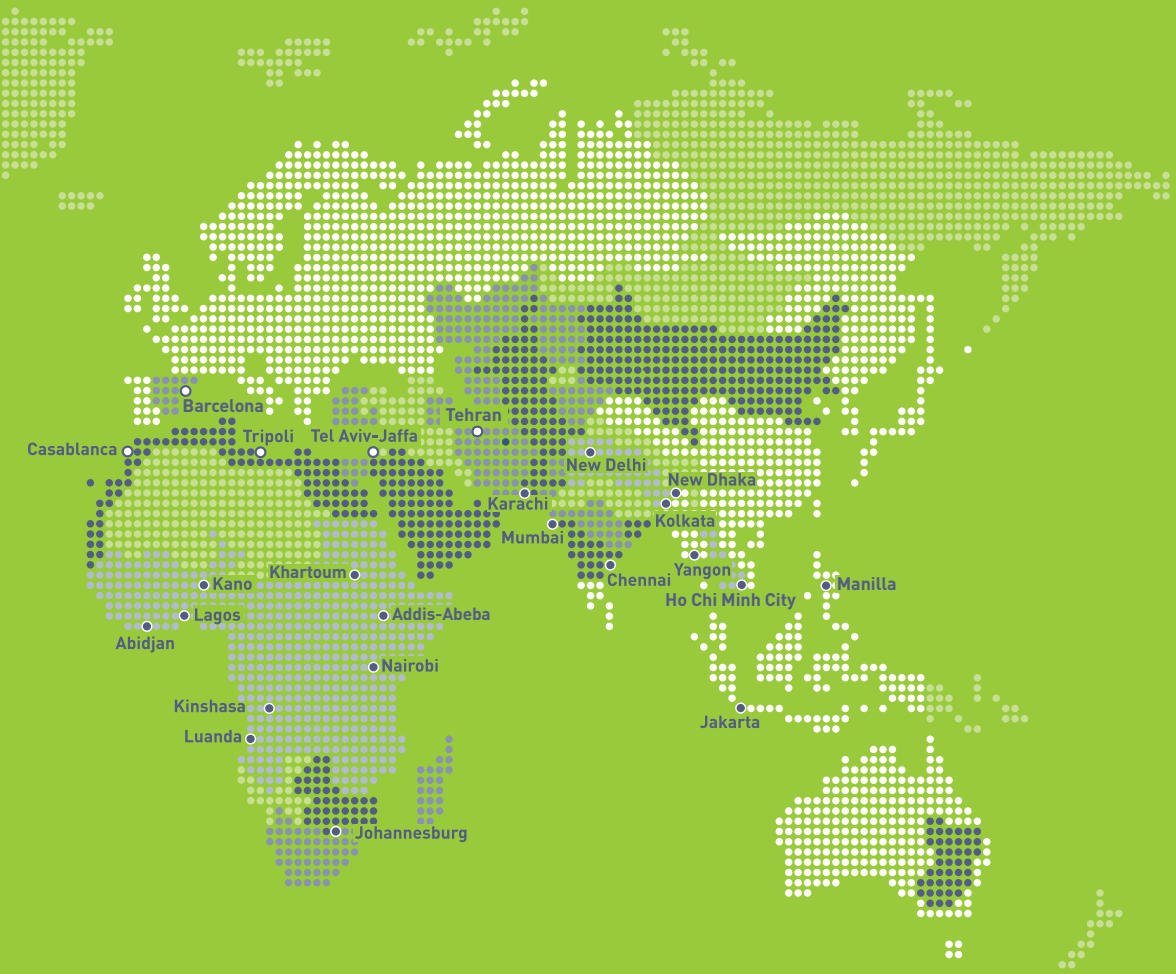
Finally, I would add that climate change is also a water related change. COP21 needs to talk more about the consequences of climate change for water, and to work on solutions, that will often consist of cross-sectoral partnerships.

All the ingredients are present to progress, if we really care about the future. It's not a matter of putting an end to the past, but of preparing the future and inventing a new mode of growth."

Brice Lalonde

the water deficit in 2020

- City where more than 20% of the population does not have access to water at home.
- City dependent on long-distance water imports.
- Chronic deficit: net water deficit. River water abstractions for agricultural, industrial and domestic use in excess of 75%.
- Durable deficit: a degraded water situation. River water abstractions for agricultural, industrial and domestic use in excess of 60%.
- Economic deficit: deficient access to water due to insufficient investment in the water and sanitation sectors. Sufficient water resources and abstractions below 25%.
- No deficit: sufficient renewable water resources to meet the demand. River water abstractions below 25%.
- Data not available.



Source: *Atlas des Futurs du Monde*, Virginie Raisson, published by Robert Laffont.

SUEZ scales up its climate commitments

On the occasion of COP21, Jean-Louis Chaussade, CEO of SUEZ, and Hélène Valade, Sustainable Development Vice-President, describe the Group's commitments in the face of the urgent climatic situation.

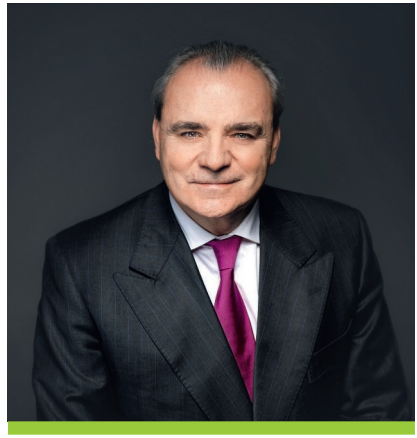
How is SUEZ approaching COP21?

Jean-Louis Chaussade: Irrespective of the gaps that exist today between the states' commitments to reduce greenhouse gas emissions and the demands of the "2 degrees" road map that will moderate the effects of climate disruption, there will be a before and an after COP21. We are now engaged in a process to take the urgency of the climatic situation into consideration on an international scale, in the nation states and in civil society that will not stop after COP21.

Most players are mobilised and, after conducting their diagnostics, are taking action. The process initiated at the UN Climate Summit, organised by the Secretary General of the United Nations in September 2014, that aims to involve civil society in the dialogue with the countries, has created a pragmatic and positive impetus. I am convinced that many of the concrete solutions chosen to implement the climate policies adopted by the countries will be driven by business. Companies have already measured the full scale of the reality of this subject. Together with their customers, they have implemented numerous concrete solutions to mitigate the effects of climate change by limiting greenhouse gas emissions, but also to adapt to its consequences. The Business Dialogue initiated by the French authorities, which has met

three times in 2015, in Paris, New York and Tokyo, is strengthening this process. We can only hope it will continue after COP21.

Hélène Valade: By inviting civil society to dialogue with the policy makers, the Secretary General of the United Nations wanted to make co-construction the new spearhead in the combat against climate change. This notion of co-construction lies at the very heart of SUEZ identity. For a long time already, we have considered that dialogue with our customers, local government and industry, and with all our stakeholders, citizens, NGOs and opinion leaders, is fundamental. In this same spirit, we are designing and sharing new low-carbon solutions. As an official partner of COP21, we are tasked with recovering the waste produced by the conference at Le Bourget. And our carbon-free solutions for sustainable cities will be on show at Solutions COP21 in the Grand Palais.



"We are convinced that it is urgently necessary to put a credible price on carbon."

Jean-Louis Chaussade
Chief Executive Officer of SUEZ

“The adoption of new climate responsible models inevitably demands collective actions.”

Hélène Valade
Sustainable Development Vice-President

SUEZ has made twelve new commitments to the climate. What are their priorities?

J-L. C.: Committing to robust targets, with dates and figures, makes our corporate responsibility and our contribution to this collective challenge all the more tangible. By their very nature, our activities are at the heart of the climate challenge and they demand a genuine resource revolution. Our goal is to promote the circular economy in the waste sector and, increasingly, in the water sector, in order to meet the need to save raw resources and to mitigate the causes of climate change by avoiding greenhouse gas emissions. We also aim to help our customers adapt to the proven consequences of climate change for the management of water. Water should be granted the same importance as energy in international negotiations on the climate. This is why, with the support of the Peruvian and French governments, we have launched a Business Alliance for water that aims to federate companies around the common ambition to preserve water. We are also continuing our efforts to reduce the carbon impacts of our own activities. The thinking behind these promises is quite clear: we must work with the whole of civil society to develop new economic and social models that create jobs and allow growth to be uncoupled from the consumption of resources.

H. V.: SUEZ commitment for climate is nothing new. We are scaling up this commitment today with concrete targets, with dates and figures, for 2020 and 2030, bringing our activities into line with the "2 degrees" road map and allowing us to precisely manage our climate strategy in France and worldwide. These targets are applied to each country where the Group is present and take account of the local energy mix. Just like all the commitments we made in our Sustainable Development Road Map, these twelve new commitments for climate will be assessed by an independent third party, and our progress towards reaching them will be disclosed each year.

The twelve commitments include the adoption of an internal carbon price in 2016. Is this an essential pre-condition for the implementation of the new and climate responsible models that you mention?

J-L. C.: We are convinced of the urgent need to put a credible price on carbon in order to direct investments towards carbon-free solutions, and a large majority of European companies share this conviction with us. We need a clear framework for our climate strategy. We want to see an ambitious agreement in Paris that should refer to the price of carbon. In 2016, the Group will incorporate an internal price of carbon in its investment decisions. It is essential to direct innovation policies and to spur the implementation of low-carbon solutions. But all this is only possible as part of a radically different global, political and economic vision. The climate challenge demands tax laws that penalise negative externalities and encourage the protection of resources.

H. V.: The adoption of new climate responsible economic models inevitably demands the creation of collective initiatives based on experimentation, the combination of expertise and education. Which is the reason why we have decided to adopt an internal price for carbon and to share our expertise in the creation of value through a carbon-free economy, and all the feedback on the economic models that we are implementing to promote it, with our customers, and the whole of civil society.

12 commitments to the climate

2015-2020-2030

2 degrees

SUEZ's new commitments to the climate are in line with the IPCC's "2 degrees" pathway and the European Union's targets to reduce GHG emissions by 2020.

For SUEZ, fighting against climate disruption is an absolute priority.
In its Sustainable Development Road Maps for 2008-2012, and then 2012-2016, the Group already set its own targets to cut greenhouse gas emissions and preserve water resources.
Today, SUEZ is making 12 new commitments to the climate.
These commitments aim to:

- **continue the efforts to reduce the Group's carbon footprint;**
- **promote the circular economy model that structurally reduces greenhouse gas emissions and protects natural resources;**
- **adapt to the consequences of global warming on water.**

Pillar 1

mitigate the causes of climate change

SUEZ new commitments for 2020 and 2030 cover its worldwide water and waste activities and strengthen the climate and energy commitments that were already included in the Group's road maps (2008-2012 and 2012-2016) for its activities in Europe.

commitment no. 1

reduce GHG emissions by 30% on a global perimeter by 2030

- All of the landfill facilities operated by the Group will be equipped with systems to collect and recover biogas.
- Increased energy efficiency of the Group's activities.
- Optimisation of waste collection logistics and strengthening of the "clean vehicles" policy.

commitment no. 2

contribute to avoiding 60 million tonnes of GHG emissions by 2020 for our customers

- 8.9 million tonnes of greenhouse gas emissions avoided in 2014, thanks to waste recovery.
- Strengthened circular economy solutions: materials recovery and waste to energy recovery: electricity, heat and alternative fuels.

commitment no. 3

multiply by 2 the volume of plastics recycled by 2020

- Development of partnerships with plastic-intensive industries with a view to co-building "made-to-measure" solutions producing high-quality recycled plastic.

commitment no. 4

increase by 10% the production of renewable energy by 2020

- Production of 5.1 TWh of electricity and heat from waste and wastewater in 2014.
- Increase of the capacity to produce biogas from the treatment of waste and wastewater by 30% to 50% by 2020.

Pillar 2

adapt to the consequences of climate change on water

By 2035, 40% of the world's population will live in regions suffering from water stress. This is one of the consequences of climate change. But water rhymes with development, food, agriculture and health. SUEZ believes that water should be dealt with on an equal footing with energy, which is the reason why SUEZ is also making commitments to water.

commitment no. 5

systematically offer to our customers plans of resilience to the effects of climate change

- Deployment of studies to assess climate risks and operational solutions to prevent the risks incurred by extreme climatic events (drought, flooding).

commitment no. 6

promote the different usages of water by multiplying by 3 our alternative water production capacity

- 800 million m^3 of treated wastewater reused in 2014.
- Multiplication of the uses of water before it is released into the natural ecosystem for irrigation or to replenish the water tables. Seawater desalination solutions.

commitment no. 7

save the equivalent of the consumption of a city of 2 million inhabitants by 2020

- Development of smart technologies applied to the control of consumption and improvement of the performance of drinking water distribution networks.

transparency and sharing experiences, two principles that guide our commitments initiative

- Every year, the state of progress of our 12 commitments will be included in our Sustainable Development Road Map, and assessed by an independent third party. The results of this assessment will be made public.
- SUEZ will make all the learnings from its initiative accessible to its stakeholders as part of an open source approach, in which everyone can consult and benefit from the feedback. Sharing best practices will help forge new climatically responsible alliances.

Pillar 3

act for the implementation of climate reponsible models

If the reduction of GHG emissions and the preservation of resources are to last, then they must be part of new economic and social models, which uncouple growth from the consumption of resources.
The design of these new models demands collective action based on open attitudes, experiments, crossing fertilization of expertise and education.

commitment no. 8

set up an internal carbon price in 2016

- Incorporation of the price of carbon in investment decisions.
- Offer the Group's expertise in the impact of existing and future carbon pricing systems on business models and on the value creation thanks to low-carbon solutions.

commitment no. 9

mobilize ourselves to reinforce the price of carbon

- Tests of new climate responsible models.
- Support for the World Bank's statement "Put a price on carbon".

commitment no. 10

commit ourselves in favor of circular economy

- Share feedback on the establishment of local circular economy loops with Group customers and with all economic players and civil society.

commitment no. 11

contribute to awareness raising on climate solutions

- Continue the Solutions COP21 initiative by taking actions to raise the general public's awareness of climate solutions for a sustainable city.

commitment no. 12

establish a Committee of Experts on the Climate Transition attached to SUEZ General Management

- Consideration of the recommendations made by world climate experts, scientists and economists in the Group's strategy and sustainable development policy.

our solutions to mitigate the causes of climate change

The activities of SUEZ water and waste business lines consume energy, but they are also sources of production of renewable energy and secondary raw materials that are still not sufficiently exploited by far. In keeping with the duty to set a good example that the Group has set itself, SUEZ continuously innovates to mitigate its impacts on the climate and to promote solutions that develop the local circular economy.

THE GROUP'S GREENHOUSE GAS EMISSIONS RESULTS

In 2014, the circular economy solutions proposed by SUEZ avoided more emissions of greenhouse gases by its customers than the volume of emissions from the sites that the Group operates.

Emissions produced by SUEZ 7,884,000 tonnes CO_2 equivalent		**Avoided emissions by SUEZ's customers** 8,887,000 tonnes CO_2 equivalent	
By activity (in tonnes CO_2 equivalent)		**By activity (in tonnes CO_2 equivalent)**	
Waste	**5,962,000**	Waste	**8,737,000**
Water	**1,922,000**	Water	**150,000**
By source (in tonnes CO_2 equivalent)		**By source (in tonnes CO_2 equivalent)**	
Incineration	**33%**	Recycling / Material recovery	**63.1%**
Landfill	**29.2%**	Solid recovered fuels	**17.8%**
Electricity	**22.8%**	Energy production from incinerated waste	**13.1%**
Transportation	**11.9%**	Recovery of biogas from waste	**4.3%**
Other	**3.1%**	Recovery of biogas from wastewater	**1.7%**

In 2014, the Group's emissions were broken down as follows:

→ **in the Waste business line:** 5,962,000 tCO_2 e, or 76% of the Group's total emissions. Most of these emissions are direct, consisting of methane produced by waste in landfills and greenhouse gases from incineration.

→ **in the Water and Wastewater business line:** 1,922,000 tCO_2 e, or 24% of the Group's total emissions. Most of these emissions are indirect, produced essentially by the consumption of electricity in the water treatment processes.

SUEZ reduces the greenhouse gas emissions produced by its customers by promoting recovery as materials and energy.

→ **Material recovery through:**
- recovery, sorting and recycling,
- composting,
- recovery of residual waste from the incineration of non-hazardous waste,
- production of solid recovered fuels.

→ **Energy recovery through:**
- incineration of municipal or industrial waste,
- combustion of biogas recovered in landfill centres,
- valorisation of biogas produced from wastewater as energy.

The above figures on the emissions produced by SUEZ and avoided by its customers were verified by *Ernst & Young* in July 2015.

reduce GHG emissions by 30% on a global perimeter by 2030 **(commitment 1)**

→ 82% of the waste on landfill sites managed by SUEZ is recovered by capturing and recovering biogas.

COLLECTION, TREATMENT AND RECOVERY OF BIOGAS EMISSIONS FROM WASTE LANDFILL FACILITIES

5% of worldwide greenhouse gas emissions come from the management of solid municipal waste. By capturing and reusing the methane produced on landfill sites, the volume of emissions from these sites is reduced and biogas can be produced, a source of green energy used in the form of biofuel or electricity.

With numerous references in the developing countries in the Mediterranean basin (Morocco, Lebanon, Tunisia), and thanks to its integrated SMART CELLS™ offer that combines technical solutions that are well adapted to their different contexts and optimally reuse waste sources, SUEZ has become a leader in waste recovery in developing countries.

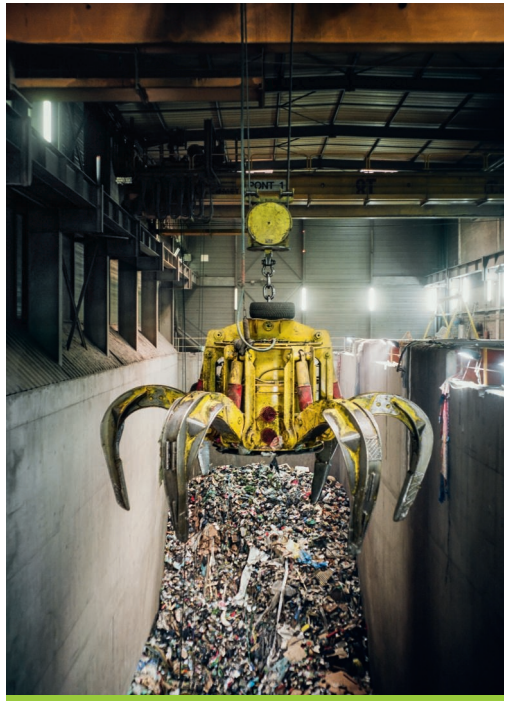
OPTIMISING THE ENERGY POTENTIAL OF WASTE INCINERATORS

In Roeselare, Belgium, SUEZ collects the waste produced by the 270,000 inhabitants of 15 surrounding localities. Due to the high tax on waste, most of it is recycled or incinerated. The MIROM incinerator treats 63,000 tonnes of waste every year.

In 1984, the decision was taken to use the energy produced by the incinerator to heat the town. The site supplied 21 customers, representing a demand for heat of between 27,000 and 35,000 MWh. Thanks to the "Organic Rankine Cycle" (ORC) system, in 2005 the annual capacity to produce heat was scaled up to 130,000 MWh per year. The ORC is a thermodynamic machine that uses the Rankine cycle and a thermodynamic fluid from organic chemistry. The system is comparable with the conventional steam cycle, except that water is replaced by an organic fluid. Moreover, thanks to a condensation exchanger, the lost heat can be used to warm greenhouses.

A project to build 200,000 m^2 of greenhouses is currently being studied. This type of low-temperature electricity production unit, which can be adjusted to meet the need for thermal energy, is capable of supplying electricity to its customers all year round, even in winter.

Finally, the ORC system has contributed to the improvement of the energy efficiency of the incinerator, thereby reducing greenhouse gas emissions produced by the facility.



→ **Ultimately, 200,000 m^2 of greenhouses will be supplied with green steam.**

SOLUTIONS TO **REDUCE CARBON EMISSIONS FROM FLEET VEHICLES**

The Group is committed to reducing carbon emissions from its vehicle fleets all over the world.
In Australia, more than 400 waste collection trucks run on B20 diesel, a biodiesel containing 20% of soy. For every litre consumed, 540 g of CO_2 e are saved. This fuel also reduces the smell of exhaust fumes and the emissions of atmospheric pollutants in comparison with conventional fossil fuels.
In the United States, a programme was launched to reduce the time vehicles spend idling. The programme has resulted in savings of more than 28,000 litres of fuel per year.
Finally, in Macao, SUEZ has introduced hybrid vehicles as part of its waste collection activities. This initiative will soon be replicated in Hong Kong.

→ 28,000 litres of fuel saved per year.

USING WIND ENERGY **TO OFFSET THE GREENHOUSE GAS EMISSIONS PRODUCED BY TRANSPORTING WASTEWATER**

In 2013, United Water installed a wind turbine, measuring almost 80 metres in height and with a capacity of 1.5 MW, in Bayonne (New Jersey) in order to partly compensate for the energy requirements of the wastewater collection networks. It is the first wind turbine of this size in the New York conurbation. The renewable electricity produced by the wind turbine is the equivalent of the energy required to pump the 150,000 or more cubic metres of wastewater per day from Bayonne to the purification plant.

→ More than 900 tCO_2e avoided per year.

contribute to avoiding 60 million tonnes of GHG emissions by 2020 for our customers **(commitment 2)**

→45,000 tCO_2e.avoided per year.

THE HIGH 5 GLASS SORTING AND RECYCLING CENTRE

The High 5 glass sorting and recovery centre in the port of Antwerp, Belgium is a concentrate of advanced optical sorting technology for the recycling of glass. The plant, set up as part of a partnership with Sibelco, the world's leading supplier of minerals to the glass industry, treats 250,000 tonnes of glass per year. The flows are separated in order to produce four different qualities of glass that meet the market's needs.

Furthermore, the cullet produced by the glass recycling process can be used to conserve natural mineral resources, save energy and limit the greenhouse gases emitted by the glass industry. This sorting centre is an illustration of two of the main goals of the circular economy: the production of secondary raw materials and the mitigation of global warming.

PRODUCING HEAT FROM WASTEWATER

On average, the temperature of the wastewater flowing through sanitation networks is 11°C to 20°C. This represents a significant source of renewable energy in the heart of our cities.
Degrés Bleus®, a genuine model for heating in urban environments, uses an elaborate process to recover the heat from wastewater and inject it into the heating and cooling circuits of all types of buildings.
This technological innovation durably reduces energy costs, recovers local resources and increases the energy self-sufficiency of the locality.
Finally, Degrés Bleus® cuts greenhouse gas emissions by 50 to 70% in comparison with traditional heating solutions and reduces the consumption of non-renewable energy by 30 to 60%.

→ 100% of cold requirements and 22% of needs for heat of the Bordeaux urban community's headquarters are covered by Degrés Bleus®.

METHANISATION OF WASTE FOR THE REGIONS

The Montpellier conurbation authorities have taken another step forward in their energy transition with the Amétyst household waste and biowaste methanisation unit, which has been operated by SUEZ since the end of 2014.
This biowaste methanisation unit produces electricity and heat at the same time, thanks to the cogeneration of biogas from waste. The biogas produced from the biomass is used to produce 16,000 MWh of electricity and 7,000 MWh of heat per year.
The compost produced by the methanisation process is recovered in agriculture. Every year, the unit produces about 33,000 tonnes of compost.
Finally, materials with a high calorific value, like plastics, are used as solid recovered fuels. They are then used by industrial customers, and cement works in particular, to replace traditional fossil fuels.
More than one half of the city's waste is recovered in the form of new resources, avoiding the emission of almost 1,800 tonnes tCO_2e.

→ *"Amétyst demonstrates our ambition to place the circular economy at the heart of our strategy"*, Christophe Cros, Deputy Managing Director, SUEZ.

PERFORM'EE

Industry produces about 20% of greenhouse gas emissions worldwide. Thanks to the levers that are now available to reduce their emissions, industrial companies have become key players in the worldwide effort to mitigate climate change.
SUEZ proposes specific support to its industrial customers to help them improve their economic and environmental performance.
The PERFORM'EE offer combines counselling in environmental strategy with the operational deployment of solutions to improve global performance (operational, economic and environmental).
Through improved management of resources, and of energy resources in particular, by deploying properly adapted solutions, PERFORM'EE helps reduce emissions from manufacturing sites and contributes to their resilience to climate change.

→ A plan for progress in three stages:
- Identification of synergies between water, waste, energy and the environment,
- Formal definition of an operational plan for progress,
- Deployment of the chosen actions on the sites.

OPTIMISING THE ENERGY COSTS OF DRINKING WATER SERVICES

The energy consumption of drinking water production and distribution systems is a major concern for local authorities. This energy represents 40% of all their operating costs. SUEZ subsidiary DERCETO has developed a solution to help local authorities optimise the performance of their drinking water networks.
The solution proposed by DERCETO, which is connected to the systems that supervise and control the drinking water production facilities, accesses the electricity pricing mechanisms in real time and updates the forecasts of demand for drinking water. It then uses these forecasts to develop an optimised pumping strategy that boosts efficiency.

→ The DERCETO offer improves the energy efficiency and the long-term management of energy by local authorities.

multiply by 2 the volume of plastics recycled by 2020 (commitment 3)

→ *"By developing the recycling of plastics, we are consolidating our position as a key player in the achievement of the European target of 50% of recycled household waste by 2020,"* declares Thierry Mallet, Director of Innovation and Industrial Performance at SUEZ.

PLASTIC RECYCLING RESEARCH LABORATORY

The production of plastic in the European Union has grown 150-fold in 50 years. Today, hardly one quarter of the 50 million tonnes produced each year is recycled.

To meet its target, to double the capacity of its plastics recycling activity by 2020, in December 2014, SUEZ inaugurated the PLAST'lab® laboratory, which will design different qualities of recycled plastics according to industry's needs.

The expected benefits of this new plastic business line include securing the production of recycled plastics in the Group and reducing the amount of energy consumed by manufacturers that use this type of material by 80 to 90%.

RÉCO®: REWARDING ECOLOGICAL GESTURES

SUEZ places citizens at the heart of its circular economy strategy, and innovates to intensify the recovery of plastic bottles and to meet the needs of industry more closely. Today, only one in four plastic bottles is recovered in France. Consumers are being incited to deposit their plastic bottles in the Réco® kiosks designed and installed by SUEZ in supermarket car parks, in return for a voucher. These bottles are then recovered in collaboration with the PLAST'lab® laboratory, which analyses and characterises the recovered plastics, then formulates new ranges of plastics that meet industry's needs, on the basis of the recovered products.

→ More than 10 million bottles recycled in the Réco® kiosks so far, or the equivalent of 790 tCO_2e avoided.

RECYCLING 70% OF PLASTICS IN THE NETHERLANDS

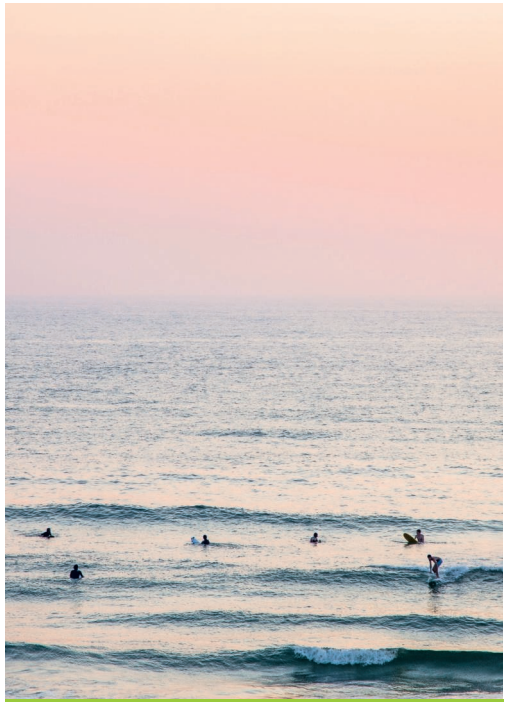
The joint venture set up by the Dutch company Nedvan and SUEZ is helping the Netherlands process its plastics, collected from households, in significantly higher volumes since 2008.
A total of almost 70% of plastic in the Netherlands, or some 75,000 tonnes per year, are sorted by SUEZ. And 90,000 tCO_2 e will be avoided in 2015.
The sorting centre in Rotterdam alone can sort about 30,000 tonnes per year.

→ Using recovered plastics cuts energy consumption by 80 to 90% compared with the production of virgin plastic.

THE ECOSEASTEM INITIATIVE: ANTICIPATING MARINE POLLUTION

In 2014, SUEZ launched the ECOSEASTEM initiative to maintain the quality of the oceans, a subject that has increasingly become a cause for concern, since the expeditions that revealed the "7th continent" made of plastic in the oceans. The initiative is based on two developments:

- To limit the discharge of macro-waste from overflowing rainwater networks, SUEZ has developed the Cyclonesep® hydrodynamic separator in partnership with HYDRO CONCEPT.
- To limit pollution by micro-fibres not eliminated by conventional wastewater treatment processes, SUEZ has launched the first research programme into this subject, in partnership with the Métropole Nice Côte d'Azur authorities, the MED Expedition NGO and the Oceanographic Laboratory in Villefranche-sur-Mer.



→ ECOSEASTEM contributes to achieving the Convention on Biological Diversity's goal of protecting 10% of the oceans by 2020.

increase by 10% the production of renewable energy by 2020 (commitment 4)

PRODUCING GREEN STEAM FOR INDUSTRY

With the renewal for 16 years of the industrial partnership between SUEZ and the localities belonging to the SEVEDE, the ECOSTU'AIR energy recovery unit in Saint-Jean-de-Folleville, near Le Havre, France, has been given a new lease of life. The ECOSTU'AIR will benefit from new energy-related developments that will speed up the energy transition in the region. SUEZ has been producing steam to supply renewable energy to a neighbouring industrial site since 2015. Ultimately, the energy recovery potential of the ECOSTU'AIR unit will increase from 30% in 2015 to more than 80%. Once the process used to treat the fumes has been modernised, it will consume 90% less of the needed natural gas.

→ *"The production and the sale of green steam to an industrial company is an illustration of the circular economy,"* **points out Florent Saint Martin, President of the SEVEDE.**

REINJECTING BIOMETHANE FROM TREATMENT PLANTS

A promising opportunity for the energy recovery of wastewater has emerged following the regulatory authorisation, in France, to inject the biogas produced in wastewater treatment plants into the main natural gas distribution networks.
The Biovalsan project was launched by Strasbourg Eurométropole as a result of this authorisation. By mid-2015, the biogas produced by the city's treatment plant will be transformed into biomethane, purified and then reinjected into the natural gas distribution network, supplying 5,000 households.
In this way, the city's own wastewater will be used as an energy resource.
Thanks to the annual production of more than 1.6 million m^3 of biogas, annual emissions of 6,000 tCO_2e will be avoided.

→ Strasbourg Eurométropole, the first city authority in France to inject biomethane from a wastewater treatment plant into the natural gas network.

GREEN AND LOCAL ENERGY

In November 2014, SUEZ inaugurated the ROBIN green steam production plant, under the terms of a contract with the OSIRIS economic interest grouping, which supplies energy to the 16 industrial companies on the platform, and whose energy requirements are equivalent to those of a city with 150,000 inhabitants. This aims to support the energy transition of the Roussillon industrial platform, which is one of the biggest chemical platforms in France, representing 1,450 direct jobs and about 2,500 indirect jobs.
ROBIN is the first plant to recover both wood from wood industry waste (wood pallets), refuse from paper recycling and other wood waste (treated and impregnated wood) that was previously not reused. Thanks to the flexibility of the possible input, ROBIN offers security to the industrial manufacturers that are facing different fuel supply chains, and can accept waste that was previously unused in high-performance and durable recovery processes.

→ ROBIN is one of the biomass recovery facilities in France that makes the highest contribution to the reduction of greenhouse gas emissions.

PRODUCTION OF SOLID RECOVERED FUELS

Nording Recycling is the new recycling and resource management centre in the port of Tilbury, on the banks of the Thames in the United Kingdom. The centre is the result of a partnership between SUEZ and Forth Ports Limited, one of the largest port operators in the UK.
Under the terms of this agreement, SUEZ will operate the new waste treatment plant that produces solid recovered fuels and alternative fuels.
The new plant will create jobs and will prevent a significant quantity of waste from being sent to landfill facilities.

→ *"The Nordic Recycling plant will make a decisive contribution to the appeal and the development of the port of Tilbury,"* claims Charles Hammond, Group Chief Executive of Forth Ports Limited.

our solutions to adapt to the consequences of climate change

As the climate changes, a number of regions are becoming particularly vulnerable to floods and drought. The tendency is being made worse by the increased concentration of populations in urban areas. SUEZ has called on its own solutions to develop tools and methods that help these regions adapt to these phenomena more effectively. Strengthening the resilience of cities is already a major challenge for SUEZ.

systematically offer
to our customers
**plans of resilience
to the effects
of climate change**
(commitment 5)

→ In Bordeaux, the deployment of INFLUX™ has saved €250 million of investments in storage for the rainwater network.

INFLUX™: A FLOOD PREVENTION TOOL

Facing the increase in extreme weather events, SUEZ has developed INFLUX™, a smart tool for the dynamic management of the rainwater network that can be used to manage the risk of urban floods. INFLUX™ provides a global, real-time vision of the complete wastewater system, based on meteorological and hydrological data. INFLUX™ anticipates and controls the rainwater flows that enter the network in periods of heavy rain in order to prevent overflows and the discharge of wastewater into the natural ecosystem, thereby protecting the population and the environment, especially along the coastline and in bathing waters.
This innovative technology has already been deployed in around ten conurbations in France and Europe, and in particular in Bordeaux, France, where it has prevented 120 flood events, with 15 to 20 alerts raised, for three violent storms per year on average.

SUEZ CONSULTING IS HELPING THE CITY OF PARIS DRAW UP ITS **STRATEGY TO ADAPT TO CLIMATE CHANGE**

SUEZ Consulting advises both local authorities and businesses on the definition and the implementation of climate and energy strategies that are adapted to their needs.
At the start of 2015, when the city of Paris revised its Climate Plan, SUEZ contributed to the definition of a strategy to adapt to climate change and the increased scarcity of resources by studying and diagnosing the strengths and the vulnerabilities of the region, with a clear focus on:

- Heat waves - Protect the health of Parisians and keep the networks in working order.
- Water resources - Anticipate vulnerability.
- Floods - Protect Parisians and the city's activities.
- Energy resources - Manage the energy transition in Paris.
- Biodiversity - Preserve biodiversity to maintain quality of life in Paris.

→ The target of the city of Paris: to reduce greenhouse gas emissions by 75% between 2004 and 2050.

SUEZ, **CONTRIBUTING TO SUSTAINABLE CITIES**

Since 2009, more than one out of two people live in cities. Just like other ecosystems, cities are becoming increasingly complex, and city dwellers are becoming more demanding by the day. As a long-established player and innovator in the main water and waste cycles, SUEZ is providing all its know-how and innovations to city authorities, in order to build high-performance, responsible, ecological and sustainable cities together.
This is why its subsidiary LYDEC and Grand Casablanca jointly launched the "city of the future" project, whose main goals are:

- to deliver a service offer including a vision and expertise that favour sustainable and integrated urban development in its field of activity,
- to support the company's stakeholders through a partnership-oriented approach.

→ In Morocco, SUEZ is the only public service contractor to have proposed a sustainable city initiative.

HELPING FRENCH POLYNESIA
IN ITS EFFORTS TO ADAPT TO THE CONSEQUENCES OF CLIMATE CHANGE

In 2012, SUEZ helped French Polynesia draw up its Strategic Climate Plan by taking part in technical assistance missions, discussions and workshops with all the parties affected by the issues related to climate change. These issues include the rise in sea level and the changes to the physical climatic parameters that affect agricultural production, human health and fish stocks. Climate change is impacting most of the economic activities in French Polynesia, which rely significantly on natural resources, in both the primary sectors and tourism. The physical impacts on the region (retreat of the coastline, salination of duckweed, etc.) will have economic consequences that are, at least, significant. Land prices will increase and the infrastructures near the coast will have to be adapted. Climate change questions the economic, social and cultural dimensions of the existing development model of French Polynesia.

→ The strategic climate plan proposes a global strategy based on 138 guidelines, included in short- and medium-term programmes of action: raising awareness, research and development, cooperation, economic incentives and regulation.

WATERCHANGE: ANTICIPATING THE CONSEQUENCES OF CLIMATE CHANGE FOR WATER RESOURCES

The WATERCHANGE research project, coordinated by CETAQUA, SUEZ Water Europe research laboratory in Spain, aims to assess the quantitative and qualitative impacts of climate change on water resources, in combination with changes in soil use and changes in the demand for water. Its ultimate objective is to propose global adaptive measures that will secure resources in the long term, in the face of future changes. The project benefits from financial support from the European Union, as part of the LIFE+ programme.

As part of this project, a control tool has been developed that is currently being tested in the Llobregat basin. This coastal river in Catalonia contributes to the water supply of the city of Barcelona, and is very vulnerable to episodes of drought and urban, agricultural and industrial pollution.

→ Anticipating the consequences of climate change along the coastline of the Mediterranean basin.

promote the different usages of water by **multiplying by 3 our alternative water production capacity (commitment 6)**

REUSE OF WASTEWATER FOR MULTIPLE USAGES

Repeated droughts and strong demographic pressure mean that the state of California is now short of between 5,000 million and 15,000 million cubic metres of water per year. This is the reason why SUEZ recycles wastewater "to order" in California. The Edward C. Little Recycling Facility, which treats and recycles wastewater in the county of West Basin, produces 240,000 m^3 of water per day, representing the consumption of more than one million inhabitants. What is so special about this facility, is that it produces several qualities of water that are adapted to the different ways local authorities, farmers and industry in the region around Los Angeles use wastewater.
By 2020, the facility, which also limits the discharge of wastewater into Santa Monica Bay, will include a desalination unit that will meet 10% of the region's water needs.

→ *"Thanks to this approach to adapting to climate change, we succeeded in reducing our dependency on imported water from 80 to 66% between 1990 and 2010. And there is more to come,"* points out Rich Nagel, Managing Director of the West Basin Municipal Water District.

REUSING WASTEWATER

In collaboration with Beijing Drainage Group, SUEZ is planning to start up the biggest underground wastewater recycling station in China in mid-2016. This plant will improve the quality of water south west of Beijing, thereby helping protect the environment. With a capacity of 600,000 m^3/day as soon as it comes on stream next year, the Huai Fang station will treat the wastewater produced by more than three million people.

The plant will be equipped with ultrafiltration membrane bioreactor technology and ozonation equipment to treat the wastewater. The wastewater treated by the Huai Fang plant will be re-used for city development projects or discharged into waterways and wetlands.

→ This project contributes to the achievement of China's 12th five-year plan targets.

ENERGY-EFFICIENT DESALINATION

In 2014, Masdar appointed SUEZ to build and operate a high-technology and energy-efficient pilot desalination unit in Abu Dhabi, in the United Arab Emirates.
The energy performance of this facility will be superior to the most sophisticated desalination plants in service today. The new plant can be powered by 100% renewable energy sources, and its environmental impact will be minimal.
This innovative, reliable and robust facility will be adapted to the quality of the seawater and the environmental conditions in the United Arab Emirates.
After the pilot, this technology will be used on an industrial scale in other desalination plants.

→ Objective: power a seawater desalination plant with 100% renewable energies.

SEAWATER DESALINATION IN MELBOURNE

At the end of 2012, the largest inverted osmosis seawater desalination plant in the southern hemisphere came on stream.
The result of the biggest ever public-private partnership in the water industry in the world, the plant will be operated by SUEZ, as part of the AquaSure consortium, for 30 years.
Located 135 km south-east of Melbourne, the Wonthaggi plant can produce 450,000 m^3 of water per day. The plant offers a source of drinking water that does not depend on rainfall to the 4.1 million inhabitants of greater Melbourne.

→ Located in a coastal park measuring more than 26 hectares, the Wonthaggi plant contributes to the protection of resources and biodiversity.

FIGHTING AGAINST SALT WATER INTRUSION

Hyères-les-Palmiers, France is having to cope with population growth, the increasingly clear effects of climate change and the intrusion of seawater into the water table.

In 2013, the town called on SUEZ to manage the drinking water production and distribution service on the council's behalf. With its Aquarenova programme, SUEZ promised that it would reach a quantified result by 2023, when the contract expires, on twelve operational and environmental performance indicators, covering the climate and energy, the protection of resources, the quality of the ecosystems and the performance of the public service:

- a 30% increase in the city's water self-sufficiency, by restoring and preserving, by artificial replenishment, the two water tables that are essential to the town's water supplies.
- an eight-point improvement in the efficiency of the network, in particular through remote readings.
- a 5% increase in energy efficiency (kWh/m^3 of water produced), thanks to a climate/energy action plan applied to the service (optimisation of pumping, transportation, etc.).

A special steering committee dedicated to the contract, made up of local elected representatives, the council's technical departments and representatives from SUEZ, will monitor these indicators and all of the commitments made by SUEZ, in application of the principles of the Governance Charter signed between the Hyères-les-Palmiers city authorities and SUEZ.

→ Aquarenova is an integrated programme designed to protect the water resources and the long-term water assets of the city of Hyères-les-Palmiers.

save the equivalent of the consumption of a city of 2 million inhabitants by 2020 (commitment 7)

LONG-RANGE **REMOTE METERINGS**

Malta faces a severe deficit of resources. A problem worsened by climate change and the arrival of one million tourists in the holiday season.
In the mid-1980s, the Maltese authorities measured the full scale of the problem and launched an ambitious policy for a well-reasoned management of water and energy resources.
A comprehensive programme was started to remotely read all the water and electricity meters on the island. Remote meterings offer a number of benefits: water and energy consumption can be monitored continuously and flexible price plans can be applied to reward the most economical users. Also, water meter readings can be collected remotely, without any need for agents to travel to the user's place of residence.

In 2008, the Water Services Corporation (WSC), which is tasked with producing and distributing drinking water on the island, chose the 169 MHz long-range remote metering solution on offer from SUEZ.
This solution, which already equips 1.2 million meters in Europe, boasts excellent levels of performance. The data is reliable and guarantee that the bills are accurately based on actual consumption, rather than estimates.

→ **250,000 smart meters have been installed to allow the 400,000 inhabitants of Malta to manage their water consumption.**

REGCONTROL®: OPTIMISING AGRICULTURAL IRRIGATION WITH A PERSONALISED AND AUTOMATIC SERVICE

The needs of agriculture account for 70% of the water consumed worldwide. So it is crucially important to introduce a reasonable management of water requirements in this sector. SUEZ has developed a smart irrigation technology, called RegControl®. This system automatically feeds crops with the water and the fertilisers they need at the right time and in the right quantity. RegControl® helps farmers choose the best strategy, according to the type of crops and the weather data.
Several farms in Spain have already successfully adopted this tool. Potentially, it can be installed in any region that suffers from water shortages and/or chronic drought.

→ Today, agriculture accounts for 70% of the water consumed worldwide.

IDROLOC®: AN ECOLOGICAL TOOL TO REDUCE WATER LOSSES

SUEZ uses IDROLOC® to detect leaks in the drinking water distribution networks in an effort to continuously improve the quality and the performance of the service delivered to users. Developed by Aqualogy and R+I Alliance, this innovation significantly reduces water losses with a simple and ecological process:

- A tracer gas (helium or hydrogen) that does not affect the quality of the water or the health of the users is injected into the pipes.
- This gas is then dissolved in the water and escapes though any leaks in the pipes.
- Holes drilled at regular intervals in the pavement above the pipes allow the gas to rise to the surface, where it can easily be detected in order to locate the leak.

→ In some very varied urban situations (Oran, Jeddah, Cancún, Barcelona, Mumbai, etc.), IDROLOC® has so far detected almost 1,500 leaks on more than 1,300 km of networks.

ICE PIGGING, OR HOW TO CONSERVE WATER QUALITY BY CLEANING PIPES WITH ICE

ICE PIGGING is a process that consists in cleaning crude and drinking water networks by injecting pressurised ice.
An *ice pig* is a semi-solid material that can be pumped like a liquid, but that behaves like a solid, once in the pipe. The ice is propelled by the pressure in the upstream network. The piece of ice collects sediments, which are then retained in the body of the ice as it moves along the pipe. The ice flow is then pumped out at the end of the section of piping. This process improves the quality of the water delivered to users, reduces the cost of rehabilitating pipes, makes the water networks last longer and reduces energy consumption.

→ **ICE PIGGING can clean up to 3,700 m of pipelines in a single pass.**

AQUADVANCED™: A TOOL DESIGNED TO MANAGE DRINKING WATER DISTRIBUTION NETWORKS

Worldwide, more than 35% of drinking water disappears before it even reaches the users' taps. On a global scale, estimates claim that more than 49 billion m^3 of water are lost every year due to ageing pipes.SUEZ has reacted to this problem by developing solutions such as Aquadvanced™, which allows city authorities to improve the performance and the lifespan of their drinking water networks. The end users also benefit from an improvement in the quality and the pressure of the water at the tap. Aquadvanced™ monitors the hydraulic behaviour of a network in real time using sensors installed in the network that measure flow, pressure or flow rate in order to identify and anticipate any problems, such as leaks, and to control the quality of the water or solve problems with pressure.

Aquadvanced™ also centralises data from geographical information systems, remote metering data, data from the operations management system and information on customer relations. By centralising all this data, Aquadvanced™ can produce cartographic summaries and management scenario simulations, and can also draw up proposals to optimise energy consumption.

Placed under close surveillance, the network can be monitored permanently in order to optimise its management. This solution has already been deployed in several towns in France and territories that are vulnerable to periods of drought, such as Barcelona and Casablanca.

→ Aquadvanced™ guarantees both the optimised operating costs and the long-term conservation of the assets that make up the drinking water supply network.

our solutions for the implementation of climate responsible models

If the reduction of GHG emissions and the preservation of resources are to last, then they must be part of new economic and social models, which uncouple growth from the consumption of resources. The design of these new models demands collective action based on open attitudes, experiments, crossing fertilization of expertise and education.

promoting a collaborative approach

We are convinced that our action must be part of our exchanges with our stakeholders, which is why we are involved in several initiatives.

SUEZ is:

- An official partner of COP21, as the designer of the master plan for the flows of waste from the Le Bourget site and responsible for that recovery, with the goal of recovering 100% of the waste.

- A contributor to the French and Peruvian governments' Lima-Paris Action Agenda, which is tasked with encouraging industrial manufacturers to commit to measuring and reducing their water impacts.

- A member of the United Nations Global Compact's Caring for Climate initiative, which is the organisation of the companies that have signed the "Caring for Climate - The Business leadership platform" statement.

- A signatory of the World Bank's "Put a Price on Carbon" statement.

- A founder member of Solutions COP21, in partnership with VIVAPOLIS, the worldwide brand for the French know-how in the field of sustainable city.

set up an **internal price of carbon in 2016** (commitment 8)

ANTICIPATE THE INTRODUCTION OF A PRICE ON CARBON IN INVESTMENT DECISIONS

The introduction of carbon pricing systems in the years to come will create major opportunities for the development of low-carbon solutions. These systems will set up price signals that are tangible and predictable in the long term for economic players, they will heighten the appeal of low-carbon solutions for investors, by improving their profitability, and they will encourage the emergence of remuneration models for operators based on their environmental performance.

At the start of 2015, SUEZ decided to get ready for this new factor by teaming up with Carbone 4 consultants to study the conditions that are necessary to introduce an internal carbon price in its investment decisions in 2016.

→ 73 countries have signed the World Bank's "Put a Price on Carbon" statement.

→ In July 2015, when the French law on the energy transition was adopted, the French Senate recommended a target price for CO_2 of €56 per tonne in 2020 and €100 per tonne in 2030.

LOW-CARBON CITIES

SUEZ is providing technical support in order to raise awareness of the importance of energy and the climate in ten small and medium-sized towns in four south-east Asian countries: Vietnam, Sri Lanka, Thailand and Laos.
The goal is to show these local authorities how low-carbon solutions can also be genuine factors of growth, if they are adapted to the local needs and resources (access to energy, creation of local jobs, use of local resources, cost controls, etc.).
The Low-Carbon Cities project has promoted the creation of a working community in each town, including elected representatives, technicians, citizens and NGOs, and has encouraged each of the ten towns in the project to share their experiences.

→ Prepare the policy makers in emerging countries for the introduction of a new low-carbon economy.

INTRODUCTION OF AN INTERNAL CARBON PRICE TO DIRECT INVESTMENTS TOWARDS LOW-CARBON TECHNOLOGIES IN THE UNITED KINGDOM

Bristol Water, a SUEZ subsidiary in the United Kingdom, has introduced an internal carbon price that serves two purposes: to reduce energy costs and to cut greenhouse gas emissions.
80% of the greenhouse gas emissions are produced by the energy consumed to pump raw water. A fact that convinced the UK-based subsidiary to set a target for the improvement of the energy efficiency of its pumps, from 55% in 2015 to 60% in 2020, and to 65% in 2040. In addition, the target for the reduction of the service's greenhouse gas emissions has been set at 75% by 2040.
Putting an internal price on carbon meets two imperative needs. First, the UK water industry pays a tax of £16 per tCO_2e emitted, which can be integrated in financial forecasts using this tool. Second, this internal price can anticipate purchases in the structure of purchasing costs that are due to regulations on carbon in the future, and in particular taxes on fossil fuels, thereby improving the returns on investment in low-carbon purchases.

→ Bristol Water has committed to cutting its greenhouse gas emissions by 75% by 2040 by introducing an internal price on carbon.

mobilize ourselves to reinforce **the price of carbon** (commitment 9)

SUEZ SUPPORTS THE WORLD'S BANK "PUT A PRICE ON CARBON" STATEMENT

A climate responsible economic model will never succeed without a clear signal from policy makers on the price of carbon, because any long-term uncertainty about this price will form a major obstacle to bringing business onboard in the fight against climate change. Almost 40 countries have already, or are about to, set up a carbon pricing system, in the form of taxes or exchanges of emission quotas. This is also the thinking behind the "Put a Price on Carbon" initiative, launched by the World Bank in June 2014, which SUEZ supports. The companies that have signed this declaration are prepared to share their knowledge with governments and to support national and regional initiatives to put a price on carbon in order to encourage the emergence of a carbon price on a worldwide scale.

In this same spirit of sharing knowledge and feedback, SUEZ has promised to apply the Business Leadership Criteria on carbon prices drawn up by Caring for Climate, a joint initiative of the United Nations and the Global Compact, by introducing an internal price on carbon, promoting carbon pricing mechanisms all over the world and regularly publishing the state of progress towards its objectives. The Group has also committed to setting a price for carbon as part of its membership of the We Mean Business coalition. *"Substantial carbon tariffs are the only way of producing long-term changes of habits and significantly reducing greenhouse gas emissions"*, emphasises economist Alain Grandjean, co-author of the report on climate funding that was handed over to the French president in June 2015.

commit ourselves in favor of **circular economy** (commitment 10)

THE "URB'ADVANCED™"
DECISION-SUPPORT TOOL

Against a backdrop of increasing urbanisation, public water, energy and waste services are becoming more and more complex.
In an effort to cope with this trend, SUEZ designed Urb'Advanced™, the first decision-support tool for the design of efficient and sustainable urban services that are adapted to the local context.
Urb'Advanced™ identifies opportunities for optimisation, recovery and recycling by making a comparative analysis of different technical scenarios. They are evaluated according to sustainable development criteria that include an estimate of their carbon impact.
Urb'Advanced™ cross-sectoral analysis of flows helps develop innovative and sustainable solutions that meet the specific needs and targets of each region.
In this way, Urb'Advanced™ offers local authorities and developers an operational circular economy solution and creates effective operational levers to take indirect actions that reduce greenhouse gas emissions.

→ Urb'Advanced™ is the first integrated decision-support tool for the design of sober and sustainable urban services that are adapted to the local context.

With Urb'Advanced™, SUEZ contributed to the sustainable city simulator Astainable®, for Astana, the capital of Kazakhstan, designed for the French Ministry of Foreign Trade.

CIRCULAR ECONOMY: A NEW CLIMATE RESPONSIBLE ECONOMIC MODEL

In 2014, a dedicated working group was set up at the AFEP (Association Française des Entreprises Privées), at the instigation of SUEZ, to highlight the potential of circular economy to cut greenhouse gas emissions. More than 75 company representatives, along with members of all the ministries involved and specialised associations, took part in an analysis of the conditions of success and the obstacles to the development of this new model, completed by a series of recommendations for the public authorities. The testimonials provided by the members of the working group confirmed that the circular economy is, first and foremost, a new economic model, that helps dissociate growth from the extraction of raw materials by reusing them and recycling everything, while also addressing imminent challenges, such as the fight against climate change. In an effort to speed up the transition towards a circular economy, the member companies decided to adopt an initiative consisting in identifying their main flows of resources to which circular economy measures could be applied, preparing to optimise these flows with their strategic partners and setting targets for a number of key resources. The group's conclusions were presented by Jean-Louis Chaussade, CEO of SUEZ, at the Business and Climate Summit in Paris in May 2015, and will be detailed in an upcoming COP21 publication.

→ More than 75 representatives of business working to promote the circular economy.

INDRA, A JOINT VENTURE TO APPLY THE CIRCULAR ECONOMY MODEL TO THE RECOVERING OF AUTOMOTIVE PARTS

SUEZ and Renault have jointly developed a process capable of recovering and reusing up to 95% of the parts of an end-of-life vehicle. The INDRA Automobile Recycling joint venture proposes a global service for the reuse of vehicles. With a network of almost 200 certified vehicle deconstruction companies, INDRA collects the vehicles in 320 centres, deconstructs them on seven sites and sells the parts for reuse in 400 certified end-of-life vehicle centres. Recovering used cars significantly reduces the consumption of the natural resources required to build cars and also cuts the greenhouse gas emissions resulting from their production.

→ 10 million vehicles reach end of life in Europe every year. The new European targets require 95% of a vehicle's weight to be recovered by 2015.

METAL RECOVERING

The recovering of metal waste has become a constant preoccupation for industrial companies.
SUEZ subsidiary Boone Comenor Metalimpex collects and recycles metal materials from manufacturers and directly integrates them in the production line or resells them.
Boone Comenor Metalimpex manages every step of the metal waste processing cycle, from collection to the sale of the recycled raw materials. Where appropriate, it can offer to install processing and recycling solutions directly on its customers' production sites.
Since 2013, it has been collecting, conditioning and selling metal from the steel or aluminium production cut-offs from the PSA factory in Spain.

→ A circular economy solution covering the complete metal transformation chain.

→ Water and waste circular economy loops in one of the largest industrial parks in the world.

CIRCULAR ECONOMY LOOPS
IN THE INDUSTRIAL PARKS IN SHANGHAI

There is no longer any doubt that China is really committed to indexing its economic development to a genuine environmental policy and to encouraging the circular economy.
In China's largest industrial park, in Shanghai, the construction of a new plant to process and recover hazardous waste to produce energy is one example. The result of cooperation between SUEZ, through its Sino-French subsidiary, and Shanghai Chemical Industrial Park (SCIP), this new local circular economy loop provides the companies on-site with a sustainable solution for the management of their hazardous waste.
It also supplies renewable energy at a low cost and a quality of water adapted to the industrial companies' needs, while contributing to the achievement of the targets to cut greenhouse gas emissions set by the authorities at the same time.
The facilities operated by SUEZ meet stringent standards and are the fruit of the Group's research into the circular economy of water, waste and energy. The SCIP incinerator is in fact the only one to have received an operating licence from the authorities to incinerate industrial waste.
Finally, this project illustrates the export to China of waste-to-energy experiments developed in Europe and the harmonisation of industrial emissions standards.

FUTURE OF WASTE: A DIGITAL PLATFORM THAT NETWORKS ENERGIES

MakeSense and SUEZ have launched the "Future of Waste" collaborative platform in France. Open to citizens, artists, inventors, public authorities and private enterprises, "Future of Waste" invites its members to interact on projects, share and promote innovative local solutions.

Everyone can contribute to raising awareness of present and future waste management and to encouraging a more circular economy that is kinder to society and the environment, by exchanging ideas and know-how, requesting collaboration and organising events.

For example, in February 2015, a restaurant in Paris called on "Future of Waste" to find around 10 volunteers with various profiles to help them design a waste management system that would set an example of the circular economy in the catering business.

→ "Future of Waste" is a collaborative platform intended to promote civil initiatives that contribute to the development of circular economy solutions.

contribute to awareness raising on **climate solutions** (commitment 11)

SUEZ, AMBASSADOR OF THE SUSTAINABLE CITY IN THE GRAND PALAIS ON THE OCCASION OF COP21, ALONGSIDE VIVAPOLIS

SUEZ, a founder member of the Solutions COP21 initiative, is exhibiting its climate solutions in the Grand Palais, Paris, between 4th and 11th December 2015, alongside many other companies, local authorities, start-ups and NGOs. The Group, which leads COP21 Solutions Sustainable City network, is basing its exhibition on low-carbon urban development and the resilience of cities to climatic vagaries. As part of this initiative, the Group co-chairs the "Waste less, Consume better" working group, which includes a number of other companies, such as Schneider Electric. One of the working group's goals is to harness the circular economy in the fight against climate change.

→ SUEZ heads the Solutions COP21 sustainable city network in partnership with VIVAPOLIS, the worldwide brand for French know-how in the field of sustainable city.

SUEZ, **OFFICIAL PARTNER OF COP21**

SUEZ is an official partner of COP21. In this capacity, the Group has devised the master plan for residual resources on the Le Bourget site on the occasion of the United Nations Conference on Climate Change, between 30 November and 11 December 2015. The plan provides for the management of all the residual waste on the COP21 site, before, during and after the event. SUEZ also recovers part of the waste flows produced during the summit on its own plants located in the Paris region, with a target of 100% of reused waste.

→ Contribute to achieving the target of "100% of reused waste" that policy makers want at COP21.

establish a **Committee of Experts on the Climate Transition** attached to SUEZ General Management **(commitment 12)**

Dialogue and co-construction with stakeholders at local and institutional levels are essential pre-conditions for the operational performance of SUEZ. This is the reason why the Group's Sustainable Development Road Map for 2012-2016 contains a commitment to "work together on solutions and have an open dialogue with our stakeholders".
From 2004 to 2013, SUEZ set up the Foresight Advisory Council, a guiding and forecasting body made up of 23 independent personalities of different nationalities, who are all experts in the environment and sustainable development. Today, the Group has decided to invite a group of worldwide climate experts, scientists and economists to formulate recommendations on how SUEZ should take the urgent climate situation into consideration.

SUEZ worldwide

Services and industrial solutions to **reuse and secure** resources.

81,000
employees worldwide

€74 M
invested annually in R&D

We are at the dawn of a resource revolution. Faced with an increasing world population, growing urban development and rarefied resources, the security, optimisation and recovery of resources are indispensable to our future.
SUEZ supplies 92 million people with drinking water and 65 million with sanitation services, collects waste from almost 50 million people, recovers 14 million tonnes of waste per year and generates 5,138 GWh of local and renewable energy. Employing 81,000 people, SUEZ is active on five continents and a key player in the circular economy for sustainable resource management. SUEZ generated total revenues of €14.3 billion in 2014.

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