

A woman wearing a dark vest over a light blue shirt is riding a silver bicycle through a field of tall green grass. To her right is a tree with green leaves and clusters of bright orange flowers. In the background, a tall, blue water tower with white and yellow decorative patterns stands against a clear blue sky. A fence and some industrial buildings are visible in the distance.

## ACTIVITY REPORT 2020

## The Veolia Institute

is a platform promoting analysis and discussion, a bridge between the academic and economic worlds and civil society. It has been contributing to thinking on the major issues facing our planet and to the Veolia Group's forward-looking vision since 2001.

The Institute tackles topics at the crossroads of society and the environment, such as the climate crisis and urban resilience.

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## OUTLOOK FOR 2021

- Industries and waste: toward a circular economy
- Exploring ecological and social transformation

# DINAH LOUDA & NICOLAS RENARD

President & Executive Director



Dinah Louda



Nicolas Renard

“

We live in times almost without parallel in human history. You have to go back a long way to find another era with a similar convergence of challenges and of innovations.

”

2020 was a dramatically different year for us all, and the Veolia Institute was no exception. Despite the coronavirus pandemic, the Institute continued its forward-looking work on issues at the crossroads of the environment and society. It managed to maintain its activities, from conferences and symposiums to talks, publications and studies, despite having to change how they are run, using video conferencing when face-to-face meetings proved impossible. Paradoxically, this new way of working opened up the Institute's work to untapped audiences.

Throughout a year governed by the rhythms of a public health and financial crisis, the unwavering support of the Veolia Group, the members of our Foresight Committee, and our partners meant we could continue with our mission. We offer them all our warmest thanks. They again demonstrated their attachment to rigorous analysis, discussions based on proven facts, and engagement with a variety of perspectives, including from universities, businesses, public authorities, non-profit associations and multilateral bodies.

This support is also a testimony to the Institute's relevance in a fast-changing world, no longer characterized by permanent change but by permanent disruption: climate crisis, degraded biodiversity, raw material scarcities, social transformation, geopolitical upheaval and disruptive technologies such as artificial intelligence, nanomaterials and genetic engineering.

We live in times almost without parallel in human history. You have to go back a long way to find another era with a similar convergence of challenges and of innovations.

These changes ask us to think, debate, and act. The Institute is an active participant in this process, producing quality content for its readers and listeners. Driven by a mission to illuminate the future, it studies today's world and, especially, tomorrow's world. Over the past 12 months it has tackled several key issues, including innovations in access to essential services in Africa, indoor air quality, the future of strategic materials needed for the energy transition, and the raw materials economy.

In 2019 the Veolia Group set out its purpose: “to contribute to human progress by firmly committing to the Sustainable Development Goals set by the UN to achieve a better and more sustainable future for all.” This applies both to the traditional water, waste and energy activities it supplies to towns, cities and industries and to its non-commercial activities, especially those undertaken by the Institute. And with the choice of topics it examines and its commitment to objectivity and openness, comparing different points of view and providing open access to all its content, the Institute contributes, in its own way, to putting Veolia's purpose into practice. ■

EDITORIAL

# PIERRE-MARC JOHNSON

Chair of the Foresight Committee



Despite the human, economic and social destruction it has wreaked, the crisis sweeping the world's population contains within it a seed of hope, revealing and accelerating the relevance of the deep-reaching changes we need to make to our societies and, at times, our behaviors.

It means that human health is once again at the center of our concerns, and with it our multiple interactions with the environment in all its forms – air, water and soil – as well as with the animal world and living ecosystems. It has further sharpened our awareness of the climate crisis and the threats that biodiversity faces, based on what the science has taught us. It has shone a light on

the essential role of health workers, local retailers, food supplies, collective services and mutual solidarity.

In the face of great difficulties, we have had to show our resilience, our capacity to adapt and change our behaviors, with varying degrees of success depending on the community.

There are already some positives: the return of the USA to multilateral forums, and the green economic recovery programs in Europe, the USA and elsewhere. Many political and economic decision-makers have already understood the need for action to tackle this multidimensional ■■■

“ This context serves to remind us of the importance of a multidisciplinary approach if we are to grasp the complexity of these challenges and encourage everybody to take action. ”

■■■ crisis at every level, from shifts in individual behaviors to changes in public policies, including collective actions taken by businesses.

This context serves to remind us of the importance of a multidisciplinary approach addressing thinkers and theorists alongside actors from local authorities, businesses and civil society associations if we are to grasp the complexity of these challenges and encourage everybody to take action.

Through its role as a bridge between universities, public authorities, multilateral organizations, businesses, NGOs, and many more, and as an

interface between the Veolia Group, particularly its senior management team and Strategy and Innovation Department, and a broad international ecosystem of committed thinkers and doers, the Veolia Institute is adding to its other missions by working to help bring about a much-needed ecological transformation.

The Foresight Committee, which I have the pleasure of chairing, supports the Institute in this task and guides its development, shedding light on absorbing topics such as the circular economy, sustainable organizational performance, environmental health, and the levers for individual and collective transformation. ■

# THE VEOLIA INSTITUTE

## A PLATFORM for environmental and societal foresight

The Veolia Institute has been conducting foresight work on issues at the crossroads of the environment and society since 2001. Its mission is to offer cross-cutting perspectives that shed light on the future. As a bridge between the academic world, civil society and the Veolia Group, the Institute helps to enrich public debate as well as identify and share analyses and insights into emerging issues.

### A PARTNERSHIP-BASED AND MULTIDISCIPLINARY APPROACH

The Veolia Institute's activities are anchored in a permanent dialogue between intellectual circles, political and economic decision-makers, and actors in the field. Through its panel discussions, journal, *The Veolia Institute Review - Facts Reports*, and forward-looking working groups, the Veolia Institute gathers and disseminates the experience and expertise of various players (researchers, academic experts, public authorities, international organizations, NGOs, and companies) to offer a variety of perspectives on the issues it tackles:

- Access to essential services;
- Biodiversity;
- Climate change;
- Governance and societal debate;
- Resources and the circular economy;
- Health and the environment;
- Cities and urban services.



In 2020, the Veolia Institute worked on its various productions in partnership with the France-based consultancies Archipel&Co and Nomadéis, as well as with the scientific management center at Mines ParisTech.

### GOVERNANCE OPEN TO THE WORLD

The Veolia Institute is based on three pillars:

- **The operational team**, which runs the Institute's day-to-day operations;
- **The Board of Directors**, which sets overall policy, leads and oversees management of the Institute;
- **The Foresight Committee**, which advises the Institute and guides its development.

### THE VEOLIA INSTITUTE TEAM

The team suggests areas for study, establishes the broad themes and identifies priority topics and expert partners. It implements the action programs, coordinates the network of contributors, and disseminates the results of the Institute's work. This collaborative work the team members do is regularly discussed with the Foresight Committee and approved by the Board of Directors.



Dinah Louda  
President



Nicolas Renard  
Executive Director



Lorraine de Jerphanion  
Program Manager



Sophie Soubrier  
Executive Assistant

### BOARD OF DIRECTORS

The board embodies the Veolia Institute's positioning and the bridges it builds between the private sector, scientific circles and civil society. The 14 members who make up the board — including representatives from Veolia, members of the Foresight Committee and established outside experts — deliver balanced governance of the Institute.

Board of Directors members: **Jean-Pierre Boisivon**, Emeritus Professor at Paris II Panthéon-Assas University, Vice Chair of the Institute; **Estelle Brachlianoff**, Chief Operating Officer, Veolia; **Olivier Brousse**, Senior Executive Vice President, Strategy and Innovation, Veolia; **Antoine Frérot**, Chairman & Chief Executive Officer, Veolia; **Paul-Louis Girardot**, Vice Chair of the Institute; **Alain Griot**, Advisor to the Director of Research and Innovation, Ministry of Ecological and Solidarity Transition; **Olivier Grunberg**, Executive VP and General Secretary of Veolia Water;

**Philippe Guitard**, Senior Executive Vice President, Central & Eastern Europe, Veolia; **Pierre-Marc Johnson**, international lawyer, former Premier of Quebec, Chair of the Foresight Committee; **Claude Laruelle**, Chief Financial Officer, Veolia, Treasurer of the Institute; **Helman Le Pas de Sécheval**, General Counsel, Veolia; **Claude Mandil**, former Director General of the International Energy Agency; **Julia Marton-Lefèvre**, sustainability and environmental expert, former Director General of IUCN; **Jean-Pierre Tardieu**, Honorary Chairman of the Institute; **Sébastien Treyer**, Executive Director of IDDRI.

THE FORESIGHT COMMITTEE

The Foresight Committee steers the Veolia Institute’s work and embodies the solid scientific foundations of the Institute’s programs thanks to the expertise and international reputation of its members. At the Committee’s regular meetings, which began in 2001, it works on expanding the Institute’s networks and guiding its forward-looking mission.



**Harvey Fineberg**  
President of the Gordon and Betty Moore Foundation, former President of the United States Institute of Medicine



**Pierre-Marc Johnson**  
General counsel at the Lavery law firm, Montréal, former Premier of Quebec, Chair of the Veolia Institute’s Foresight Committee



**Philippe Kourilsky**  
Honorary Director General of the Pasteur Institute, biologist, Professor Emeritus at the Collège de France



**Amy Luers**  
Global Lead for Sustainability Science at Microsoft, founder of Sustainability in the Digital Age



**Mamphela Ramphele**  
Former Managing Director of the World Bank, former Vice-Chancellor of the University of Cape Town



**Amartya Sen**  
Economist, winner of the 1998 Nobel Prize in Economics, holder of the Thomas Lamont Chair and Professor of Economy and Philosophy at Harvard University

RECOGNIZED LEGITIMACY

For over 15 years, the Veolia Institute has developed an innovative approach that benefits both from Veolia’s hands-on experience and from the objective input of its Foresight Committee. This twofold approach has enabled it to become a relevant and legitimate internationally recognized platform for exploring global issues.

In December 2015, the COP 21 Paris Climate Conference ratified the Veolia Institute’s status as an observer NGO under the terms of the United Nations Framework Convention on Climate Change. This decision recognizes the Institute’s legitimacy as a contributor to understanding climate-related issues. The Institute’s status means it can participate actively at COP summits alongside other parties (governments, negotiators, etc.), play a role as a source of proposals within civil society networks, and contribute to discussions in the run up to negotiations.

- This status supplements other accreditations the Institute obtained in previous years:
- Member of the Civil Society network of the United Nations Department of Economic and Social Affairs;
  - Accreditation as a research organization by the European Commission under its 7th Framework Programme for Research.

WORK FREELY ACCESSIBLE TO ALL

The Institute continued its communication activities and the dissemination of its work as widely as possible in 2020:

- **Veolia Institute** publications are freely available on the Veolia Institute website and on OpenEdition, the human and social sciences electronic resources portal;
- **Veolia Institute** conferences can be viewed on the Institute’s website and YouTube channel;
- **The newsletter and social networks** help to foster a dynamic relationship between the Veolia Institute and its external network as well as with the wider Veolia Group. ■



2020

# INDOOR AIR QUALITY

## The challenges of the invisible

Although less in the media spotlight than outdoor air pollution, indoor air quality is every bit as important to health. We spend an average 80% of our time in enclosed environments (housing, offices, schools and public transportation, etc.) where we are often exposed to numerous pollutants with potentially harmful effects. The WHO estimates that poor indoor air quality causes 3.8 million deaths worldwide every year. In France, the six main indoor pollutants are thought to cause 20,000 premature deaths and are estimated to cost the country €19 billion each year.

### The Veolia Institute Review - Facts Reports

#### Indoor air quality: tackling the challenges of the invisible



To shed light on this topic, in the first half of 2020 the Veolia Institute published a new issue focused on indoor air quality. It set out to:

- Share what is known about sources of indoor air pollution around the world, and the various public health impacts according to the types of spaces concerned;
- Explore solutions for measuring, improving and preserving indoor air quality offered by the latest scientific and technical innovations;
- Identify levers for raising people’s awareness and implementing the public policies needed to deploy these solutions.

The issue contains contributions from researchers (Institute of Environmental Assessment and Water Research, ESCATA’Lab, University of Seoul), international organizations (WHO, CCAC) and businesses (Airvisual, OFIS Veolia).

## CONFERENCES ON INDOOR AIR QUALITY

Following the publication of this issue, the Institute organized two debates on the topic that were open to in-house and external participants:



- A conference held in March 2020 at Veolia’s head office in Aubervilliers was attended by the following panelists: Corinne Mandin, Head of the Indoor Air Quality Observatory (OQAI) at the Health and Comfort Department of the Scientific and Technical Centre for Building (CSTB); Seraphine Haeussling, Coordinator of the Household Energy Initiative, Climate and Clean Air Coalition (CCAC); Benjamin Ficquet, Property & Operation Director, Icade; Sabine Fauquez and Frédéric Bouvier from Veolia, and as moderator, Cédric Baecher, Director of Nomadéis.
- In June 2020, a webinar was held in partnership with Mouvement UP, the social innovation platform run by the SOS Group, on the following theme: Virus, pollutants and air quality: how to manage risks? with contributions from Karine Léger, Director of AirParif; Dr. Fabien Squinazi, biologist and member of the French Public Health Authority, and Frédéric Bouvier from Veolia.

# INNOVATING FOR ESSENTIAL SERVICES IN AFRICA

## Water, waste, energy

With a population of 4 billion and a GDP that could equal the European Union’s by the end of the 21st century, Africa is a thriving continent that will see growth for decades to come. And yet, despite progress made over the past 20 years, Africa as a whole continues to face challenges in terms of access for all to water, sanitation, waste management and energy. Simultaneously environmental and societal, these challenges can be tackled through the countless innovations emerging across the continent, a process driven by startups, major corporations, civil society associations and local people themselves. But this can happen only if supported by the economic models and governance systems needed to scale up and roll out the innovations on a widespread basis.

### The Veolia Institute Review - Facts Reports

#### Water, sanitation, energy and waste: prospects for essential services in Africa

In the second half of 2020, the Veolia Institute published an issue of its review entitled “Water, sanitation, energy and waste: prospects for essential services in Africa” with a threefold objective:



- Understand the importance of essential services for the sustainable development of the continent, through the analysis of demographic dynamics as well as socio-political, health and environmental contexts up to 2030;
- Map promising innovations, good practices and pitfalls to be avoided, from service planning to governance, the potential of decentralized solutions to collaboration with the informal sector and the potential of the circular economy on the continent;
- Identify the levers for rolling out these innovations, including new business models, the contribution of digital technology, the need to measure the impact of solutions, user involvement, and innovative coalitions of stakeholders.

Contributions from, among others, the World Bank and the Sahel and West Africa Club (OECD), NGOs such as WSUP and WWF, researchers from University College London and Gustave Eiffel University, and startups (Sanergy) and businesses (Veolia) help build an understanding of the various challenges raised by this topic.

## CONFERENCES ON ESSENTIAL SERVICES IN AFRICA

Following the issue’s publication, the Institute organized two panel discussions on the topic, open to in-house and external participants.



- **A webinar in Innovating for Essential Services in Africa was held on February 12, 2021**, with the following panelists: Fadel Ndaw, Water and Sanitation Specialist, World Bank; Haweya Mohamed, co-founder of Afrobytes; Max Cuvellier, Director of Mobile 4 Development, GSMA; Christophe Maquet, Director of the Africa and Middle East Zone, Veolia, and as moderator, David Menascé, Director of Archipel&Co and professor at HEC.
- **Meetings with experts** were arranged so that managers from Veolia’s Africa and Middle East division could discuss how to tackle the challenges of boosting sustainability in urban Africa.
- **A series of conferences in several African cities** is in preparation in partnership with newspaper *Le Monde*, scheduled for late 2021. ■

# FORESIGHT COMMITTEE MEETING

## Green recovery and environmental health

In October 2020, the Foresight Committee, responsible for guiding the Institute’s work and development, organized a distance learning day to examine the lessons to be learnt from the health crisis, particularly in terms of environmental health, and discuss the conditions for a successful recovery that addresses environmental issues.



# COVID-19 AND MANAGEMENT

## Participation in a multi-company study

The Institute contributed to a multi-company sociological study on mechanisms for adapting to the health crisis in terms of organizing work and modes of management. The study was led by French sociologist François Dupuy, author, among other publications, of the Lost in Management series of books. A summary of the results was distributed to managers at Veolia and the people interviewed. The document will feed into Veolia’s project to update the code of conduct for managers that is currently underway.



# THE VEOLIA INSTITUTE TALKS

## Raw materials and critical metals

This format of meetings for Veolia managers gives them the chance to explore environmental, societal and geopolitical changes underway through discussions with leading experts.

Two meetings were held in 2020.

SEPTEMBER 2020 - Olivier Vidal



What role do metals play in the energy transition? What are the critical metals? How can Europe secure its supply of critical metals?

Opinions and expert views from Olivier Vidal, Research Director for the French National Center for Scientific Research (CNRS) at the Grenoble Institute of Earth Science.

OCTOBER 2020 - Philippe Chalmin



What impact is the health crisis having on commodity markets? In particular, how has the oil market been impacted? Which markets show the most promising signs of recovery?

Insights from Philippe Chalmin, Professor at the University of Paris Dauphine, President and Founder of Cercle Cyclope.

# FOCUS ON TWO THEMES

## Industries and waste: toward a circular economy

Faced with the limits of a linear production and consumption model and traditional waste management systems, the transition to a circular economy has become a necessity. Such a transformation demands major changes in the behavior of everyone involved (businesses, users/citizens), changes that public policy must encourage.



The emergence of an innovative, job-creating circular economy will happen within businesses as well as within broader ecosystems, driven by new business models such as the functional economy. The Veolia Institute is preparing a new issue of its review for 2021 on this topic.

## Exploring ecological and social transformation

The concept of ecological transformation covers a wide range of realities that vary according to local conditions, timeframes and the areas of application in question. It also raises questions about our relationship with nature and technology. What the various processes for ecological transformation have in common is their faith in humanity's ability to tackle the climate crisis and preserve biodiversity and resources by reimagining our societies to make them more sustainable.



The Veolia Institute is preparing a new issue of its review on this topic, drawing on philosophical, historical and sociological perspectives alongside case studies from a range of sectors, particularly water, agriculture and energy management. The aim is to identify the conditions needed for successful transformation of our modes of production and consumption: What roles for business, cities and states? Which economic models do we choose? How do we educate in order to transform? ■

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Thinking together to illuminate the future