

PLANET

#November 2020



SUPPORTING THE RECOVERY

FORUM

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WE NEED TO CHANGE SCALE TO RESPOND TO THE ECOLOGICAL EMERGENCY!



ANTOINE FRÉROT
CEO of Veolia

“We need to change scope to respond to the ecological emergency!” With this injunction, Jean Haëntjens, winner of our 2020 Environment Book Prize, appealed to readers of the work *Comment l'écologie réinvente la politique* [How ecology is reinventing politics], which received the award on September 12 and which I recommend reading. I entirely agree with this slogan and would opportunely add that to respond to the ecological emergency, we also have to change scale! In any event, this is the belief driving our merger project with the Suez group: it is high time to join forces in order to continue to blaze a trail in our areas of expertise and bring about a radical change for the planet over the next twenty years.

If we want to rise to the environmental challenges facing us, we are going to have to invest heavily, both to bring existing solutions into the mainstream as well as develop all those solutions waiting to be invented. And not only invest but also pool our knowledge, know-how and technologies. The years to come must be marked by an intense collective effort to conquer a new frontier: ecological transformation.

Among these solutions, which will be added to our existing service offering, I'm thinking of carbon capture and then its use to replant soils, recycling hard plastics, or recovering the rare earths and metals that make up electric batteries, whose use is continuing to develop apace. It will also be necessary to guarantee the air quality in all buildings welcoming the public, and think about new farming practices to feed ten billion humans using less water, energy and space.

A few months ago now, as part of our purpose, we established our company's road map for the decades to come, which can be summarized as

follows: preparing for the future, protecting the environment, and responding to humanity's vital needs. Behind this noble ambition lies the continuation of the work of the Hygienists who invented our areas of expertise in the mid-19th century, already with a sense that the hygiene — cleanliness — of our environment was a public health lever and a factor of prosperity. Creating with Suez — the great world champion of ecological transformation — is at once a way of remaining true to this purpose, accelerating the road map that we have set ourselves, and, as it were, walking in the footsteps of our two groups' founders, who in their day were able to innovate for the common good of humanity. Guided by the same obsession with human progress that drove them to revolutionize water treatment 170 years ago, together we will lead the ecological transformation revolution.

2020 is undoubtedly a year unlike any other. A disruptive year for the planet, conversely it must be a year of coming together for all those who can help “reconcile human beings with nature,” as the ecologist Julia Marton-Lefèvre enjoins us in “And tomorrow: double or nothing for ecology?,” the series of interviews that accompanied our lockdown. The coronavirus crisis must be a wake-up call for us all: the countdown is ticking, and if we — French-born companies and Europeans at heart — want to be involved in the battle for ecological solutions, the time for being scattered is long past. Let's answer the call right away and, together, let's build the post-2020 group for the post-2020 world!

A handwritten signature in black ink that reads "A. Frérot". The signature is written in a cursive, flowing style.

CONTRIBUTORS



JUSTINE SHUI – EDITOR-IN-CHIEF

Veolia Communications Director for the Asia zone

The war on climate change may have been a dress rehearsal for what we face now. Yet through changed attitudes and fresh political will, we can be optimistic. The ravages of Covid-19 have deeply and forever changed the way we think about our world's systems, our social structures, transport, environment and health. And perhaps for the first time in history, governments, street activists and boardrooms are singing the same tune: "Green recovery!," a passionate call to build back a cleaner, fairer and more sustainable economy.

I know many colleagues joined Veolia for the same reasons I did — a connection with nature, a commitment to our "pale blue dot."¹ So I'm incredibly proud to present this issue of Planet, outlining not only the solutions we associate with Veolia but also the inspiring leadership and confidence demonstrated by teams all over the world. Veolia's people have rewritten the book on hazardous waste in Australia, kept waste moving through China's frontline quarantine centers, and developed new solutions on virus identification in wastewater. Our skills keep us looking forward, implementing new digitalization trends, world-leading wastewater solutions in France and new waste solutions in Colombia and Finland. The rehearsal is over: we've learned our lines, the spotlight is on us, and we're giving the performance of a lifetime!

¹The phrase comes from a famous photograph taken in 1990 by the Voyager 1 space probe showing Planet Earth. The astronomer Carl Sagan found the image quite profound, and in 1994 he published a book called *Pale Blue Dot: A Vision Of The Human Future In Space*, in which he discussed our place in the Universe.

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FRANÇOIS BLAND

Director of Calanques National Park

Appointed at the head of the Park in 2013, the very first director is well versed in the question of national parks. He helped create Guadeloupe national park and steered a ministerial project to regulate the Natura 2000 network, which aims to protect European natural spaces for which the conservation stakes are high. This is a welcome development for the young park, which is the only land, marine and peri-urban park in Europe. François Bland faces a considerable challenge: protecting this exceptional natural heritage on the outskirts of a metropolis of one million inhabitants. His aim is to foster successful collaboration between local authorities and partners and, more broadly, become a gold standard for environmental policies in the Mediterranean.



ÁLVARO SANTOS PEREIRA

Director of the Country Studies Branch at the Economics Department of the OECD (oecd.org)

This Portuguese politician, who holds a PhD in Economics and has dual Portuguese and Canadian nationality, cut his teeth as a professor at Simon Fraser University (Canada), before being appointed Minister for Economy and Employment in Portugal from 2011 to 2013, in charge of a major labor reform. Since 2014, he has overseen the review of economic surveys and forecasts for OECD member countries and partners. A key role in the context of the Covid-19 pandemic. With his team, he recommends economic policies able to mitigate the detrimental socio-economic effects of the pandemic, with a view to a green recovery.



CAMILO RODRÍGUEZ

Supply Manager at Coca-Cola FEMSA Colombia

Camilo Rodriguez joined the biggest bottler of Coca-Cola products in the world (in volume terms) in 2010. Initially responsible for supplies for the South America and Brazil area, he now manages all the company's purchases for Colombia, covering some twenty cities that are home to manufacturing sites and distribution centers. It is also a way of building closer relationships with local communities near the sites and helping develop social initiatives for their benefit.



The health crisis' impact on business: how can we build a more sustainable recovery?

We meet Alvaro Pereira and Régis Calmels.



Alvaro Pereira
Director of the Country
Studies Branch at
the Economics Department
of the OECD



Régis Calmels
Veolia's Senior Executive
Vice-President of Asia

The Covid-19 pandemic and the global economic crisis that it has triggered are a unique occasion to make our economic and social models more resilient. There are opportunities to be grasped, such as the acceleration of digitalization and the local – and sustainable – optimization of companies' performance. A dialogue.

Nine months after the beginning of the pandemic, which sectors in your view are the winners, the losers, and those that are in between?

Alvaro Pereira: In many ways, we are all losers, because we are facing the biggest economic shock of our lifetime, with substantial impacts on incomes and businesses. It's both a supply and demand shock, of unprecedented proportion since the Great Depression. Some sectors are benefiting from the situation: pharmaceuticals and healthcare but also digital services, like streaming and cybersecurity. Major online distributors, like Amazon and others, have seen a substantial increase in online trading and are expected to post record profits. But others are and will be deeply affected: travel, accommodation, restaurants, and the arts. Independent workers are severely hit, just like many others who are not in a position to benefit from governmental support. For its part, the utilities sector has been less affected than many. The impact of the crisis was mostly on the demand side, as less income translates to less demand. Workers in the electricity, waste management and water services maintained infrastructure and allowed us to stay serenely at home during the first wave of the virus. And the public became aware of how critical their work is. As the second wave hits, these services are still as essential as ever.

Régis Calmels: I completely agree: some sectors have clearly expanded through the crisis; companies operating in information and communications technology (ICT) for instance, providing teleconferences and webinar services that have been widely used during the lockdowns, both by businesses and a wider public. In the utilities sector, Veolia has reinforced its position: all our stakeholders have fully understood the importance of providing continuity of essential services for populations and customers in lockdown. That was and remains the crucial mission of our sector.

What are the primary lessons in terms of the resilience of essential services and their business models?

R.C.: We observed three lessons. Firstly, the robust resilience of our business models. The second point is how Veolia delivered its services by deploying a collective effort based on a decentralized operational organization; a strong local presence supported by highly professional centralized coordination. By coordination, I mean an efficient HQ crisis committee, clear health and safety measures, and extremely efficient communications. Our third lesson points at the need to accelerate our digital systems and solutions development. Their deployment enables virtual visits to our local sites, for example.

A.P.: The utilities sector showed significant resilience during the crisis. In spite of a major shock and lockdown, there was no disruption of service or any major complaints, as the public realized the importance of these essential services. Regarding the economies themselves, resilience additionally came from governments throughout the world very proactively buffering the shock. Our capacity for recovery was also due to the good economic policymaking during the crisis. In the long run, we should prepare ourselves for other shocks. Not necessarily a pandemic, but it is always better to be safe than sorry.

Deep down, are the weaknesses identified leading to a rethink of major (environmental, climate, social and economic) issues and an acceleration of the transition toward equitable, resilient and sustainable societies?

A.P.: The pandemic will lead us to rethink many of our work practices, our organizations, and even the way in which we deal with each other. It will have a long-lasting impact as a factor for change. And the longer we stay under lockdown or the pandemic lasts, the more ingrained the change to our work habits will be. The silver lining of the pandemic in economic terms, even in societal terms, has been the fantastic

acceleration of digital practices: we'll travel less, work and hold more meetings remotely. Already a critical infrastructure, digital is now vital, as our communications — even face-to-face — rely on it. As telework is here to stay, we might not need as much office space as we used to: offices will be used for group or business meetings. Some firms already use online solutions extensively. Many companies have understood that if they don't invest substantially in digital, going forward to interact both with their customers and their suppliers, they will lag behind and lose.

R.C.: Digitalization has indeed appeared as a key resilience factor for most organizations. Furthermore, the pandemic has revealed to many stakeholders the need for a transition to more resilient, equitable and sustainable societies. Through its purpose, Veolia had decided to do so, well before the crisis erupted. Resilience, fairness, inclusivity, and sustainability are at the heart of the Group's culture and its strategic "Impact 2023" program. In Asia, our business is well balanced between our activities for local authorities and our activities for industrial clients. As the risks of these two activities are complementary, the crisis will not fundamentally change our regional "Impact 2023" implementation. On the contrary, we are accelerating the roll-out of our internal tool processes and digital solutions. We are stepping up the deployment of the 18 priority objectives in Veolia's Purpose — including reducing GHG emissions, increasing plastics recycling, and improving people's access to water and sanitation — along with our multi-faceted performance across all our teams and projects, to achieve our ecological transformation ambition.

How do businesses anticipate the changes and find new opportunities?

R.C.: This crisis will generate new standards and practices. Businesses are showing strong innovation capacities. Efficiently structured and digitally operational companies that are fully committed to working with agility and creativity are geared to benefit from new opportunities during and after the crisis. As the world leader in ecological transformation, Veolia is one of them. At the heart of the crisis over the past months, we have been able to make progress and in Asia, for example, negotiate the renewal of important contracts: in Korea with LG Lotte and Kumho, and in Hong Kong with the local authorities concerning the region's Hazardous Waste Treatment Plant.

“The silver lining of the pandemic in economic terms, even in societal terms, has been the fantastic acceleration of digital practices.”

Alvaro Pereira

Our local teams are well organized and empowered to make decisions in close connection with local authorities — which is crucial for our stakeholders. When a crisis arises, our people know how to react and act locally, while global coordination continues to be ensured at our crisis committee headquarters. For all these reasons, I'm confident that the crisis is presenting us with strong opportunities to accelerate our development over the short and the long term.

A.P.: There will be tremendous new business opportunities. Everybody started buying online goods during lockdown. We changed the way we purchase our products and interact with companies and even with governments. Changes in business standards and work practices will last, even if it takes a while to complete them. We are at the beginning of an era of major transformation.

Which measures made it possible to avoid economic collapse and what further actions would provide a sustainable solution to the effects of the crisis?

A.P.: Governments' first reaction was to introduce exceptional measures. Short-time work or job retention schemes would have been unthinkable in major countries, like the UK, a few months ago. They were a reaction to "stop the bleeding" before the situation got out of control. Without those measures, we would be embroiled in major economic and social crises by now, with millions of unemployed and hundreds of thousands of businesses failing. Substantial packages were brought forward. Central banks stepped out of the box, reducing rates when they could, injecting money into the economy or providing liquidity. Policies unheard of in usual economic circumstances were enacted on a large scale, all across the world. ▶



“At the heart of the crisis, we have been able to make progress and in Asia, for example, negotiate the renewal of important contracts.”

Régis Calmels



The next step involved countries designing economic recovery plans. This is our current stage, despite a second wave of the pandemic.

Once the pandemic is over, with an effective treatment or a vaccine, the priority will shift to recovery plans, to the public investment and reforms required for improving our countries and our societies. Very few countries are in this process today. In a year or so's time, many more will be discussing reforms. After emergency measures and recovery plans, reforms and economic policy will aim at providing sustainable solutions to avoid massive economic crises ahead.

R.C.: Indeed, many exceptional measures have already been implemented by governments in many countries to support the sectors hit by the crisis. The European Union has shown a dynamic approach to some industries of the future. Similar initiatives have been taken in China, the US and other countries. Agile and innovative companies, willing to improve their operational efficiency while respecting environmental, climate, social, and economic commitments, will provide a key contribution to durably resolve the effects of the crisis.

What is the economic outlook identified for a company facilitating access to essential services like Veolia?

A.P.: A company having provided essential, critical services at the height of the biggest health and economic crisis we have known will be regarded differently in the future. Policymakers are certainly conscious of this shift and are also thinking: "In the third stage of economic policymaking, how can we achieve a more environmentally friendly and sustainable recovery?" The focus on sustainability — on providing water and energy and managing waste in a sustainable way — will be a large part of their agenda. A company like Veolia can either seize the opportunity... or be surpassed by more innovative competitors.

R.C.: As well as confirming the resilience of our current model, the crisis leads us to further optimize water and energy resource management and encourage waste recovery activities. Saving global resources is a key challenge and at the core of Veolia's businesses and Purpose. And I can assure you, we will not be found wanting.

What would be the right way to think about 2021 and beyond for an essential services provider like Veolia?

A.P.: If we discover an effective treatment or a vaccine

“The crisis leads us to further optimize water and energy resource management and encourage waste recovery activities.”

Régis Calmels

against Covid-19, we are going to see a substantial improvement in expectations. People and businesses will feel a lot more confident; consumption and investment will resume. Let's hope this happens in 2021; it might not. As a company, you need to be prepared for both scenarios: additional waves of the pandemic or a medical breakthrough making it possible to resume business as usual.

In the latter scenario, it will be a good time for essential service companies and other strategic providers to start thinking: "Okay, how can we learn the lessons from the pandemic in terms of work practices, teleworking, in terms of dealing with our customers and suppliers? How can we take the lessons that we learned over the past months to change our business so that it becomes more profitable, hopefully, but also more sustainable?" This is the key challenge, and should be the main strategic focus going forward into 2021.

R.C.: If the pandemic is brought under control in 2021, we certainly expect business to pick up rapidly. Raising mobility issues and the difficulties of organizing meetings with partners and potential clients, the crisis delayed some of our new projects in 2020. Some developments were postponed, but new opportunities also emerged out of the crisis. We are continuing to make progress on many items, including our "Impact 2023" objectives. Regardless of when the recovery is complete, we are geared to anticipate our markets' evolution. I agree that sustainability is now more than ever a central question for public authorities and businesses, and even more so where essential services are concerned.

In this context, the key words that come to mind for 2021 and beyond are, as ever: agility, creativity and efficiency. ■

The long road to the Canadian Green New Deal

More than a decade after its first federal green economic stimulus package (Global Green New Deal, GND) in 2008, Canada put forward a new Pact for a Green New Deal (PGND) in May 2019. Coming from a broad grassroots coalition of scientists, trade unionists, citizen groups, indigenous peoples, etc., it demands that the federal authorities make a greater effort to meet the greenhouse gas (GHG) emission reduction goals set by the Paris Agreement¹. In other words, reducing national carbon emissions by 30% (compared to 2005 levels) by 2030 in order to reach carbon neutrality in 2050². These efforts target 100% renewable energy, eliminating all oil production from bitumen sands, and halving national GHG emissions by 2030³. The reward will be the creation of over a million jobs. The stimulus package also aims to reduce isolated populations' high

dependency on fossil fuels. These populations still largely rely on off-grid energy systems primarily powered by diesel-fired generators. At present, the goal of reducing GHG emissions is difficult to achieve, as they have increased by eight million metric tons in the country between 2016 and 2017, according to the Quebec daily newspaper *Le Devoir*⁴. The federal government is also relying on CO₂eq⁵ capture and storage technologies to solve this complex equation in the short term, thus meeting its international climate commitments.

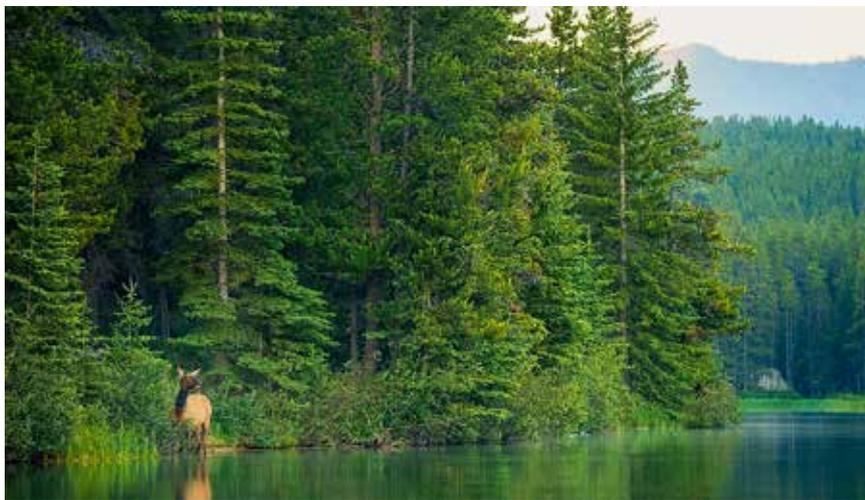
¹ Canada is a signatory of the Paris Agreement. See also trend note "An inclusive green deal for Europe" for a recap of the goals of this agreement.

² *Progress towards Canada's greenhouse gas emissions reduction target*, Ministry of Environment and Climate Change Canada, 2020.

³ *Canada's Green New Deal: Forging the socio-political foundations of climate resilient infrastructure?*, Science Direct, July 2020.

⁴ *La cible de réduction des GES du Canada respecte-t-elle l'accord de Paris ?* *Le Devoir*, Oct. 2019.

⁵ Carbon dioxide equivalent (CO₂ equivalent or CO₂-eq) is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP). Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Carbon_dioxide_equivalent/fr



In South Korea: a Green New Deal that banks on hydrogen and digital

The South Korean government is planning a 30-billion-euro (42,700-billion-won) budget increase for the first five-year green plan (113.6 billion euros — 160,000 billion won) launched in 2017 by President Moon

Jae-in. Announced in July 2020, this political decision is set to both revitalize the national economy, which has been hit by Covid-19, and accomplish the goals of the Paris Agreement. Like the European Union, the Republic of Korea is looking to achieve carbon neutrality by 2050. These additional funds aim to increase the share of renewables in the energy mix from 20% in 2030 to 30-35% by 2040: 6.532 billion euros (9,200 billion won) will be devoted to this. In the longer term, the public authorities wish to rely on a hydrogen

An inclusive green deal for Europe

In her first speech on the State of the Union¹, the President of the European Commission, Ursula Von der Leyen, detailed its climate ambition to MEPs: reducing greenhouse gas (GHG) emissions by at least 55% by 2030 compared to 1990 levels, in order to reach carbon neutrality² by 2050³. Some 37% of the 750 billion euros marked for the post-Covid European stimulus plan will be devoted to the European Green Deal. "And 30% of this 750 billion euros will be raised via green bonds," added the President. European climate legislation, expected by summer 2021, is set to turn this political commitment into a legal obligation. The road map breaks down the main areas for action: protecting ecosystems, guaranteeing a more sustainable food chain, ensuring a low-carbon approach in the energy, transport, farming and construction sectors. As well as thermally renovating buildings and developing new zero-carbon energy sources. And finally, eliminating pollution more quickly and effectively. This vast program was subject to a three-month public consultation (April to June 2020). This served to involve stakeholders from citizens to manufacturers in drawing up inclusive legislation, thereby increasing the chances of success of this action plan, which aims to make Europe the first climate-neutral continent by 2050.

¹ Plenary session of the European Parliament in Brussels, September 16, 2020.

² Balance between greenhouse gas emissions and their absorption.

³ Goal required by the Paris Agreement, 2015 (COP 21). Sources: What is the Paris agreement, UNFCCC and https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_fr

economy. This means building enough production plants for this fuel to be able to produce 500,000 vehicles by 2030, intended both for export and to meet the domestic demand for zero-carbon mobility. Mr. Moon Jae-in is also banking on a digital economy by 2025. Ultimately, the government is aiming to create 567,000 jobs in these high value-added sectors of activity.

Sources: <https://thediplomat.com/2020/05/south-koreas-green-new-deal/0/>; <https://www.bloomberg.com/news/articles/2020-07-14/green-new-deal-in-south-korea-stops-short-of-zero-carbon-target>

Above and beyond Meeting Veolia employees from all over the world

Take a collective approach: a motto shared by Claudia, responsible for sulfuric acid regeneration in Texas, and Ahmed and Jean-Philippe, involved in waste management for the city of Paris.

Claudia Lopez

*Manager of
a spent sulfuric acid
regeneration facility*

While she introduces herself as “a mother, a woman, a wife, and a plant manager,”

Claudia has no bones about revealing that she is completely and single-mindedly dedicated to each of her roles. And her 27 colleagues — 26 of whom are men! — would certainly not disagree...

Claudia has a long history with El Paso. This lively thirtysomething left the city at the age of 18 to follow chemical engineering studies in Indiana. After 11 years in the food processing industry, she returned there to complete her education with an Executive MBA and start a family.

Appointed manager of Borderland's spent sulfuric acid regeneration facility in 2018, she puts into practice her convictions and expertise in terms of the circular economy. The plant backs onto its main client, Marathon Petroleum, which uses sulfuric acid as a catalyst in the crude oil refining process. Veolia recovers the acid gas from the refinery and extracts the sulfuric acid from it, regenerating it to sell it back to the refinery. This allows the client to reduce both its environmental footprint and its costs. “Out of the 450 metric tons of acid treated each month, 230 return to Marathon. The surplus goes into our local industrial ecosystem,” explains Claudia.



Borderland
El Paso (Texas) – USA

At the helm of a plant operating 24/7, 365 days a year — “if we want to close, we have to give the refinery six months’ advance notice!”,

Claudia aims for excellence when it comes to its production. Her golden rule: scrupulously following the safety measures inherent in the treatment of a waste material considered to be highly toxic, not forgetting the ongoing drive to reduce sulfur dioxide emissions, which are currently below the industrial thresholds. A real challenge for this windowless ‘pocket-sized’ plant, where the slightest maintenance operation turns into an organizational headache.

It therefore comes as no surprise that the reliability of the facilities — which must contractually reach 98% — is Claudia's number one priority for 2021. If the refinery's production lines shut down for a long time, this could affect the leak tightness of the plant and risk having acid leaks. “Our operations are closely linked to those of the refinery, and if we had an extended unexpected shutdown, it would cost millions of dollars in contractual penalties!” she reveals.

Hence the importance of the close working relationship fostered with the manager of the refinery: “It's like a team within a team. We share our strategies, road maps and innovation ambitions for the oil sector.” This close-knit management style made discussions and decision-making much easier when the Covid-19 crisis hit. “The slightest problem is potentially serious here and it is important to collectively contend with the hazardous environment in which we work,” concludes Claudia.





Moving mountains in China's medical waste business

On January 23, 2020, the world had not yet plunged into the disaster scenario of Covid-19. Yet the virus was already wreaking havoc in China. It was Lunar New Year's Eve, which sees a huge migration of people each year. To stop the diffusion of the virus, several areas had been put into quarantine. In Zhejiang Province, the local authorities appointed Lijia hazardous waste treatment facility in Hangzhou, run by Veolia, to manage the mountain of infectious medical waste from several coronavirus hotspots.

January 2020: the last “business as usual” days for the planet yet Covid-19 was barely making international news. Outside mainland China, only SARS-hardened Hong Kongers were wearing daily masks. Just a handful of cases had spread into the wider world.

Within mainland China, of course, it was a different story. Authorities were already fighting tooth and nail to contain this new and contagious virus. Wuhan was in a total lockdown. And some 350 miles east of Wuhan, nestled in the scenic lake environment of Hangzhou, one of the eastern

seaboard's largest hazardous waste facilities was gearing up for the mightiest challenge of its career.

Pandemic strikes at waste peak

“Lunar New Year, China's largest human migration, is already peak time in the



ISSUE AT STAKE

A fast-moving hazardous waste situation without protocol or precedent, due to the health crisis, exacerbated for many firms by the staff shortages over the Chinese New Year holidays.

OBJECTIVE

Protect public health and demonstrate leadership and confidence while tackling the monumental task of timely disposal of fast-mounting hazardous waste.

VEOLIA SOLUTION

A 24-7 service pledge and level-headed professionalism set effective boundaries between clinical and non-clinical waste and handle near-doubling of volumes.



KEY FIGURES

- New medical waste streams predicted in China in 2020: **179,000 metric tons**
- Staff typically on leave during Chinese New Year: **40%**
- Waste disposed from Hangzhou Medical Observation Point and quarantine zones and treated by Lijia, Jan-Sep 2020: **1,937 metric tons**
- Plant capacity during peak Covid-19 operation: **145%**

waste resource business,” explains Dai Bing, General Manager of the Hangzhou Lijia Hazardous Waste Treatment Facility, managed by Veolia. Millions of businesses, from mom-and-pop shops to global tech firms, go into overdrive with spring cleaning routines. “And many waste facilities shut down for weeks, leading to a peak before the holidays,” says Dai. As an international joint venture serving industrial clients who do not have the luxury of shutting down for lunar holidays, Lijia made a practice of maintaining full capacity over the New Year period. As such, when Covid-19 struck the heart

of China, Lijia was one of few plants in the region running at a full speed.

Circular economy professionalism restores confidence

While recycling was the furthest from anyone’s mind at this time of crisis, the adoption of Veolia’s circular economy principles of waste as a resource gave Lijia a sound footing for managing the crisis. The firm quickly emerged as a leader in the province, formulating actionable advice for the government including the movement, transfer, handover, tracking and reporting of these new waste streams, assuaging

government fears over contaminated waste comingling with domestic waste streams, and attaching a calm, professional confidence to the whole operation, which extended into government policy. The Zhejiang Multi-Level Emergency Command Department drew on the policies and recommendations of plant management as government and corporates navigated the situation. On the ground, Veolia’s emphasis on a safety culture kept operations not only professional but also calm — without panic or fear. Personal protective equipment (PPE) was in short supply the world over, but a careful and rational approach — and support from

AGILITY MEANS NEW BIOCLEANING OPPORTUNITIES

The Hollywoodesque sight of operatives clad in white biohazard suits spraying down supermarkets or bus stations would have sparked mass public panic in pre-Covid-19 times, but today such cleaning crews are commonplace in shops and offices across the world. As businesses work to narrow down the locus of Covid-19 risk, disinfection of potentially contaminated surfaces and spaces is a frontline defense: effective,

visible and even comforting to residents and workers. Veolia’s French subsidiary STPI adapted quickly to provide basic training and services in biocleaning floors and work surfaces, as recommended by the High Council of Public Health and the Ministry of Solidarity and Health. Moreover, the Group leveraged the expertise it has acquired into an opportunity to serve more everyday facilities, packaging a new business offer

that covers the disinfection of indoor spaces, the treatment of priority outdoor areas, the securing of the air-handling systems and the flushing and disinfection of water networks. One of the first clients was the French defense giant Naval Group. The team has been in action since the earliest days of the pandemic in France, with deep biocleaning at the Naval Group’s headquarters as well as strategic sites in Brest, L’Ile Longue, Indret, Ruelle,

Bagneux, Toulon and Saint-Tropez, managed by Défense Environnement Services, a joint venture between Veolia and Naval Group. SARP, another Veolia subsidiary acting as DES’s subcontractor, regularly disinfected Naval Group’s locker rooms on the Toulon site. The adaptation for Naval Group has delivered some other benefits, too: the deep biocleaning of air-conditioning vents has improved air-conditioning efficiency and reduced energy costs.



Veolia teams globally — assuaged fears of running out. The plant at first controlled the use of PPE, delimited hazardous zones and implemented new protocols for different areas. Using PPE appropriately reduced operational risks while preserving critical stocks. The firm even provided PPE assistance to some government agencies.

Ramping up

Within a few days of its appointment by the government, Lijia was handling double its usual waste. What's more, the government required all medical waste to be handled within 24 hours instead of 48, which meant a shift in its incineration mix and doubling the pre-treatment workload. "With the facility working outside all expected parameters, senior management stepped onto the frontlines to support and ensure safe working hours," says Dai, "and to boost morale and confidence."

Veolia's solution demonstrated to the client and government the flexibility and skill to adapt waste volumes treatment in these times of crisis. Management, training and technical expertise all played a part in deploying the capacity upgrade. From Chinese New Year to early September, the facility trucked in and disposed of almost 2,000 metric tons of waste from Hangzhou Medical Observation Point and the province's quarantine zones — on top

of its usual peak season hazardous waste processing work.

Dai Bing says the efforts are a testament to the staff and operational professionalism of the plant. But is such a peak sustainable? According to him, the plant changed gears smoothly and under full control — this was no pell-mell dash leaving the plant and its

workers exhausted and spent. "We now know such operation is sustainable," he says. As a franchise operation, the levels of waste handled by the plant are fairly predictable, set by government and clients: but at least, he says, "we know we have the ability to break through when required." ■

CLINICAL OR DOMESTIC? VEOLIA EXPERTISE CUTS THROUGH THE WASTE DEBATE

As a clinical waste contractor, Veolia delivered logistic and strategic support to its health clients and the government throughout the Covid-19 pandemic.

Tim Lee, Veolia's National Sales & Business Development Manager — Health Industrials, Australia and New Zealand, is also chair of the Australian Biohazard Waste Industry group, which, he says, aimed to provide pragmatic and considered advice to government, industry and frontline healthcare staff.

At the early stages of the pandemic, in Victoria and South Australia for example, the definition of Covid-19 waste streams was complex, with variances

across the accepted and unaccepted waste streams from site to site. "We felt that there was room to help the industry and our customers align definitions and streamline processes around biohazardous waste management in relation to Covid-19," says Lee. "Our aim was to put in some very simple and practical measures for frontline staff to take so they could feel protected and that Covid-19 waste was prioritized properly," says Lee. The PPE-heavy waste consisted mainly of masks and gowns that were problematic for clinical waste shredders to process. "Our commitment to the safety of our customers and

the community was that untreated landfilling was not suitable, so we applied for new storage licenses to cope with the increased demand and slower processing times," says Lee.

For its customer focus and support during the crisis, Veolia received the "Above and Beyond" award from South Australia Health on November 12.

Reflecting on the early weeks of the pandemic, Lee says, "It was uncharted territory, so we took an evidence-based approach, delivering flexible workforce solutions and working closely with our customers to deliver safe, sustainable and cost-effective treatment and recovery."



Making a difference for Coca-Cola FEMSA

When Veolia began a new contract with Coca-Cola FEMSA in Colombia earlier this year, not only did it have to implement it without disruption, it had to do so during a Covid lockdown.

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No one would have believed in the last months of 2019 that Veolia would start new recycling and energy contracts with Coca-Cola FEMSA Colombia in 2020 during a lockdown caused by a global pandemic. But that is exactly what happened. In Colombia, the government implemented very strict restrictions in March and did not lift the lockdown until September 1. “We began operations on April 1 to provide services nationwide to Coca-Cola FEMSA in the midst of an adverse environment,” says Veolia in Colombia’s Chief Executive Officer, Oscar Garcia. “Covid-19 imposed a great challenge for us that we did not foresee. We began operations in a very complex and adverse landscape, where we had to hire 78

employees amidst mobility and availability difficulties. But thanks to the right definition and identification of profiles, biosafety measures (including PCR testing), and plans to guarantee continuity defined by Veolia, we were able to carry out operations that meet the high standards and demands of the food and beverage sector.”

Normal times

When Veolia in Colombia started bidding for the contract 15 months before it was due to begin, Coca-Cola FEMSA wanted a total waste management service that would serve its seven bottling plants and 19 distribution centers across Colombia. After winning a commercial bidding contract based on its technical expertise,

value for money and alignment with Coca-Cola FEMSA’s goals, Veolia planned to introduce a solution where all the materials generated during the production process in the bottling plant, such as paper, wood, glass and steel, would be transformed into new elements, such as toilet paper, wooden pallets, glass windows and structural steel. It would all be traceable and recycled locally as much as possible, while being competitively priced. Veolia would also deal with any hazardous waste such as industrial chemicals and containers from the manufacturing sites.

Trigeneration from a single source

Plans were also being developed — and are continuing despite Covid restrictions — for an energy self-sufficiency project in the



ISSUE AT STAKE

Starting a major new contract with Coca-Cola FEMSA Colombia during the Covid-19 pandemic.

OBJECTIVES

Introducing a recycling and energy solution for Coca-Cola FEMSA Colombia.

VEOLIA SOLUTION

Activating the continuity plan and re-organizing the teams in order to successfully meet Coca-Cola FEMSA's recycling and energy needs with the extra challenge of a Covid lockdown.



KEY FIGURES FOR THE VEOLIA COLOMBIA CONTRACT WITH COCA-COLA FEMSA

- **7 Coca-Cola FEMSA bottling plants** in Colombia and **19 Coca-Cola FEMSA distribution centers** in Colombia
- **78 Veolia employees** embedded in these Coca-Cola FEMSA facilities
- **More than 1,000 metric tons of material** - including glass, paper, metal and wood - transformed from April to August 2020

production process at Coca-Cola FEMSA's Barranquilla plant, as part of a contract signed in 2019. This involves the trigeneration of electrical energy, process steam and cold water from a single fuel source, in this case natural gas. The electrical energy will be produced by two 1475-kw generators. With the exhaust gases from the generators, water will be preheated to produce steam through an industrial boiler. The cooling water from the radiators will be used for chilling purposes via an absorption chiller.

Covid-19 rapid response

Flawlessly implementing the service was always Veolia in Colombia's goal. During normal times, this would require Veolia's expertise in ensuring there was no disruption to the client, but with Covid-19, this process required additional flexibility, a rapid response and resourcefulness from the Veolia team. "Without a doubt, the situation resulting from the pandemic brought enormous challenges for everyone," says Coca-Cola FEMSA Colombia Supply Manager, Camilo Rodriguez. "For Coca-Cola FEMSA, it was key that Veolia understood our needs and could adapt its operation and business model to the new reality we are living. The alignment and control of all the materials we generate has been very important."

Despite the situation, Veolia met the recycling contract targets required by

Coca-Cola FEMSA Colombia without disruption to its business. "Veolia is a strategic partner that understands the dynamism of this market and is able — through its experience and measurement tools — to deliver an impeccable waste management service," adds Camilo Rodriguez. "One of the key points was how Veolia adapted to the pandemic. It was agile to start operations and make a connection in the middle of a difficult situation."

For Veolia, implementing this new contract during the Covid-19 lockdown has been a learning experience. Oscar Garcia explains: "Veolia in Colombia sought to respond to the crisis quickly based on two principles: maintaining flawless

operations for our customers and protecting the health and safety of our employees with all the necessary biosecurity measures. To this end, we learned to make quicker decisions by empowering our staff and seeking to quickly understand changes in the market. In the case of Coca-Cola FEMSA, its consumers' consumption patterns changed in such a way that, for example, the consumption of water and other products in family-sized containers increased, which forced us to make rapid changes to the collection center processes. In some cases, prices had to be renegotiated for the sale of materials. We quickly adapted our operating processes in response to the customer's request." ■

TRIGENERATION WITH BASF IN FINLAND

Veolia is showing the value of collaboration, working with the chemicals company BASF to build a trigeneration plant in Finland.

Veolia's Finnish subsidiary, STEP, will finance, build and operate a new plant to deliver industrial utilities to BASF's chemicals plant in Harjavalta. Under the agreement, STEP will construct a new steam, water and compressed air plant with associated infrastructure in

Harjavalta industrial park, where BASF has established a cluster to produce raw materials for electric vehicle batteries. The contract is worth almost €240 million and represents an important milestone in Veolia's Impact 2023 strategic plan. STEP's Senior Vice-President of Utility Solutions, Tomi Ihalainen says: "This is a fantastic vote of confidence from BASF and further

confirmation of our ability to develop solutions that help optimize our clients' costs while providing a lower carbon footprint. It is also an honor for STEP and Veolia to be part of developing the battery cluster in Harjavalta. Our new facility will make a direct contribution toward making electric vehicles part of everyday life for an increasing share of the world's population in the future."



**INTERVIEW WITH
CAMILO RODRIGUEZ,
SUPPLY MANAGER
AT COCA-COLA FEMSA
COLOMBIA**

"Shared goals"

Globally, Coca-Cola FEMSA and Veolia share the goal of being a key part of the circular economy and this is integral to the new contract in Colombia. "At Coca-Cola FEMSA, we are committed to the global objective of not only collecting and recycling 100% of our packaging material placed on the market by the year 2030 but also properly managing the usable materials that we utilize in our operations," says Coca-Cola FEMSA Colombia Supply Manager, Camilo Rodriguez. "To this end, it is key to work on developing strategic alliances that allow us to give a new lease of life to the waste derived from our production."

For Veolia in Colombia, this means a focus on treating the usable materials generated by Coca-Cola FEMSA's production process as sustainably as possible. "Our main effort is based on unifying operations at a national level, ensuring that the materials received go to the final transformer. Our greatest challenge today is optimizing the value chains, seeking the greatest value for the client and ourselves. With this in mind, we work with traditional recycling networks to identify best practices for transforming materials." This means that Veolia in Colombia uses its expertise and network of recycling facilities and markets to ensure that materials are recycled as sustainably as possible as part of the circular economy.





Marine effluent discharge: an update that changes everything

Viewed as one of the hubs of global alumina production, the Alteo plant located in Gardanne (Bouches-du-Rhône) hit the headlines several years ago with its red sludge, which it has since stopped discharging into the sea. Coming under criticism once again for its industrial water — which also ends up in the Mediterranean, it turned to Veolia, which came up with a biological treatment unit using bacteria to break down suspended organic matter. A first in more ways than one.

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Sormiou and its white sandy beach, crystal-clear water and almost century-old huts where time seems to stand still. Sugiton and its famous “Le Torpilleur” torpedo boat-shaped rock, from which thrill-seekers eagerly dive into the sea. En-Vau, whose towering cliffs are worth the two-hour walk from Cassis. There is an endless list of these enchanting names that delight fans of the

Mediterranean all year round and continue to play a starring role on the region’s postcards. Created in 2012, Calanques National Park is tasked with protecting and preserving these gems. In 2015, this role in safeguarding natural land and marine heritage was instrumental in stopping Alteo from discharging bauxite residue, which for decades used to end up off the coast of Cassis. Following this infamous “red sludge”

episode over which so much ink was spilled, the alumina production plant has continued its efforts, acquiring two effluent treatment plants. The first self-managed plant was inaugurated in 2019. Its little sister is none other than a solution devised by Veolia’s teams. The aim is to bring the quality of its water up to standard, a move that was “quite simply vital. Plainly speaking, we were threatened with a prefectural





ISSUE AT STAKE

Improving the quality of Alteo's effluents before they are discharged into the sea in Calanques National Park, in order to meet the most demanding standards.

OBJECTIVE

Provide a sustainable solution for a long-standing manufacturer in the Provence-Alpes-Côte d'Azur region threatened with closure by a prefectural decree.

VEOLIA SOLUTION

A biological treatment plant installed on site that provides a rapid response, allowing Alteo to demonstrate its ability to maintain its presence in the region with future-oriented solutions.



KEY FIGURES

- The two plants have a treatment capacity of **300m³ of water per hour**.
- Calanques National Park welcomes between **1.5 and 2 million visitors** (by land and sea) each year.
- There are **60 patrimonial marine species** and **140 terrestrial animal and plant species** protected in Calanques National Park.

decreed that could have put a complete stop to our activity,” recalls Frédéric Ramé. For Alteo’s CEO and his team, it was therefore “crucial to find a partner specializing in water treatment able to implement a previously unheard-of solution in our industry. And all this within a very tight timeframe.”

A comprehensive turnkey solution

Industrial effluents sufficiently clean and oxygenated to be discharged all year round, whatever their volume or grade: for many long months, this was the goal for Anne-Laure Galmel, Project Manager for the Mediterranean region at Veolia France Water. “Set up right at the heart of Alteo’s long-standing site, the treatment plant that we have created runs on biomass. In other words, we have reproduced what happens in nature, using bacteria that ‘eat’ pollution.” This is followed by a physico-chemical treatment for decantation and another ‘finishing’ treatment to remove any remaining suspended matter on filters. What prompted Alteo to choose Veolia’s proposal? “The fact that it was a turnkey solution. Because, over and above the technology, they talked about implementing and managing the site, constant support, and guaranteed operation/maintenance for three years,” says a delighted Frédéric Ramé.

Effective collaboration

The solution’s robustness, longevity and expertise are due to the fact that it very

quickly became the focus of concerted efforts between the Business Support and Performance Division, France Water’s Technical Division, OTV DBI (Design & Build for Industry) and the Bouches-du-Rhône - Val de Durance region for Veolia, and Alteo. An initial phase from late 2016 to late 2018 allowed two pilots to be rolled out, which were tested on site for two months in 2018. “Having such seasoned and consistent contacts — including a Marine discharge project manager accustomed to environmental problems — made our collaboration with Alteo much smoother. We felt that they were really motivated to implement the project,” praises Anne-Laure Galmel. In early 2019, Veolia presented a preliminary draft of the solution that ultimately convinced its partner. In the end, it took fourteen months, lockdown included,

to design and build the facilities commissioned over the summer. “It was a complicated situation, but all those involved were able to rise to the challenge. Like us, Veolia’s teams adapted. Their dedication and ability to make the right decisions played a key role,” confirms Frédéric Ramé. The result: discharge water of unprecedented quality. “It’s a first, both for Veolia, which hadn’t treated this type of effluent before, as well as the industry, which had never before achieved such high-quality water exiting the plant. Since last July, we are well below the required thresholds,” observes Anne-Laure Galmel, who hopes that this project will inspire other entities in the Group. In the meantime, beach hut dwellers, divers and walkers in Calanques National Park can sleep soundly... ■

CHINA: ARTIFICIAL INTELLIGENCE IN THE SERVICE OF WATER QUALITY

The time taken to check the water stored in cisterns (secondary supply network) has been reduced from 10-20 seconds to... 0.49 seconds. This performance leap is down to the AI Audit System, making it easier to clean the tanks managed by urban communities in the district of Pudong (Shanghai). This concept designed by Shanghai Pudong Veolia Water Corporate Limited relies

on artificial intelligence (AI) to analyze the photos from the water tanks. Set up last April — right in the middle of the health crisis — and operating non-stop, this verification system helps improve the cleaning work’s organization and — logically — its efficacy. This has led to a 10.22% rise in the cleaning operations’ success rate and a qualified rate of water quality after cleaning of 100%!

It has been a godsend for this region with over five million inhabitants, where regulations stipulate that water tanks must be cleaned twice a year. Since the introduction of this audit system accelerated by AI, no fewer than 27,000 tanks have been checked. It’s no surprise that the city of Shanghai is planning to adopt this solution for all its check-ups...



INTERVIEW WITH FRANÇOIS BLAND, DIRECTOR OF CALANQUES NATIONAL PARK

“Continued efforts”



After years of discord about marine discharges, are you now entirely satisfied with the solutions implemented?

F.B.: It is true that Alteo's activity has always crystallized tensions and questions regarding the impact

of marine discharge on pollution and human health. Calanques National Park is a new regional stakeholder and since its creation has been part of the history of major industrial pollution linked to waste disposal by the Gardanne alumina plant. In 2014, its Board of Directors imposed a drastic reduction in pollution and decreed that the plant's discharge at the heart of the national park's marine area should be made compliant within six years. This goal has now been met and tensions have relatively eased. The results are therefore unquestionably encouraging. All the same, the National Park continues to strive for strong, rapid progress. The treatment plant installed by Veolia on Alteo's site proves that industry can adapt, and this type of integrated, high-performance and

comprehensive solution could be applied elsewhere.

How does this industrial wastewater biological treatment unit guarantee an essential activity for the local economy, while protecting Calanques National Park's environmental heritage?

F.B.: First of all, it shows that a protected area can be part of a major region, taking into account its history and economic life. By avoiding positioning itself 'as a matter of principle' against any discharges — which would have meant closing the Gardanne site, the National Park showed that its action took socio-ecological interdependencies into account, quickly leaning toward a zero pollutant discharge solution. The economy and the ecology are not in opposition and we must welcome

manufacturers' efforts to adapt their facilities, without calling into question their performance, when considering the marine environment.

Do you think that the Alteo-Veolia project can be duplicated?

F.B.: I think that Alteo's initiative can become a benchmark both in terms of the approach and developing the techniques. The National Park's context allowed things to evolve quickly. It made it essential to research and implement the best techniques available, which can now be exported to plants treating the same types of ore. Calanques National Park's long-term goals? Continuing to work with Alteo, why not aim for zero marine discharge by pairing alumina production with recycling water in the plant...



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Veolia's digitalization with a human face



On the strength of a digital transformation that is already well underway, Veolia has adapted to the constraints of the Covid-19 crisis with agility, performance and reliability, with no interruption to its essential services management. The Group has successfully readjusted its practices, demonstrating its ability — both on a human and technological level — to be a benchmark player in the ecological transformation.

The Covid-19 health crisis has confirmed to all the urgent need for a global ecological transition. Regions' future will be resilient and carbon-free, or there will be no future at all. Whether local authorities, tertiary or industrial companies, Veolia's clients have fully grasped this, and we are now witnessing a reinforcement of the green component in all economic recovery plans. This is good news for Veolia, whose ambition — with its Impact 2023 strategic program — is precisely to be the leader of the ecological transformation. "We are now part of the solutions. Our job is to turn the collective will and allocated budgets into concrete projects to make the transition possible," Estelle Brachlianoff, Group Chief Operating Officer at Veolia, reminds us.

Guaranteeing service continuity during the crisis

While providing essential services is an obligation, doing so remotely can prove complex and any failure entails very heavy consequences. In a widespread lockdown situation, the Group's digital tools proved indispensable to maintaining essential services for many areas hit by

the health crisis. "As the digital transformation had kicked off in 2012, the technical environment was ready and we did not have to purchase any new systems," states Didier Bove, Group Chief Information Officer at Veolia. For several years, the SATAWAD (secure, anytime, anywhere, any device) program has made it possible to recover, aggregate and analyze data from numerous sites, entirely securely from anywhere. Cloud-based office automation solutions have also long made it possible to work remotely and roll out projects such as Hubgrade and Aquavista, or monitor the operational and ecological performance of clients' sites online. "Veolia's technological edge allows it to deal with the unexpected more calmly than other companies," remarks Didier Bove.

In the midst of the pandemic, Veolia was thus able to mobilize all its resources, both human and technological, to maintain the continuity of its operations — except for public construction projects made impossible by the government directives linked to the public health state of emergency. "The word 'essential' has become key," highlights Estelle





“It’s all linked. Digital is not something in parallel. It enriches all our business lines.”

Estelle Brachlianoff

MEETING THE CHALLENGE OF COLLABORATING AT A DISTANCE OF 5,000 KM

Just before the health crisis, a drinking water plant recently installed in Minya, Egypt, by the German team from Veolia Water Technologies (VWT) was put on hold at the request of the client, a global food and beverage giant. However, seeing its orders skyrocket from the first widespread lockdown measures, the client asked for the plant to be urgently started up. Unable to travel, the German experts turned to their Egyptian colleagues, who were on site but initially did not have the necessary skills to single-handedly perform such a complex task. The two teams therefore set up an unprecedented collaboration, made possible thanks to digital tools. “Covid-19 left us with few options, so we had to find a new way of working across borders; the first test was managing to draw up a virtual working plan,” says Sherif Manem from VWT Egypt. Guided and supported from Germany, the Egyptian technicians benefited from the know-how and expertise of their European colleagues... based 5,000 kilometers away. This international task force took just 28 days to get the plant up and running. A feat in this unprecedented situation, made possible thanks to the power of digital, the daring of Veolia’s business units, and the combination of international expertise and local experience.

x5

Increase in video conferences during the crisis

Brachlianoff in this respect. “Over and above the services that we generally think of — drinking water and wastewater, household waste, etc., other areas of activity proved to be just as indispensable: treating hazardous waste from the pharmaceutical industry or hospitals, for instance, without which drug production or health security couldn’t be guaranteed.”

Echoing the Impact 2023 commitments, Veolia is thus positioning itself coming out of the crisis as the ‘glocal’ partner — intimately familiar with the local area and its constraints while enjoying the power of a global Group — able to improve its clients’ capacity for resilience and effectively support them through all sorts of crises.

Rising to challenges together: #UnitedThanksToDigital

The Veolia teams learned to master their digital tools from 2012 onwards: using Google Workspace, turning to video conferences, utilizing the cloud, etc. were the norm in the Group, long before the crisis. However, there was still some way to go to learn to unlock — remotely — the

teams’ collaborative capacity. “We had to establish rules collectively, throughout the lockdown period, but we rose to the challenge,” states Didier Bove. In this instance, the teams demonstrated that they were able to support each other remotely with complex operations, with no loss of operational performance, relying on all the resources at their disposal thanks to digital. For example, peer reviews — collegial consultations over several days traditionally bringing together experts from all countries to a site to challenge original or sensitive projects — took place entirely online for the first time! “For the construction of the hazardous waste incinerator for Sadara in the Middle East, some thirty experts demonstrated that they could effectively

offer their expertise, collaborate and challenge each other remotely,” recounts Pierre Ribaute, Executive Vice President Business Support & Performance at Veolia.

Balancing in-person work and remote control

By imposing major constraints, the crisis drove Veolia to accelerate its digital transformation. The proof: a certain number of tools or practices have now become standard (training its clients online, using electronic signatures, etc.).

For clients, it was a matter of taking advantage of cloud technology and overcoming certain fears in terms of relocating their data. Veolia’s decision to use

platforms renowned for their robustness — Google, Microsoft — has also paid off when it comes to blocking cyber attacks, which have shot up during the crisis: hacking attempts, malicious emails, etc. “Of course, we need to have a great deal of humility in this area, but up to now we have been able to defend our systems,” states Didier Bove.

Things have also changed for Veolia. “We have psychologically broken down barriers and tried out everything we could think of, prioritizing online over in-person activities. We have torn down walls,” states Pierre Ribaute. “We know, for example, that we are able to conduct remote energy audits by

using augmented reality, relying on the teams on the premises equipped with Google glasses, connected by computers to experts at the other end of the world,” he explains. “But this only works well because the teams know and trust each other. The connections made in person remain irreplaceable.”

This would suggest that in the post-crisis period Veolia will come to strike a sound balance between remote control and in-person interventions. A further step forward in reducing its carbon footprint.

Rapidly reacting and adapting

Managing a health crisis on the scale of ▶



the one we are experiencing requires being able to call ourselves into question and react extremely quickly. For instance, a comprehensive health, hygiene and environmental offering for buildings, combining indoor air quality, water system safety and disinfecting the premises, was created, marketed and rolled out in just three weeks (see boxed text, page 26). “The pace accelerated in a number of fields,” explains Estelle Brachlianoff. “For waste collection, for example, lockdown meant that we had to entirely rearrange the rounds. Digital tools allowed this adaptation to be made almost instantaneously.”

Another telling example is the closure of waste drop-off centers. The Veolia teams realized that many small entrepreneurs, artisans or second-hand parts dealers, who generate or use waste, no longer had access to them and were therefore deprived of their livelihoods. In response, they were able to develop — in the space of a hackathon weekend — software for booking

appointments with the waste drop-off center online. “In this respect, digital represents a strength because it allows you to experiment and take risks at low cost, adopting a fast and cheap approach,” continues Estelle Brachlianoff. The Group has been able to work in an agile and iterative way, testing and then readapting its solutions in real time with the client to help it handle the situation. “During the crisis, Veolia has amply demonstrated its capacity and vision to support regions’ resilience,” confirms Pierre Ribaute.

Making digital work for people

The Group’s digital strategy underpins the Impact 2023 plan’s success and uses data to further the ecological transformation. A far cry from the image of the ‘great replacement’ conveyed by automation, digital bolsters Veolia’s business lines, all the better to support people. “Two thirds of our employees are actually on the ground,” Estelle Brachlianoff reminds us. “Waste collection cannot be done remotely, for

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Hubgrade Centers in 22 countries

example. However, IT and artificial intelligence can improve the performance of these services, along with the comfort and safety of our employees.”

Veolia’s water, energy and waste management specialists are able to optimize their clients’ operational and economic performance and reduce their environmental impacts in real time thanks to the new remote control centers fed by data: Hubgrade platforms, which are growing in number in the Group’s operational countries. “In the future, it’s a matter of avoiding the thankless tasks and ▶

“During the crisis, Veolia has amply demonstrated its capacity and vision to support regions’ resilience.”

Pierre Ribaute





BLOCKCHAIN IS REVOLUTIONIZING THE PRACTICE OF REVERSE AUCTIONS

In the context of the global health crisis, the procurement divisions are on the frontline, exposed to the risk of a breakdown in transactions in the supply chain. A major risk that can prove extremely expensive: when cities are in lockdown, any direct negotiations with suppliers become impossible and procurements are interrupted de facto. These risks are now controlled at Veolia thanks to the development of a reverse auction¹ digital platform dedicated to calls for tender, based on blockchain technology², in China in the midst of the pandemic. This

innovation proved crucial at the heart of the Covid-19 crisis: call for tender mechanisms — especially those linked to the supply of coal — were able to take place entirely online. In the end, the platform combines every advantage: security, traceability and reduced-cost transactions. This digital tool not only saves on administrative fees, but it guarantees that the local teams obtain the most competitive prices on the free market. For the platform makes it possible to compare and rank the bids from all the potential

suppliers, automatically and at the time of the transaction. As each of them is given a random identity, the risk of collusion (and thus price distortion) is minimized. Finally, as the tool is fully owned by Veolia, its use does not incur any license fees. Following three incident-free auctions since the beginning of the health crisis, the method will be extended to other calls for tender for other raw materials. It enables Veolia to be prepared for other potential crisis situations, where face-to-face negotiations would be once again impossible.

¹ In a reverse auction, the winner is the one who offers the lowest price. A major lever of procurement performance in a digital world, this auction system pits suppliers against each other, incorporating several complex criteria of choice from the call for tender, and secures the negotiations and contracting from the beginning of supplier relations.

² Blockchain is a secure and transparent data storage and transmission technology that functions without a central authority. Technically speaking, it is a distributed database whose information and internal links to the database are validated and grouped into blocks at regular time intervals, forming a chain. The whole process is secured by cryptography.

OUTFRONT

keeping human intervention for where it is meaningful, without there being fewer employees throughout the project,” highlights Estelle Brachlianoff.

When digital and the ecological transformation go hand in hand

Veolia’s approach links its digital strategy to a multi-faceted performance goal, at once encompassing business, economic, social,

societal and ecological dimensions. The Group also intends to draw on digital to solve a complex equation: maintaining economic growth, improving its employees’ working conditions and supporting them in the transformation of their profession, and increasing its clients’ productivity, while reducing costs and improving its environmental footprint.

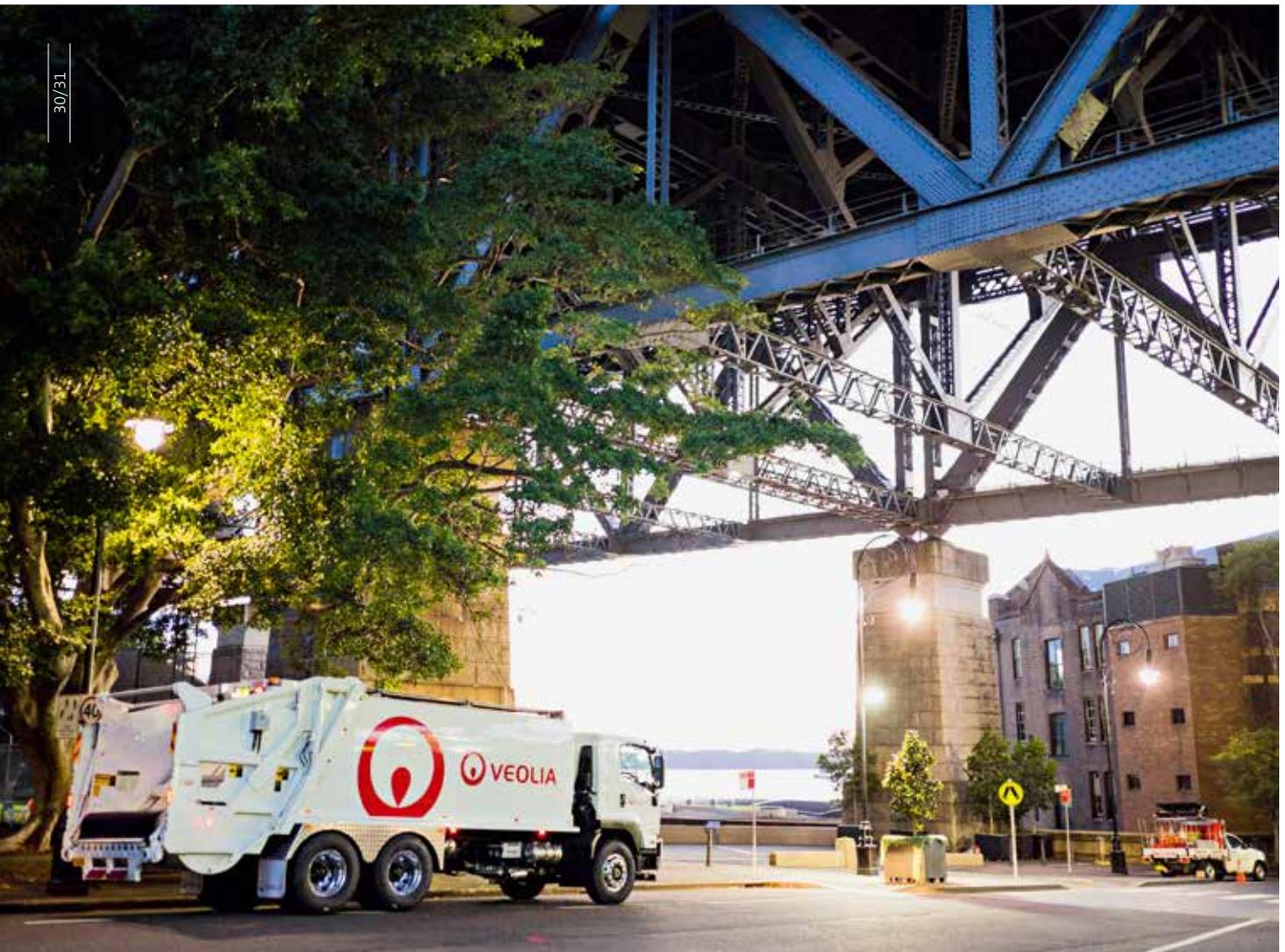
To this end, the IT team has rolled out its

own strategic plan to support Impact 2023’s goals. A dozen digital offerings, currently under development, aim to support operational efficiency and the development of business lines seen as key for the future, such as hazardous waste management, CO₂ capture, and plastics recycling.

“It’s all linked. Digital is not something in parallel. It enriches all our business lines and everything that we do for our clients must help roll out the new Impact 2023 strategy. The merger with Suez is in the same vein. The aim is to take the best of our two worlds: by combining our know-how and technologies, we will use the acceleration of digitalization to benefit the ecological transformation. Everything must help resource the world,” concludes Estelle Brachlianoff. ■

“Veolia’s technological edge allows it to deal with the unexpected more calmly than other companies.”

Didier Bove



Virtual reality: immersion in remote collaborative work

After revolutionizing the world of video games, this technology is shaking things up in industry, with an increasing number of manufacturers taking a closer look with a view to applying it in their sectors. The benefit of virtual reality? Immersion in a 3D model. Here's a guided tour...



DIVE INTO VEOLIA'S VIRTUAL REALITY PLATFORM

Accessible to all the Group's entities, the platform designed by R&I forms a common base making it possible to pool efforts and share knowledge and experience in virtual reality. It offers features for creating a 3D scene from a CAD (computer-assisted design) drawing and extended use of digital plans. There is also a toolbox — which is virtual, too — including a tape measure, flashlight, viewfinder and cutter. **The result:** equipped with a headset (HTC Vive), staff can move around in 3D in a preconfigured virtual space!

While they have not yet reached maturity, immersive technologies are undergoing experiments offering a glimpse of their full potential. For its première, Veolia Research & Innovation's virtual reality platform (cf. boxed text) accelerated the development of the Saphira™ prototype for treating industrial water. The added extra? Being able to move around virtually in 3D at the heart of a chemical reactor. More recently, R&I offered a 'multi-participant' feature. The aim is to facilitate simultaneous group work in the same virtual scene, which is ideal for remote collaboration. Given the current health situation, this argument is more compelling than ever: "In

practice, when reviewing the design of a pilot, this multi-participant mode has already allowed the participants to move around 360° in a virtual space. They can now interact with others at the same time, using the specific tools integrated into the module," states Jérôme Jossent, a research engineer in the R&I department.

High potential

Extremely expensive just a few years ago — just like augmented reality, which adds virtual elements to a real environment, virtual reality has become much more widespread, even among the general public. The technology is beginning to win people over, with

an increasing number of business-friendly uses, such as trade show visits, site reviews, simulations during training, and product presentations. In the long term, might we see Veolia staff swapping their Chromebooks for a virtual reality headset? "Why not," replies Jérôme Jossent. "But we will need to be able to solve some of its specific issues, from ergonomics through the weight of the equipment to the wires, which still restrict movement." Immersive and interactive in one, virtual reality above all proves extremely effective in accompanying changes in certain areas of activity. We certainly haven't heard the last of it!

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