

# ACTIVITY REPORT 2017





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## COMMITTED TO RESOURCING TOMORROW'S WORLD

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We live in a world where we need to take better care of our resources so that our societies can develop peacefully and sustainably while combating the effects of climate change. That is summed up in our mission statement: **Resourcing the world.**

**Resourcing the world** means developing the access to resources using sustainable solutions that provide the greatest possible number of people with the resources they need for their well-being, as well as making regions attractive and helping companies' performance.

**Resourcing the world** means conserving resources using innovative, self-sustainable solutions to ensure we only extract what is strictly needed from the right place, using the right process, while protecting the current and future balance of ecosystems.

**Resourcing the world** means renewing resources using solutions that considerably extend the life span and usage value of water, raw materials and energy extracted from the natural environment.

**Resourcing the world** is the mission behind which we form a community with our 168,800 employees who are committed - with optimism, determination and solidarity - to ensuring that each of our actions has a positive impact.

We proudly lay claim to this community and its goals:  
**#WeAreResourcers!**

This mission guides our daily actions and how we create value for all our stakeholders, whether shareholders, clients, employees, suppliers or the regions where we operate, together with all our partners.

It also guides us in how we prepare for the future, in reaching the 2030 sustainable development goals, and in how we conceive of tomorrow's world.

We will continue to act together to **Resource the world!**





# COMM TO RESOUR TOMORROW



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# HOW WILL 9 BILLION PEOPLE BE FED IN 2040?

In response to population growth, rampant urbanization and the explosion of the middle classes, world food production will have to increase 50% by 2050. However, major hurdles will need to be overcome as agriculture will be subject to various pressures going forward: pressure on available farm land, conflicting uses of cereal crops, soil pollution, greenhouse gas emissions and climate change, increasingly scarce fresh water resources, crop yields, and more.

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**777**

million people malnourished in 2014; 815 million in 2016.

**30%**

of energy consumed worldwide is used by the food production and supply chain.

**70%**

of water extracted worldwide is used by the agricultural sector and only 2% of wastewater is recycled and reused.

## Securing food for all

Veolia is already active in every step of the agribusiness chain from farm production to the final consumer, and including processing and distribution. The company develops solutions around its three core areas of business. For energy, the focus is on reducing the consumption of food chain stakeholders and supplying renewable and green energy. For water, it is on using recycled wastewater for crop irrigation. And for waste, the focus is on the production of organic fertilizer from biowaste, or even insect farming to produce alternative sources of protein for animal feed – and why not for humans at a later stage?

### “We must adopt a circular economy approach to food.”

**Emmanuel Faber,**  
Chairman and CEO  
of Danone

In the coming 25 years, food production will undergo a major revolution, resulting in greater quantities being produced at higher quality. Our current system is approaching its limits, forcing us to reinvent it. In the future, food production will be much more local for environmental, social and political reasons. It will also be much more connected in cycles rather than just in chains. We must adopt a circular economy approach to conserve resources. Food production will also be

much more technologically connected. These changes will disrupt the industry and technology will result in computerization having greater reach in the areas of distribution, manufacture and production. We have chosen a strategy of steadfast support for this revolution in our selection of core businesses – alternatives that are more sustainable and healthier for our customers – and our organization. It is now up to us to work to improve our knowledge of local food production cultures, consumer tendencies and social and cultural trends. These aspects will guide the way in which we conduct our mission locally, tomorrow and in the decades to come.



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**How will  
9 billion people be fed in 2040?**

# VEOLIA IS ALREADY ON BOARD



## **Recyfish: reverse logistics**

In France, Veolia and STEF, a European cold chain logistics specialist, have come up with Recyfish, an ecological solution to recovering fishing industry waste as agricultural fertilizer.

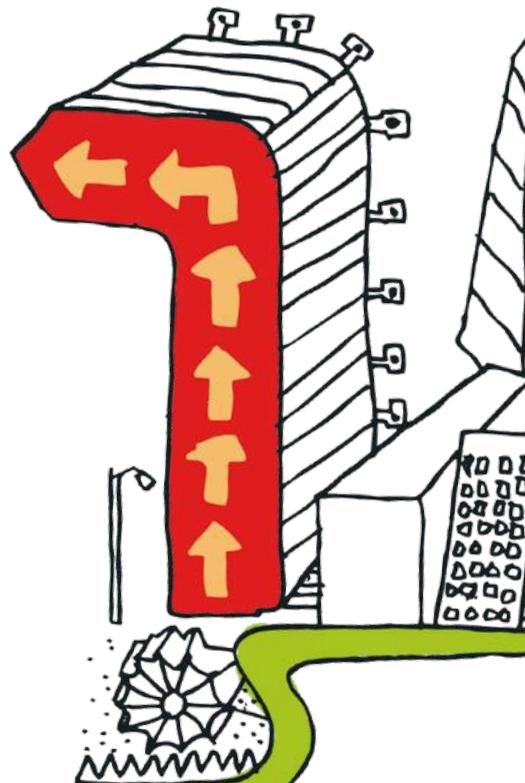
The principle is simple: Veolia provides STEF's teams with empty crates. After delivering fresh fish to their customers, STEF then picks up the same crates filled this time with fish waste. Centralized at a STEF site, the waste is then processed and turned into fertilizer by Veolia. The whole process aims to recover around 2,500 metric tons of fish waste by 2019.

## **QualiAgro, the urban compost label**

The QualiAgro research program conducted with INRA, the French agricultural research center, is assessing the agronomic and environmental impact that can be achieved with waste organic matter (compost from biowaste, municipal solid waste and wastewater treatment sludge) compared with the better-known impact of mineral fertilizer and cow dung. The program is long term, based on 20-year field trials. The initial results, in terms of both crop yields and environmental risks, are proving very promising. According to our own calculations, the recovery of nutrients in organic household waste could eventually provide up to 10% of the fertilizer the world will need to satisfy future demand for food. As result, it may be possible in 30 years' time to restore more than 50 million hectares of arable land by adding compost derived from household waste organic matter to the soil.

## **Intelligent reuse**

Given that periods of drought now appear to be a recurring feature in France, Veolia and FNSEA, the French farmers' federation, have formed an ambitious research partnership. The aim is to reuse wastewater to irrigate crops and make use of the nutrients found in wastewater: nitrogen, phosphorus and potassium. The dual benefit will be to combat increasingly scarce fresh water resources and to conserve resources, such as phosphorus, which is expected to be depleted within 50 to 100 years.





### Fertile sludge in Milwaukee

As the operator of the Milwaukee, United States, wastewater system, Veolia came up with the idea of converting the treatment sludge into fertilizer. Each year, around 50,000 metric tons of Milorganite® (Milwaukee Organic Nitrogen) rolls out of the Jones Island facility. This high-quality fertilizer has been awarded the “Exceptional Quality” label by the United States Environmental Protection Agency. It has also been certified by the United States Department of Agriculture because it is produced using renewable resources. Initially intended for the region’s parks and gardens, Milorganite® is now sold across the United States, Canada and the Caribbean.



## Insect farms for sustainable animal feed

The black soldier fly’s role in the environment is to break down and recycle organic waste. This natural function of the fly is at the heart of our Entofood project, an efficient circular economy model providing an innovative and sustainable solution to the issue of animal feed. Basically, we are “insect farmers”. At a pilot farm 30 kilometers north of Kuala Lumpur in Malaysia, we breed larvae fed on food industry waste. After being washed, dried and ground, the larvae are converted into meal (protein) and insect oil, while the residue from this process – called bioconversion – is used as organic fertilizer. For us, the partnership with Veolia was self-evident. On the one hand, we rely on Veolia’s knowledge about sources of food industry organic waste, while we have the technology to transform this waste into value-added products. Insects are part of the diet of many aquatic and land animals. So their addition to feedstock for farmed animals is completely logical and provides a more natural and sustainable solution.

This economic model is extraordinarily efficient given the insects’ growth rate. In just 2 weeks, a kilogram of eggs produces 6 metric tons of larvae – the weight of an elephant. At our new production center, we will have the capacity for almost a billion eggs a day, all year round. In collaboration with Veolia, we are also planning a development center for the bioconversion of other sources of waste using other insect species. By 2040, insect protein may account for around 10% of the market not just for animal feed but also for human food.



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**Franck Ducharne  
and Frédéric Viala,**  
cofounders of Entofood

# HOW TO MEET AN EXPONENTIAL RISE IN ENERGY DEMAND?

Population explosion, rapid rise of the middle classes, economic growth, digitalization and increasing mobility – all these factors combined will result in a 30% increase in worldwide energy demand by 2040. The increase will be largely driven by demand for electricity, which is expected to outpace all other forms of energy by a factor of four to one. Significant growth in renewables will be needed to meet this demand. At the same time, however, fossil fuels will remain dominant, as they will still account for 77% of the world's energy mix in 2040.

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**500**

**million**  
The number of people worldwide who will still have little or no access to electricity in 2040.

**30%**

The increase in worldwide energy demand between 2017 and 2040.

**2/3**

of the 30% growth in worldwide energy demand will originate from developing countries in Asia (Southeast Asia, India, etc.).

## Veolia, key player in the energy sector of the future

Tomorrow's energy will need to be low carbon, decentralized and digitalized. Veolia is already helping decarbonize energy by developing energy-efficiency solutions – which may reduce carbon emissions by 40% by 2040 – and producing carbon-free energy from waste. The company also manages “smart” local energy grids, which include energy storage systems and information and communication technologies. This decentralized model allows for more flexible management and an optimized balance between energy production, distribution and consumption.

**“We are making great progress towards a clean energy transition, but can further scale up our efforts to meet our SDGs.”**

**Timur Gül**, Senior Energy Analyst at the International Energy Agency (IEA)

Energy is at the heart of many of the United Nations's sustainable development goals (SDGs). For example, around two-thirds of global greenhouse gas emissions today are coming from the energy sector. The way we produce and use energy is also at the heart of the air pollution problem. And, at the same time, 1.1 billion people worldwide still have

no access to electricity today. We really are making great progress towards a clean energy transition, in particular for energy efficiency and renewables. But, as the IEA's new sustainable development scenario out to 2040 shows, we can further scale up our efforts for a clean energy transition to meet the SDGs. We also believe that we need to consider new ways of thinking about energy, such as through the opportunities offered by digitalization, or by emerging technologies such as storage. Innovation will be instrumental in delivering a cleaner energy future. The global energy industry will need to play a key role here, together with energy policymakers and other stakeholders.



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**How to meet an exponential rise in energy demand?**

# VEOLIA IS ALREADY ON BOARD

## Braunschweig: building the city of the future

In Braunschweig, we're doing all we can to meet the targets of the *Energiewende* - energy production with no negative impact on the climate by 2050. The starting point isn't easy, because we have the Mitte power plant, which is fired by fuel oil and coal, and is located right in the city center. It provides the city's 250,000 inhabitants with heating and electricity. With the help of Veolia's international experience and its expertise, we're rapidly deploying a full strategy to decarbonize and decentralize energy production. The first initiative is the Hungerkamp eco-neighborhood and its biomass-fired boiler. It blends completely into the urban environment and is proving to be both efficient and profitable! Another project is shaping up: electric mobility, with electrification of public transportation, both trains and buses. And that's far from all: optical fiber, smart metering and energy efficiency are all in the cards. With this win-win partnership, we're going to make Braunschweig the successful demonstration of what the city of tomorrow can be - sustainable for both energy and water supply.



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**Ulrich Markurth,**  
City Mayor of  
Braunschweig



**The Big Apple:  
queen of savings**

Veolia has been working with the New York Power Authority (NYPA) on its strategy to reduce the energy used by 3,900 public buildings, including the Bronx Zoo and Grand Central Station, to help make New York State a front-runner in energy savings. As a result, the NYPA saves more than \$134 million a year and avoids the emission of almost 820,000 metric tons of greenhouse gases, which is the equivalent of avoiding the use of more than 2.5 million barrels of oil a year.



**Swedish reservoir**

Veolia is using microgrids to work on developing a new generation of heating networks that combine flexibility and real-time remote management that is optimized as a function of consumption and production, while also recovering local sources of lost heat. In Borås, Sweden, Veolia manages a 37,000 cubic meter reservoir of hot water – the equivalent of 10 Olympic swimming pools – in which it can store the heat produced by a biomass-fired cogeneration plant. This solution smooths the city’s peak and off-peak energy demand and also reduces its carbon footprint.



**Electricity in store**

In the United Kingdom, at its Ellesmere Port hazardous waste incineration plant, Veolia is trialing an innovative electricity storage system called “Project Ion,” using technology that still remains relatively undeveloped around the world. The project is one of the very few battery storage systems in the country and the high-temperature incinerator is the only one to be connected to such a system. The lithium-ion battery can generate the equivalent of 100,000 standard AAA batteries, which is enough to power up to 1,000 households. This local solution could meet the town’s energy needs while also relieving the national grid, which is close to saturation.

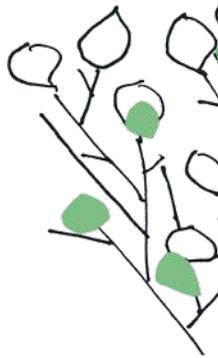
**Low-cost carbon capture**

Despite the rapid rise in renewable energy, fossil fuels will retain their dominance in the world’s energy mix in 2040. We will therefore have to find solutions to limit the carbon they will continue to emit. Capturing and reusing the CO<sub>2</sub> could be a solution. Veolia is therefore running experiments with Carbon Clean Solutions Limited (CCSL), an Anglo-Indian start-up which has developed carbon-capture technology that is 30-40% cheaper than the technology available up until now. CCSL’s flagship facility is a coal-fired power plant in Tamil Nadu, India, which has become the world’s first industrial facility to reuse all its CO<sub>2</sub> emissions.



# HOW TO COMBAT NEW TYPES OF POLLUTION?

Pollution of water, soil and especially air is a major concern worldwide. The cause of 9 million premature deaths in 2015 (or 16% of all deaths worldwide), water pollution is the number one cause of disease and premature death today. Unless concerted action is taken by governments and economic stakeholders, this situation could worsen by 2040, in particular because of the rapid industrialization of developing countries, growing use of new materials and technologies, and the appearance of new pollutants and pharmaceutical molecules.



## 7.5

**million**  
The number of premature deaths each year due to air pollution, the major risk factor according to the IEA, in 2040 (6.5 million in 2015).

## \$4.6

**trillion**  
The annual cost of loss of well-being due to pollution, equivalent to 6.2% of the world's generation of wealth.  
*Source: The Lancet.*

## 10%

The loss of land-based biodiversity predicted by 2050 if nothing is done, with significant losses in Asia, Europe and southern Africa.  
*Source: OECD.*

## Combating water, soil and air pollution

Veolia has for many years been an expert in treating pollution, including the most complex types. Several challenges will have to be taken up in the coming decades. For water, we will have to widely deploy techniques to treat mass pollutants in developing countries and micropollutants in developed countries. In order to take things a step further for soil remediation, we will need to systematically diagnose and characterize polluted sites and soil, and continue to develop more natural, less costly remediation techniques. Lastly, we will need to develop large-scale solutions to combat air pollution, which is a major environmental and health problem.



**“The world can be more sustainable and free of impacts on our health.”**

**Dr María Neira,**  
Director of the Department of Public Health, and Environmental and Social Determinants of Health at the World Health Organization (WHO)

The links between health and environment are now well known: exposure to air pollution, lack of drinking water, proper sanitation, and poor waste management. According to the WHO, 12.6 million people die each year from environmental risks. This is an alarming situation that must force us to take measures because

we can correct it. For the world of 2040 we need to imagine cities that are less polluted, with mass transit systems that encourages us to get out of our cars, effective waste management to eradicate pollution, clean and renewable sources of energy, and drinking water management that provides access to water for all. It's a question of will and determination on the part of politicians and citizens. It is also the responsibility of private stakeholders, such as Veolia, who must continue to demonstrate creativity and technological innovation to lead us to a more sustainable world that does not impact negatively on our health.

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...]  
**How to  
 combat new types of pollution?**

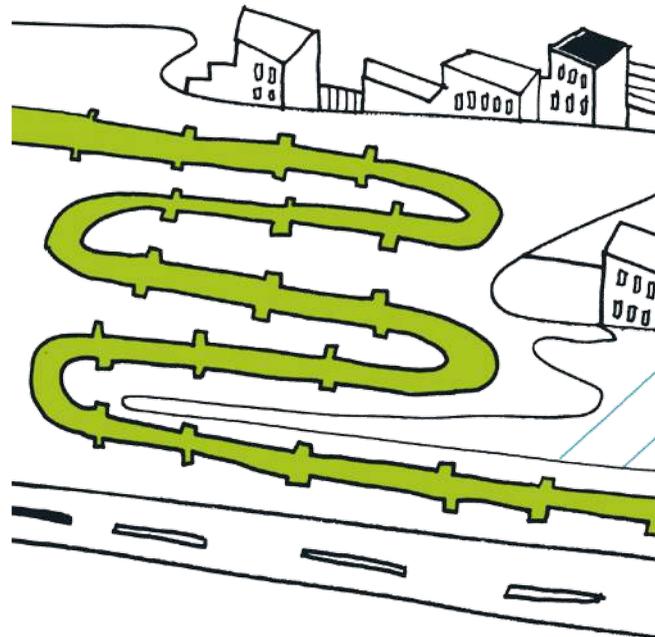
# VEOLIA IS ALREADY ON BOARD



**Anne Le Guennec,**  
 CEO Enova by Veolia

## Breath of fresh air for the Sheraton Dubai

Hotels have particularly stringent comfort requirements, one of which is the quality of their indoor air. In the Middle East, this requirement has been pushed to its maximum because people generally spend around 80% of their time indoors. This percentage is even higher in a city like Dubai, where summer temperatures can reach up to 50 °C. With that kind of heat, it is not possible to go for a walk or to open the windows for some fresh air. Veolia has pushed the boundaries to find solutions by continuously monitoring indoor air quality to guarantee maximum comfort. At the Sheraton Dubai Mall of the Emirates Hotel, in cooperation with Enova by Veolia, around 30 sensors and measurement devices have been installed in the rooms, bars and spa to collect data. The results of the data analysis by the Hubgrade are used to fine-tune settings and maximize air quality inside the buildings. By 2040, there will be extraordinary changes in digital technology, transparency and connectivity. We are already planning for future needs. For hotels, alongside their sustainability features and the attention they pay to water, energy consumption and improved recycling rates, indoor air quality will be a differentiator between establishments.



### Recycled electric batteries

Under its partnership with automaker Renault, Veolia implements innovative solutions for recycling spent batteries from electric vehicles. This avoids the pollution that some of the components might otherwise cause, such as lithium, cobalt, nickel, copper, cadmium and manganese. Above all, the process recovers strategic metals so they can be reused in various industrial processes, such as steel and alloy production, or in the chemicals industry to produce metal salts and copper and cobalt sulfates, where they will be used as precursors in numerous applications (glassmaking, batteries, inks, and electrochemicals). Lastly, for lithium, the aim is to obtain very pure lithium carbonate that can be used as a precursor to manufacture new Li-ion batteries.



### Tracking down medications in wastewater

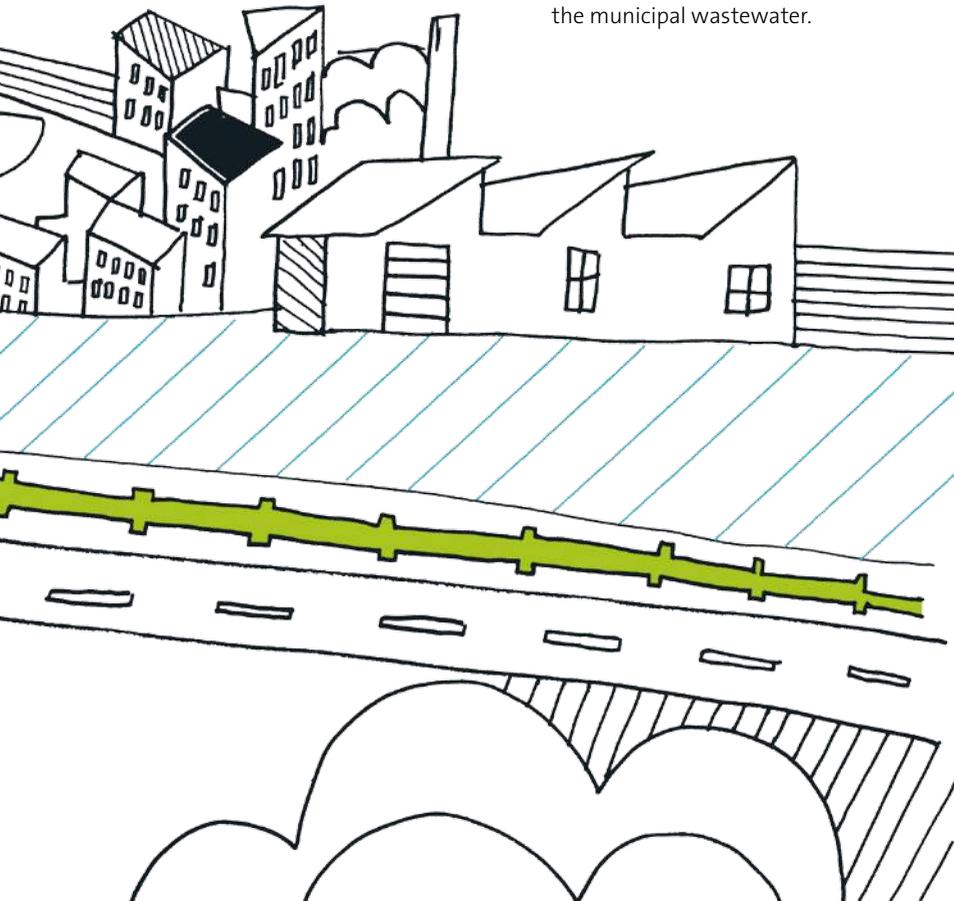
Since 2014, Veolia has been conducting a highly promising experiment with Skejby Hospital in Aarhus, Denmark's second-largest city. The aim is to introduce a traceability and treatment system for medicinal waste in the hospital's wastewater. The project has since been extended to the Herning Vand municipal wastewater treatment plant located nearby. The results are conclusive. Thanks to the technologies applied by the Veolia Group, up to 90% of medicinal residues are removed from the municipal wastewater.

### Innovation in the air

In France, Veolia is a founding partner of AIRLAB, created by Airparif, the Greater Paris region's air measuring laboratory. It is the first air quality innovation incubator. Within this structure, Veolia is working on an innovative project together with Icade, a property developer. It involves a new generation of sensors to continuously measure and adjust air quality in office buildings: ventilation, interior air recycling, measures of relative humidity, CO<sub>2</sub>, fine particles and volatile organic compounds. After reaching out to start-ups to design efficient sensors, Veolia and Icade expect to begin the first tests in their own buildings in summer 2018.

### Key to polluted soil

Of all the major soil remediation projects being conducted by Veolia in urban environments, the Grand Paris Express is outstanding. The largest urban project currently under way in Europe, it involves 200 kilometers of automated rail lines – the equivalent of the entire current Paris Metro network – and 68 stations. Involved in the work on extending metro line 14 and construction of the future metro lines 15, 16, 17 and 18, Veolia is remediating part of the 45 million metric tons of spoil excavated from the worksites.



# VEOLIA COMMITTED TO ACHIEVING SDGs BY 2030

Veolia conducted a study with internal and external stakeholders to identify the sustainable development goals (SDGs) most relevant to its businesses and commitments, and clarify its contribution.

The data collected pointed to five SDGs around Veolia's core businesses:

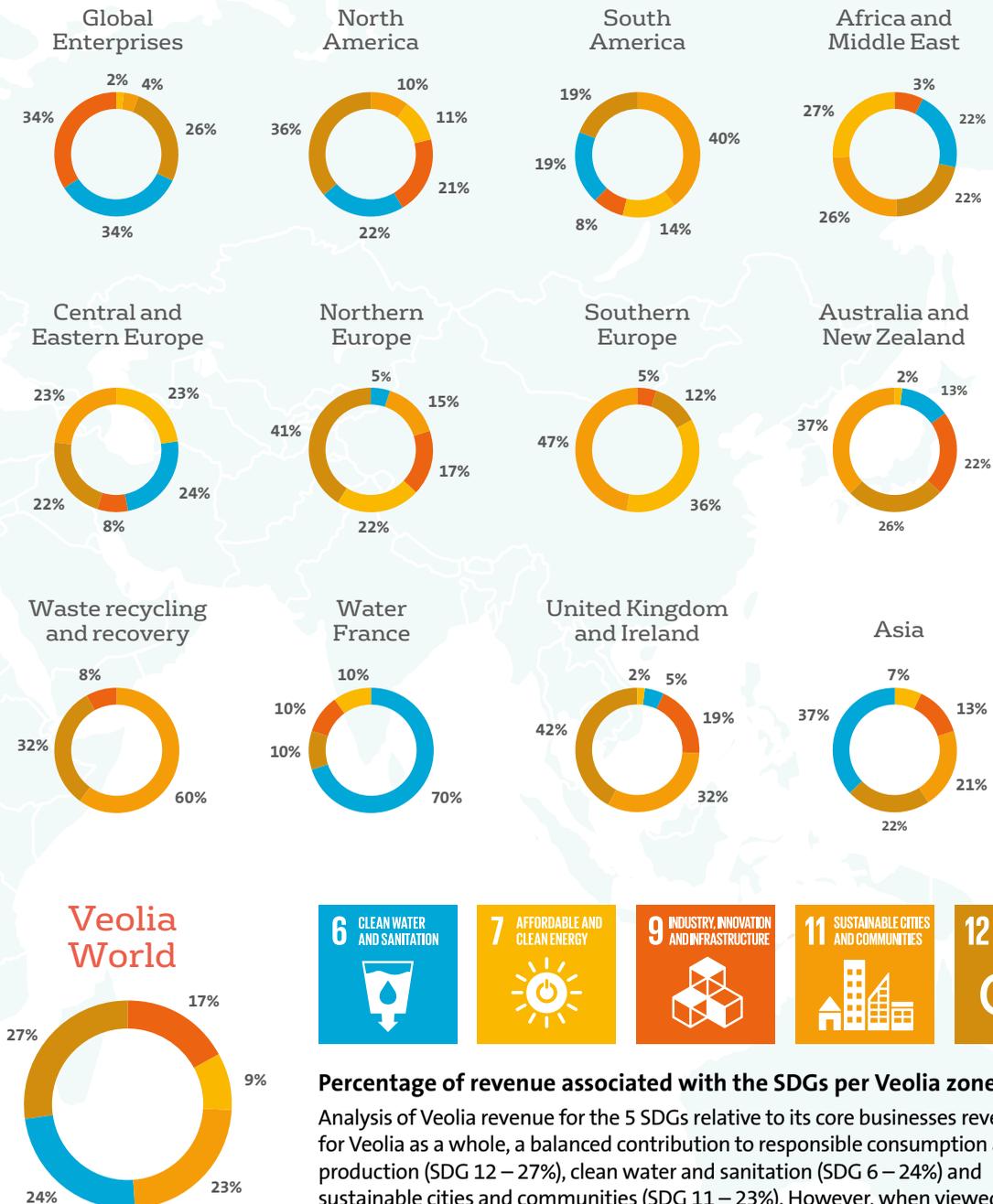
- in its long-standing businesses: a major player in the sustainable city (SDG 11) through the management of essential services such as clean water and sanitation (SDG 6), energy (SDG 7) and waste (SDG 11);
  - in its growth businesses: a driver of innovative industrial manufacturing (SDG 9) and responsible consumption (SDG 12) through the circular economy.
- The study also highlighted a direct link between Veolia's operational performance and its ability to respond to the international community's new targets, as Veolia Group businesses contribute directly to achieving SDGs (see diagram).

It showed that Veolia contributes in different measures to implementing all 17 SDGs, with a direct or indirect impact on 65, or 40%, of the 169 SDG targets.

Veolia's capacity for innovation (SDG 9) and partnerships (SDG 17) are also viewed by stakeholders as two key criteria for helping achieve the SDGs, especially regarding climate action (SDG 13). SDG 13's targets and indicators mainly focus on government involvement rather than nongovernmental players, such as companies. This is why Veolia did not include it in the contribution to revenue analysis, despite the company's daily commitment to helping resolve climate change issues.

In 2017, for the High-Level Political Forum, the United Nation's annual review of the SDGs, Veolia attended in order to share and testify to its commitment, in particular in a session addressing the importance of collaboration for implementing the SDGs.

## Contribution of each zone to the 5 SDGs relative to its core businesses



### Percentage of revenue associated with the SDGs per Veolia zone

Analysis of Veolia revenue for the 5 SDGs relative to its core businesses reveals, for Veolia as a whole, a balanced contribution to responsible consumption and production (SDG 12 – 27%), clean water and sanitation (SDG 6 – 24%) and sustainable cities and communities (SDG 11 – 23%). However, when viewed by zone, the level of contribution to the SDGs differs depending on their respective principal areas of business.



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# STRATEGY RESOURCING E WORLD



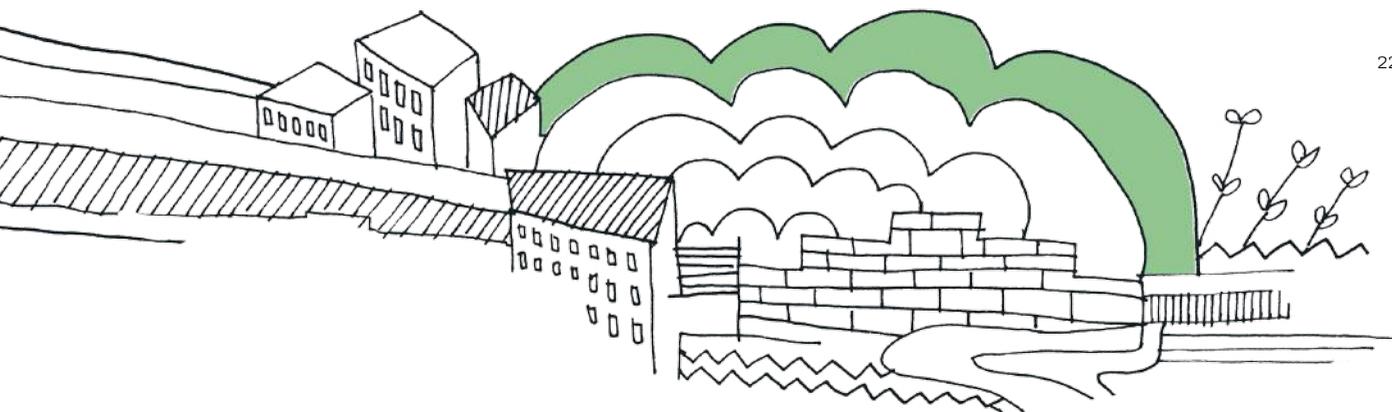
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**INTERVIEW WITH ANTOINE FRÉROT,**  
Chairman and Chief Executive  
Officer of Veolia

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# 2017

**WAS NOTABLE FOR  
A MARKED UPTURN  
IN GROWTH.**

Our revenue rose 4.9%  
at constant exchange  
rates to €25.1 billion.

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## 2017 was the second year of Veolia's plan for growth. What progress was made?

**Antoine Frérot:** 2017 was an intense, successful year where we saw a marked upturn in business, robust and profitable growth, and results that outstripped targets. Above all, the year saw a sharp rise in growth, as our revenue climbed 4.9% to a total of €25.1 billion at constant exchange rates. Expectations were high around this, and Veolia has shown that its efforts to expand and renew its service offerings, while boosting its sales and marketing resources, have clearly paid off. Our highest growth regions were Latin America, Asia, North America, and central and eastern Europe. But in all the regions where Veolia operates, we achieved some magnificent successes with both industrial and municipal clients, whether in our long-standing market segments or at the leading edge of environmental business. Advanced activities are part of our growth strategy to target buoyant markets, create new areas of growth, and find a more equal balance in our contract portfolio between our different business sectors and geographic regions.

## How are the measures taken in 2017 reflected in the year's financial figures?

**A. F.:** In the satisfactory results! The main financial indicators show just how much our operational performance has improved, together with the upswing in our profitability, control over our debt and the excellent application of capital employed. Our EBITDA comes in at €3.3 billion, which represents a rise of 2.7% at constant exchange rates.

Current net income is €623 million, a 6.1% improvement at constant exchange rates. Our €255 million cost savings are on target.

These results are all the more outstanding given that at the start of 2017, the economic environment appeared unfavorable for our business. The initial difficulties were quickly circumvented and then offset, which clearly reflects our vitality and responsiveness.

And all the more, our growth was achieved on the back of constant capital employed and steady debt. Undeniably, 2017 will go down as a good year!

## What is the outlook for Veolia in 2018 and 2019?

**A. F.:** Overall, it looks favorable and we have confirmed all the Group's commitments. The positive outcome for 2017 has undoubtedly put us in an excellent position to meet our 2018 targets. Those targets are to ensure sustained revenue growth, achieve €300 million in cost savings and grow our EBITDA at a faster pace than in 2017. For 2019, we're targeting EBITDA of between €3.5 billion and €3.7 billion. In short, we will continue down the same path, applying our growth plan

“FEW  
BUSINESSES  
ARE EVOLVING  
AS FAST AS  
OURS WITH THE  
FAR-REACHING  
CHANGES  
AFFECTING  
CITIES AND  
COMPANIES.”

pragmatically and with determination. There are two parts to this plan. One is an organic growth drive coupled with carefully selected small and medium acquisitions. In 2017, 70% of our revenue growth came from organic growth and 30% from acquisitions. The other aspect is an efficiency drive based around our operational performance improvement and cost containment programs, which will be useful for countering certain headwinds that we will undoubtedly encounter as we progress through the year.

2017 was a year of transition, but 2018 will be one of confirmation: confirmed growth, profitability and innovations. It will be an important year, because it will allow us to fully embed our current positive trajectory for the future. Few businesses are evolving as fast as ours with the far-reaching changes affecting cities and companies. This is why our businesses will continue to deliver growth for many years to come.

### How does Veolia capitalize on its range of expertise and the profusion of new technology?

**A. F:** Veolia is at the crossroads of three businesses – water, waste and energy – each of which is decisive in the future of cities and industry. So we enjoy a unique, unrivaled position that we strive to use to maximum potential. Our strategy involves blending skills to develop new high-value-added services, and to extend our lead over competitors unable to leverage a depth of expertise as broad as ours.

One particular success that illustrates this interconnection between our different businesses is Birdz, a company that combines our long-standing expertise with the most advanced telecommunications and information technology. Initially created to industrialize remote water meter reading, in just a few short years this subsidiary has become one of France’s leaders in connected objects for urban networks, energy efficiency and city buildings. Today, with more than 10 million connected objects worldwide – of which 4 million in France – Veolia has become a major player in the environmental Internet of Things.

Our clients expect us to be close to them locally, but also that, whether in Toulouse, Mexico City or Dubai, we deliver innovations that we have developed in Prague, Shanghai or New York. That’s why we focus on rolling out our technological progress wherever we operate, as soon as it offers a solution to a real and solvable need.

We cultivate the advantages derived from the diversity of our geographic locations and of our immense breadth of technical experience to create the environmental services of the future.

### The plastics recycling market is experiencing rapid growth. What goals does Veolia have for this market?

**A. F:** By 2050, plastics production is set to quadruple worldwide. Given this, and that the recycling rate is currently stuck at 9% globally, Veolia aims to create a well-structured plastics recovery and recycling industry to offer a viable alternative to new plastic materials. We expect to increase revenue in this business fivefold by 2025, to €1 billion. The current marketplace is conducive to recycling plastics: in France, the government has recently taken steps that will lead to all plastic being recycled by 2025. Similarly, China’s recent decision to limit the importation of plastic waste will create opportunities for Veolia, both in China – to develop recycling in its domestic market – and in Europe for the repatriation of part of the processing industry for waste plastic previously exported to Asia.

Whether recycling plastics and batteries or precious metals in computers, Veolia's strategy is to closely explore the market for converting waste into resources and carefully position itself on the most profitable segments, where its expertise provides it with the ability to become a leader.

### Over the past few years, Veolia has moved into a series of new businesses. Why?

**A. F:** There's nothing new about this policy to extend our expertise. That's how we've always operated to expand the range of what we offer clients. Look at what we've achieved in the treatment of hazardous industrial waste. This business requires a huge command of technical expertise, which we started to acquire 40 years ago. We're now the world leader in this field. We want to try to repeat a similar pattern in fields such as facility end-of-life decommissioning, treatment of low-level radioactive waste, rare earth recycling, air quality, and so on. Our businesses are keyed into cycles that run for several decades. Today, we're sowing the seeds of businesses that will only reach maturity in 10 or 20 years. All our successes, today's and yesterday's, are the result of investment in the long term.

### What other innovations is Veolia targeting for the longer-term renewal of its businesses?

**A. F:** Agriculture is probably the most original of the fields for which we're developing solutions. That may seem surprising, but this choice is actually very logical, as the sector sits at the crossroads between our three areas of excellence – water, waste and energy – and demand for agriculture is exploding. Looking ahead to 2040, one of the major challenges we will face will be how to produce enough food to feed some 9 billion people, given the growing scarcity of fertile land, water and energy. How will we respond to this challenge?

Our current practices actually provide us with some interesting aspects to the solution. We already help the farming sector to use its resources more efficiently and boost farming yields. For example, we produce alternative fertilizers from organic waste in northwestern France and from wastewater treatment sludge in the United States; we recycle wastewater for market gardens in Abu Dhabi or in Queensland, Australia; we produce green energy for aquaculture in Hamamatsu, Japan, and to heat glasshouses in Lapouyade, France; and we're helping Danone's agribusiness facilities to reduce their environmental footprint.

However, we have no intention of stopping there. We're currently working on innovations to develop an urban agriculture business. In Brussels, we're working with the BIGH start-up to operate urban aquaponic farms. With the city at its core, Veolia provides BIGH with essential services, produces alternative resources from municipal waste and manages urban energy systems. Combining these areas of expertise to support the development of agricultural activity in cities is a natural progression for us.

Culturally, our company has always sought to integrate by increasing connections between expertise and business sectors. That has proven to be crucial in helping our clients take up the 21st century's challenges and create areas of high-value-added excellence, which will extend Veolia's growth going forward. It's the role of a global leader to shoulder the risks inherent in exploring new frontiers. We're proud to be forging the way ahead.

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# 2018

**WILL BE A YEAR  
OF CONFIRMATION.**

confirmed growth, profitability  
and innovations.

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# THE EXECUTIVE COMMITTEE

Chaired by Antoine Frérot, the Executive Committee is responsible for considering, consulting and deciding on the overall direction of the Veolia Group. It meets once a month and is also consulted about the largest projects.



**1 Antoine Frérot**  
Chairman and CEO

**2 Laurent Auguste**  
Senior Executive Vice President Development, Innovation and Markets

**3 François Bertreau**  
Chief Operating Officer

**4 Estelle Brachlianoff**  
Senior Executive Vice President, United Kingdom and Ireland

**5 Régis Calmels**  
Senior Executive Vice President, Asia

**6 Philippe Capron**  
Chief Financial Officer

**7 Philippe Guitard**  
Senior Executive Vice President, Central and Eastern Europe

**8 Patrick Labat**  
Senior Executive Vice President, Northern Europe

**9 Jean-Marie Lambert**  
Senior Executive Vice President, Human Resources

**10 Claude Laruelle**  
Director of Global Enterprises

**11 Helman le Pas de Sécheval**  
General Counsel

 Governance: see 2017 Integrated Report (+ registration document available on [veolia.com](http://veolia.com)).

*Executive Committee members at December 31, 2017.*



# EN IN R THE



# GAGED ESOURCING WORLD IN 2017

# CREATING A VIRTUOUS CIRCLE FOR MATERIALS



## Photovoltaic solar Don't throw those panels out, we recycle them!

In Rousset, southern France, Veolia has set up the first treatment unit for end-of-life photovoltaic panels. The goal is to recycle 96% of the materials they contain: glass, aluminum, copper and silicon. With 55,000 metric tons of panels installed in France every year, the potential is tremendous. PV Cycle, the European eco-organism in charge of collecting the panels, selected Veolia due to its innovative treatment technology, which is unique in France. Starting in 2017, an annual 1,400 metric tons of materials will be recovered and that amount should soon increase. Veolia is planning to ramp this up to 4,000 metric tons of recovered materials a year by 2021.

## London calling An excellent package for Veolia

The South London Waste Partnership spanning four London boroughs (Croydon, Merton, Sutton and Kingston) selected Veolia to provide all their environmental services.

The program includes recycling and household waste collections, commercial waste, sale of recycled materials, street cleaning, winter maintenance and vehicle management. The eight-year contract, which is worth over £209 million (€238 million), also provides for outsourcing the Merton and Sutton services, meaning that 330 people joined Veolia in 2017.

## Back to school From old textbooks to brand new exercise books!

Offered by Veolia and the éditions Belin publishing house, the Écogeste Collèges operation collects and recycles obsolete textbooks free of charge for 6,800 middle schools in France. Given the change in several curricula between 5<sup>e</sup> and 3<sup>e</sup> Classes (equivalent to Grades 7 and 9 in the US system), almost 10 million books could be replaced. In 2016, the first year of the operation collected over 1,475,000 books. Using the recycled paper from the textbooks, around 16 million 96-page large format exercise books went back to school. Profits from the operation, repeated in 2017, went to UNICEF France to finance actions for children and education.



### Used disposable cups A touch of recycling in your tea?

In the United Kingdom, tea is of the essence! And as with coffee, people are drinking it on the go more and more often.

The problem is that it results in 2.5 billion used cups being sent to landfill every year.

So Veolia decided to offer British companies a special service with multiple options, such as bulk collection or a post-back service. Over a six-month period, a “decontamination” solution was developed with customers such as Costa and Starbucks to separate the cups from other waste. This improves the quality of the secondary raw material, which can then be reused to make new products.



## Decommissioning on the crest of a wave

With the Shell Leman BH project, we’re making a solid contribution to “resourcing the world” by reusing raw materials such as steel, copper and water. In fact, the recycling rate exceeds 99% and we’re extremely proud to be involved in decommissioning these offshore structures as we’re helping to return the sea to its natural state. Our team members are all passionate about what they do and about doing it well. They always have in mind two principles that we will never compromise on: safety and environmental impact. This is no doubt one of the keys to our performance and it’s the basis on which we provide our clients with efficient, safe solutions. There’s no better selling point than the list of decommissioning projects already successfully delivered, especially in a rapidly expanding market, such as the North Sea, where Veolia is now strategically placed. And our company has all the resources needed to provide decommissioning, recycling and state-of-the-art disposal services to all offshore platform owners in the region.

**Craig Nicol, #** Decommissioning Development Proposals Manager, UK

In Great Yarmouth, at their end-of-life North Sea platform decommissioning site, Veolia and its partner Peterson took delivery of the Shell Leman BH platform in 2017. This operation aims to recycle and reuse 99% of the structure’s 1,600 metric tons of materials.

# NEUTRALIZING EVERY KIND OF POLLUTION, EVEN THE MOST DIFFICULT

## **Nuclear cleanup** **Taking expertise** **ever further**

Veolia has brought together all its activities in nuclear cleanup in a single entity: Nuclear Solutions. The new outfit incorporates the expertise of Kurion, Alaron and Astaralis to offer the nuclear industry a full range of expertise and services: secure access to contaminated zones, waste characterization and measurement, sorting, separation, transportation, decontamination and stabilization of low- and intermediate-level radioactive waste.



## **Decontamination** **99.9%: who can top that?**

For British nuclear operator Magnox Limited, Veolia is designing and building treatment units for effluent and ponds at four of the 12 sites that Magnox is currently decommissioning. The technology deployed is similar to that used by Nuclear Solutions in Fukushima, and can treat 1,200 metric tons of contaminated water a day and remove as much as 99.9% of radioactivity.

## **Radioactive waste** **Bunkering down**

Can it be possible to access and condition nuclear waste from in-ground concrete standpipes and bunkers? Yes, it can! This is the challenge Veolia is taking up for Canadian Nuclear Laboratories at its Whiteshell site in Manitoba, which is currently being decommissioned. For this operation, Nuclear Solutions is going to use a system of robots and technologies that have already proved their worth to retrieve and sort radioactive waste at Dounreay in the United Kingdom. This latest nuclear cleanup project is one of the most ambitious in the world.

## Deconstruction

### A new life for submarines

French naval constructor Naval Group has been awarded a substantial assignment by France's Defense Procurement Agency, the DGA: the deconstruction of five nuclear-powered ballistic missile submarines. Veolia was selected for the deconstruction operations and has committed to recovering 85% of the metals and electronic components. In Cherbourg, where work starts up in 2018, cutting up the first hull is expected to take around 20 months. It will be transformed into 1-cubic-meter sections.

## Natural radioactivity

### Treatment for TENORM

Oil and gas operator Antero Resources has selected Veolia to manage sludge from water treatment recycling at its Clearwater site, near Pennsboro in West Virginia. The \$70 million, 10-year contract is a responsible mission for a difficult type of pollution – the sludge contains technologically enhanced naturally occurring radioactive materials (TENORM), which Veolia will collect and treat.

## Mining water in Australia

Springvale is the perfect example of an integrated “One Veolia” project providing a unique technical solution for treating difficult mine waste water and using it for beneficial reuse. By treating effluent from mining activities, we will free up a significant stock of water for local communities and the surrounding waterways. It's integrated in that we have managed to mobilize an extraordinary number of Veolia teams from around the world. Our colleagues in Paris supervised the plant's technical process design and validated its performance. In Sydney, there's a dedicated team focusing on the plant's construction, project management, commissioning, operations and maintenance, supplemented with key personnel from Brazil and France. While the Actiflo™ and Opus™ water treatment processes are being supplied by VWT teams in Sydney, Kuala Lumpur, Chicago and Singapore, the 3D model is being produced by VWT's office in Chennai (India) and SADE is providing Hydraulic transient studies to ensure the system is safe to operate. The key to the success here has been cooperation and determination, which has enabled us to provide a unique technical and commercial solution for our two clients. It's this type of teamwork that reflects the true strength of Veolia.

**Richard Mueller, #** Executive General Manager Technical and Innovation  
Veolia Australia and New Zealand

**Veolia will build and manage the water treatment plant for the Springvale mine and the Mount Piper electric power plant for a total of A\$400 million over 15 years.**



# TURNING ENERGY INTO A SOURCE OF PERFORMANCE

## When China channels its energy

Our teams signed three contracts in a row! It's no mean feat to win over giants of the Chinese chemicals and publishing industries. But the challenge was brilliantly taken up under the leadership of one local project manager for each project. I applaud the talent of our three managers, who together drove Veolia's impressive multidisciplinary team: the business development, marketing, technical and O&M people from the China BU, along with the Asia zone financial, technical and legal experts. This matrix organization enabled Veolia to remain flexible and agile at each step of the way throughout the negotiations. For me, it's proof that everything is possible when we work hard together to provide our clients with the added value that Veolia has to offer, even in an environment where everything moves and changes at high speed. After all, the catchword for today is let's continue to "resource the world!"

**Arnaud Bickert**, # Head of Industrial Energy & Building Energy Services Business in China

At a time when energy services are continuing to develop in China, Veolia has won three contracts for a total value of €864 million. The challenge was to maximize the performance of a data center, a biomass cogeneration and chemicals companies to bring them more easily into line with the increasingly stringent environmental regulations.





## Brussels

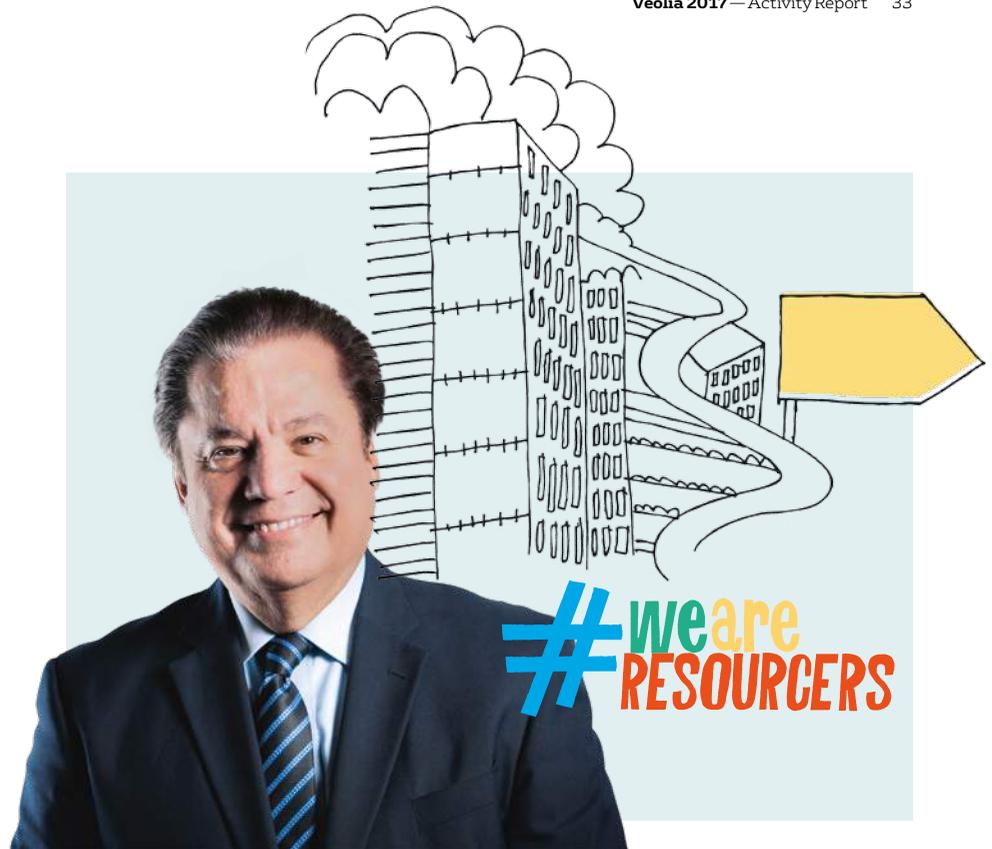
### Saint-Luc stays warm

Veolia will continue to manage the heat generation plant of the Brussels campus of the Université Catholique de Louvain (UCL). The company will also operate the heat network under a 10-year energy performance contract. The network supplies all the faculty buildings and the university clinics of Saint-Luc, Brussels biggest university teaching hospital, which has made energy efficiency part of its “Hospital 2025” strategic plan.

## Lille

### Record heat pipeline

The Métropole Européenne de Lille (MEL) interdistrict authority has awarded Covalys, a joint venture held 65% by Veolia, the public service contract to operate Antares, the authority’s energy recovery facility. Until now, the energy generated through thermal treatment of household waste only covered the facility’s own electricity needs. But from now on, 40% of the energy will directly supply two district heating networks in Roubaix and Lille. The 12-year contract is worth cumulative revenue of €295 million and will speed up MEL’s energy transition. It will also set a new record: at 19 km, the heat pipeline that will come into service at the end of 2020 to connect Antares to the district heating networks will be one of the longest in France for energy transmission.



## Winning combination in Mexico City

Mexico City dreamed it up, and our team turned it into reality. In 2020, we will commission the first waste-to-energy plant in Latin America. This is a significant feat considering the obstacles we had to overcome: market conditions, local regulations, the tendering process, and so on. Thanks to the talent and hard work of all employees involved and of our local partners, we will provide the 8.9 million residents of Mexico City with a facility that ticks all the boxes. By recovering one-third of the 13,000 metric tons of waste produced a day, the waste-to-energy plant will take pressure off the city’s landfills and generate 965,000 MWh of electricity – the equivalent of the power consumption of all 12 lines of the metro system – while significantly reducing carbon emissions. This winning combination of expertise and a collaborative approach managed to overcome all the technical, economic and environmental hurdles. As a result, Mexico City’s ambitious project is now attracting attention from other large cities in Mexico as well as Argentina, Colombia and Chile.

**Federico Casares, #** Director of Business Development and Institutional Affairs Mexico, Veolia Mexico.

Veolia will design, build and operate for 30 years the first waste-to-energy plant in Latin America for a total amount of €886 million. With a capacity twice that of the largest plant of its type in France, it will treat almost 1.6 million metric tons of municipal solid waste a year.

# GIVING WASTEWATER ITS FULL VALUE



## **Oviléo** **New generation** **wastewater** **treatment plant**

With its treatment capacity for a population equivalent of 620,000, the biggest wastewater treatment plant in northern France is also one of the most challenging. Equipped with two different treatment trains, Oviléo provides separate treatment for the wastewater and stormwater of MEL's 37 districts. In rainy weather, it is capable of pumping an hourly volume of water equivalent to that of 11 Olympic swimming pools. Located in the middle of an urban area, every care is taken to keep odors under control, with permanent monitoring and treatment of emission sources. Lastly, the plant produces biogas that is stored in gasholders and covers almost 94% of the site's thermal energy needs. Veolia is to operate this new generation plant for five years.

## **Delegated management** **Japanese style**

Veolia signed Japan's first-ever concession contract for a municipal wastewater treatment plant. As the lead company in a consortium of which it holds over 50%, Veolia has responsibility for 20 years for the wastewater treatment plant in Hamamatsu, a city with a population of 810,000 in Shizuoka Prefecture. This €450 million contract is the first public-private partnership (PPP), but no doubt not the last. The Japanese government is strongly encouraging local government authorities to think about using delegated management solutions and estimates that close to ¥21,000 billion (€160 billion) of PPPs could be signed by 2022.





### Le Mans Digesting the situation

Making full use of the energy potential of wastewater treatment sludge is the aim of the Le Mans metropolitan authority in France. It awarded Veolia a 9-year contract to operate the La Chauvinière wastewater treatment plant, where the company will build an anaerobic digester to come into service at the end of 2020. From the sludge, the plant will produce energy in the form of biomethane, which will be fed into the city's gas network. The amount produced will be the equivalent to the one used by the city's buses.



## Wastewater, a poorly exploited resource

For the United Nations World Water Day, which focused for the first time on sanitation, the international community acknowledged the central role sanitation plays in public policy. When approached as a complete industrial cycle that covers wastewater collection, treatment and reuse, sanitation can be both an answer to combating waterborne diseases (2.5 billion people still do not have access to even a basic system), and a resource to help overcome water stress. Recycled wastewater is the only resource that grows apace with economic development. Climate-related challenges and urban development are speeding up the process of taking sanitation into account, including the risks involved (extreme phenomena) and the opportunities to be gained from transforming wastewater into a resource in places where water stress is a problem. The technical solutions exist and can be adapted to local requirements. The political responsibility now rests with urban planners. They are the ones who need to break down the silos, match resources with local needs, and involve the communities concerned. Sanitation can be an extraordinary force in helping shape the city we need.

**Pierre Victoria, #** Director of Sustainable Development for Veolia

# WINNING THE BATTLE FOR WATER FOR ALL



## **Sri Lanka** **Competitiveness** **at the source**

Make agricultural land more competitive by giving it better access to water – that's what Veolia is going to achieve in the Greater Matale region of Sri Lanka. Veolia, through its subsidiary OTV, has been named project manager to build 5 new water treatment plants, 12 service reservoirs and 5 pumping stations. The new system will provide a high-quality, reliable supply to more than 350,000 people. Including clarification, settling and filtration, the treatment processes will call on Veolia's best technologies.

The €156 million contract also involves design and construction of a 433 kilometer-long water transmission and distribution network. The project has been made possible by the support of several partners.

## **Senegal**

### **Dakar treats the iron** **in its water**

The Senegalese government is earmarking an estimated of €7.6 million (4.9 billion West African CFA francs) under a program to remove iron from water in the Dakar region.

Senegal's water utility, Société Nationale des Eaux du Sénégal (SONES) is in charge of improving water quality and awarded Veolia the design-build of a water treatment and production plant in Dakar. The new plant will be able to treat 40,000 cubic meters a day. It will improve the quality of the water, which has very high iron content, using processes such as raw water aeration, physicochemical treatment and sand filtration, followed by disinfection with chlorine.





## Irma, story of outstanding solidarity

Our management of Hurricane Irma was special in many ways, firstly because of the sheer scale of the catastrophe. The hurricane was so violent that it cut off the French territory's water supply. The Foundation is certainly used to intervening in difficult situations, but in general, such situations occur in developing countries. It was also special in that we were giving support to colleagues who had been affected. On top of an emergency response to destitute populations, we had to help colleagues who had lost everything but who, despite it all, continued to work with us to get the island's water supply up and running again as fast as possible. We all felt these moments of solidarity, when Veolia came to the help of Veolia. And lastly it was special because of the volunteers' engagement. Survival rations, nights spent sleeping on the ground or in camp beds, make-do showers, and so forth. Obviously, conditions were very bad. But no one complained and everyone signed up at the end of their stay to help out again.

**Thibaut Constant, #** Emergency Response Leader, Veolia Foundation

Saint-Martin, on September 7. The day after Hurricane Irma hit, the Veolia Foundation made its expertise available to the Veolia Group's crisis unit. The desalination plant and water supply network operated by Veolia had been severely damaged or even destroyed. The first operational support was organized, emergency equipment sent out, extra experts and technicians sought – the Foundation took everything in charge. From November, 81% of households were receiving water.

# BUILDING TOGETHER TOMORROW'S WORLD

## At the Positive Economy Forum in Le Havre

The PEF's goal since 2012 is to participate in the emergence of a positive society that redirects the economy toward the consideration of generations to come. Veolia has been a partner since 2014, and for the 2017 forum, it coordinated one of eight "positive labs" on the program, focusing on deploying the circular economy in regions.



## At the UN's High-Level Political Forum

Veolia was in New York for this annual event, which brought together representatives from governments, United Nations agencies and civil society to reflect on how to implement the sustainable development goals (SDGs). Present as part of the official French delegation, Veolia contributed to a Business Forum session on the importance of collaboration. Its participation was a show of its engagement and contribution to achieving these global goals.

## At the Veolia Institute conference in Oxford

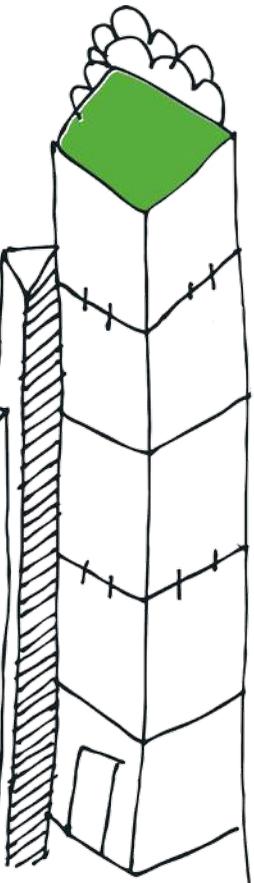
The theme of this latest conference, organized in partnership with the Oxford Martin School, was "resource availability in a low-carbon world." The event attracted nearly 200 people. The theme revealed the scale of the issues surrounding the transition to low carbon; experts from academia, politics and the business world acknowledged, as did Lord Nicholas Stern, the need for greater collaboration between the different communities of players.





**At the Women's Forum Global Meeting in Paris**

Almost 2,000 people attended the 13th edition, the theme of which was "Engage for impact! Daring to lead in a disrupted world". Antoine Frérot was a guest speaker at the plenary session, "Taking a stance: How businesses are taking the lead on social and environmental issues". He insisted on the importance of innovation for a clean, low-carbon economy and pointed out that, as well as helping drive the economy, businesses are laboratories where economic models and new technologies are invented.



**At COP23 in Bonn**

The 23rd United Nations Climate Change Conference took place in Bonn, Germany. For the first time, it was presided over by a small-island developing state, Fiji. The 2017 goal was to take another step forward in fighting climate change and putting the world on a safer, more prosperous track. During the conference, Veolia organized an event at the French Pavilion: "Resilience of the territories: together protecting and building the city of tomorrow," which recalled several recent extreme climate events in Asia, the Americas and the Caribbean. It was an opportunity to emphasize that there is no clash between mitigation and adaptation. Instead, the two strategies must reinforce one another as part of a regional strategy to deal with climate change.

**Worldwide recognition of our CSR commitment**

In 2017, Veolia met with a double success when it was included as sector leader in both the DJSI World and DJSI Europe indexes. Only 4 companies among 34 major players in the "multi and water utilities" sector and 2 out of the sector's 11 biggest players in Europe joined these indexes in 2017. With over 600 indicators analyzed, this distinction rewards the ongoing commitment of Veolia and its employees in matters of environmental and social responsibility.



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Resourcing the world  **VEOLIA**

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