

VEOLIA INSTITUTE

ACTIVITY REPORT
2016 / 2017



Analysis



Anticipation



Dialogue

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Dinah Louda
Executive Director



Jean Pierre Tardieu
Chairman



BE A FORUM FOR IDEAS,
TO UNDERSTAND AND
SHARE WHAT SOCIETY
NEEDS TO MEET THE MAJOR
ENVIRONMENTAL ISSUES
OF OUR DAY



As the Veolia Institute celebrated its 15th anniversary in 2016, the time seems right to take a look back over our journey so far. The last decade and a half has been marked both by unchanging positions and gradual adjustments in response to a changing world.

The main aspect that has remained unchanged is, naturally enough, our mission: to serve as a forward-looking institute that develops a long-term vision of the environment and its relationship to society and establishes ties with the international scientific community. In 15 years, we have thus built an extraordinary network of scientists and other actors involved in tackling environmental and social issues.

The Institute's Foresight Committee, created at the same time as the Institute, is at the heart of that network. Its members are illustrious figures from a variety of fields, including two Nobel Prize winners, who agreed to sit on the committee, most of them on an impressively enduring basis. They have found the Institute to be an innovative, non-academic partner that can draw on the experience of a major company and that has set itself ambitious goals in terms of publishing and sharing knowledge. The Foresight Committee ensures that the Institute's work is objective and consistently meets high standards.

In the years since it was founded, the Veolia Institute has organized nine international conferences, each in partnership with a leading research organization. Each conference has concentrated on a theme establishing dialogue between an environmental question and another important issue, such as education and health, the fight against poverty, the future of the climate and development, and protecting major ecosystems. The Institute has also organized a large number of seminars, workshops and debates for business managers and civil society leaders. The events are designed to identify the most significant scientific developments and contribute to public debate.

In 2007, we decided to publish journals to coincide with the conferences. This led to the production of the journal S.A.P.I.EN.S (Surveys And Perspectives Integrating the ENvironment and Society), which publishes articles that explore environmental and societal questions on an interdisciplinary basis. We then launched FACTS (Field Actions Science) Reports: this journal takes a highly original approach consisting of providing actors in the field with a platform for exchanging ideas and knowledge as a tool to capitalize on their experiences, thus contributing to concrete improvements in the development field.

The themes we address have changed over these 15 years, reflecting the changing world around us. For instance, a few weeks before COP 21 in 2015, the Veolia Institute organized a major conference on methane. We felt that there was a lack of debate about methane, which is the second largest source of global greenhouse gas emissions and a problem that can rapidly and significantly be affected by human action. The methane issue went on to become an important topic on the international agenda, part of implementation of the Paris Agreement, as confirmed by COP 22 in Marrakech in 2016.

The Veolia Institute also began to explore the question of “common goods” in 2016, a theme that directly concerns most of Veolia’s activities. Lying at the crossroads of the economic, social, legal and political spheres, this issue throws up a series of risks and opportunities for a company such as Veolia.

In 2017, we are concentrating on our tenth international conference, to be held in Oxford in early November. The event is being organized in partnership with the Oxford Martin School and will tackle the theme of resource availability

in a low-carbon world. While being careful to scrupulously respect the Institute’s strictly independent position, we are putting the focus on actions that shed light on the physical and economic environments that provide the framework for Veolia’s activities and will not hesitate to make use of the company’s experiences. Half of the environment-based professions that will mark the next 20 years are still unknown, and the scientific community is interested in the ties likely to develop between research and business. This offers a new opportunity for the Institute to be useful to Veolia while contributing to public debate and continuing to meet the standard it sets itself in terms of objectivity and scientific rigor.

“ A FORWARD-
LOOKING INSTITUTE
THAT DEVELOPS A
LONG-TERM VISION. ”

In summary, over the last 15 years the Veolia Institute has established itself as a forum for ideas, seeking to understand and share what society needs to meet the major environmental issues of our day, and to identify the technical, financial, social and political conditions needed to implement possible solutions. Within this process, based on deliberation and dialogue, everyone can both take action and learn. As the past year has demonstrated, this approach is both challenging and rewarding.

15 YEARS OF ENVIRONMENTAL FORESIGHT

CONVENING AND DISCUSSING



6
Nobel Prize winners

9
international conferences

+40
workshops

50
partner organizations

400
speakers

+4,000
participants

ANALYZING AND ANTICIPATING

KEY THEMES FOR THE FUTURE

Cities and climate change, poverty and basic services, education and environment, common goods, robotics, methane, environmental economy, public-private partnerships, ecosystem restoration, air pollution, social acceptability, etc.

A NETWORK OF EXCELLENCE

MIT/JPAL, United Nations Environment Program (UNEP), Sciences Po, IDDRI, TERI, Polytechnique, IDEI, CIRED, CNRS, Wharton School, Columbia University, US National Academy of Sciences, Peking University, Development Research Center of the State Council in China.

IDENTIFYING AND SHARING



15 issues
with 5 special issues

Visualizing the world, IUCN, Cities and climate change, Large-scale Ecosystem restoration, Resilient cities

+100 articles



24 issues
with 15 special issues

Decentralized Electrification and Development, Environmental and Social Acceptability of Major Industrial Projects, Women's and Children's Health, Stories of Innovative Democracy at Local Level, Last Mile Delivery – Brazil, Haiti

+250 articles

THE INSTITUTE IN 2016

January

- ▶ **Publication of the Veolia Institute Newsletter**
-

February

- ▶ **Seminar on Raw Materials and Market Trends**
with Philippe Chalmin from the Cyclope Circle
-

April

- ▶ **1st workshop on common goods**
“Current thinking on the commons”
April 22
 - ▶ **Participation in the CNAM study group**
on “the role of corporate foresight”
-

May

- ▶ **Publication of the FACTS special issue**
Environmental and Social Acceptability
of Major Infrastructure Projects
French and English versions
 - ▶ **2nd workshop on common goods**
“Renewable commons”
May 20
 - ▶ **Veolia Institute Board of Directors Meeting**
May 30
-

June

- ▶ **Foresight Committee meeting in Japan**
on **robotics and artificial intelligence**
June 11 and 12

July

- ▶ **3rd workshop on common goods, “Energy”**
July 1
 - ▶ **Conference and debate organized at the Veolia**
headquarters with AZAO marking the publication
of the FACTS Reports special issue **Environmental**
and Social Acceptability of Major Industrial
Projects
July 12
 - ▶ **Publication of the Veolia Institute Newsletter**
-

September

- ▶ **4th workshop on common goods, “Energy”**
September 12
 - ▶ **New graphic design for S.A.P.I.EN.S.**
-

October

- ▶ **Conference and debate at the Sorbonne**
marking publication of the FACTS Reports special
issue on **Decentralized Electrification and**
Development
October 7
 - ▶ **5th workshop on common goods,**
“**Common goods and business**”
October 14
-

November

- ▶ **COP 22 in Marrakech**
 - November 10: Electrification Side Event,
Institute with FERDI
 - November 16: Methane Side Event, Institute with
CCAC
 - ▶ **6th workshop on common goods,**
“**Common goods and the nuclear industry**”
November 25
-

December

- ▶ **Foresight Committee meeting in Paris**
on **resource availability**
December 17 and 18

A UNIQUE FORWARD-THINKING NETWORK

Founded in 2001 by Veolia to encourage the development of forward-looking analyses on themes that lie at the interface of society and the environment, the Veolia Institute has established itself as an international platform for exchanging and debating ideas and knowledge.

A REMARKABLE PLATFORM FOR COOPERATION

Established as a non-profit organization under French law, the Veolia Institute is rooted in an ongoing dialogue with its networks of partners, including scientists, NGOs, social entrepreneurs and the public authorities, and a collaborative approach underpinned by knowledge-sharing.

A PARTNERSHIP-BASED COLLABORATIVE APPROACH

As a platform for horizontal thinking, the Veolia Institute has built up a network of local, national and international partners that can be divided into two categories:

- ▶ **a network of scientific partners**, tasked with exploring the major themes linked to the Institute's mission;
- ▶ **a network of practitioners**, whose specific expertise is called on to promote knowledge transfer and the sharing of best practices in their own fields.

The Veolia Institute has an innovative role: acting as the bridge between these networks and Veolia, making useful contributions to the company while preserving its own independence and scientific rigor. This partnership-based mode of operation has engendered a resolutely collaborative approach. The Institute uses three tools to contribute to public debate as well as identify and disseminate the signals useful to analyzing and understanding emerging issues.

- ▶ **A program of international conferences** designed as forums for interdisciplinary exchanges that shed light on key environmental issues. In 2016, the Foresight Committee met to discuss resource availability in a low-carbon world in the run-up to the Institute's 10th international conference, to be held on November 2 and 3, 2017 in partnership with the Oxford Martin School (see page 12).

▶ Two innovative publications

that meet a crucial and growing need for simplified access to validated, integrated and decompartmentalized knowledge.

- **FACTS Reports** focuses on pooling experiences and how to capitalize on them, providing a knowledge-based platform for use by actors in the field involved in development and the fight against poverty, such as NGOs, social entrepreneurs and the public authorities.

- **The S.A.P.I.EN.S journal** is dedicated to scientific communities from all disciplines working in the environmental field. It features the most relevant scientific theories on sustainable development. The choice to avoid specific terminology ensures that the journal is accessible to readers from every discipline.

In 2016, the Institute published two special issues of FACTS Reports: Environmental and Social Acceptability of Major Industrial Projects, and Decentralized Electrification and Development (see pages 14 and 17).

- ▶ **Studies** designed to produce in-depth foresight analyses, such as the "Common goods" program consisting of six workshops run in 2016 (see page 16).

The Veolia Institute's networks of partners, and its contributions, publications and conferences give it credibility and legitimacy as it pursues its mission to tackle global issues at the international level (see page 9).



AN INTERFACE FOR EXPLORING SOCIO-ENVIRONMENTAL ISSUES

Throughout 2016, the Veolia Institute instigated a process of reflection on a series of forward-looking themes at the interface between society and the environment.

METHANE

The Institute continued with the actions it initiated in 2015 aimed at reducing methane emissions, an issue that has not received enough attention in terms of its impact on the climate. The Institute organized several events tackling this topic:

- ▶ November 16, 2016 in Marrakech (Morocco): **side event on “Methane”** at COP 22;
- ▶ December 8, 2015 in Le Bourget (France): **organization of events reporting on the main lessons learned its Methane Conference at COP 21;**
- ▶ November 9, 2015 in Paris (France): **international conference ahead of COP 21** in partnership with the French Development Agency and the Prince Albert II of Monaco Foundation.

ACCESSIBILITY AND AVAILABILITY OF RESOURCES

The Institute’s exploration of this theme will culminate in its **10th international conference**, organized in partnership with the Oxford Martin School and scheduled for November 2 and 3, 2017. Preparation for the conference was organized in a number of stages:

- ▶ December 2016: **Foresight Committee meeting** on the theme of resource availability;
- ▶ 2016: **seminar on Raw Materials and Market Trends**, led by Philippe Chalmin, Professor of economic history at Paris-Dauphine University and President and Founder of Cyclope;
- ▶ 2014: **workshop on the theme Strategic Materials and Energy Transition**, with a contribution from Olivier Vidal, Research Director for the French National Center for Scientific Research (CNRS) working at the Grenoble Institute of Earth Science.

SOCIAL ACCEPTABILITY OF MAJOR INDUSTRIAL PROJECTS

In response to the many social, economic, legal and governance issues raised by the social acceptability of major industrial projects, the Institute organized various actions:

- ▶ July 12, 2016 at the Veolia headquarters, Paris (France): **conference and debate on Environmental and Social Acceptability of Major Infrastructure Projects** in partnership with Azao;
- ▶ Special issue of FACTS Reports in April 2016 on the theme **Environmental and Social Acceptability of Major Industrial Projects**.

ROBOTICS AND ARTIFICIAL INTELLIGENCE, SMART CITIES

At the Foresight Committee meeting that took place on June 11 and 12, 2016 in Tokyo, the Veolia Institute invited experts in robotics and artificial intelligence (AI) to talk about the concrete application of these technologies in the health and employment sectors and in areas affected by nuclear accidents, particularly in Japan. The Institute will explore the theme further with a **special issue of FACTS Reports on the theme of smart cities**.

COMMON GOODS

2016 was marked by a series of **six in-house workshops on the theme of common goods**. The workshops were based on conceptual and operational contributions (see p. 16).

DECENTRALIZED ELECTRIFICATION

The Veolia Institute and the Foundation for International Development Study and Research (FERDI) worked together **to assess a number of decentralized electrification solutions**:

- ▶ November 10, 2016 in Marrakech (Morocco): **Decentralized Electrification and Development** side event at COP 22;
- ▶ October 7, 2016, Paris I Panthéon-Sorbonne University (France): **conference and debate on Decentralized Electrification and Development;**
- ▶ Publication of a **special issue of FACTS Reports on Decentralized Electrification and Development**.

RESILIENCE

Following on from the studies undertaken as part of the RAMSES European research project, the Institute continued **to explore the theme of resilience**. Actions initiated in 2016 and rolled out in 2017 on this topic include:

- ▶ Preparing a **special issue of FACTS Reports** on the theme of resilience;
- ▶ Organizing a **colloquium at the International Cultural Center in Cerisy-la-Salle**, Normandy, in September 2017.

These analysis and research activities are a true reflection of the Institute’s mission: to serve as a platform for constantly exploring shifting socio-environmental issues.

MIXED GOVERNANCE

The Veolia Institute is governed by two bodies: the Board of Directors and the Foresight Committee. The membership of each of these two pillars of governance and their complementarity mean that the Institute benefits from an outside perspective to guide its work while remaining rooted in Veolia’s daily reality.

THE BOARD OF DIRECTORS embodies the Veolia Institute’s positioning and the bridges it builds between private sector players, scientific circles and civil society representatives. It is made up of 14 members—including Veolia representatives, members of the Foresight Committee and established outside experts—who deliver balanced governance of the Institute.

THE FORESIGHT COMMITTEE embodies the solid scientific foundations of the Institute’s programs thanks to the international reputation of its members. Each partner contributes to the committee with high-level expertise from a variety of fields, including social and climate sciences, economics and public health.



HARVEY FINEBERG
President of the Gordon and Betty Moore Foundation, Former president of the United-States Institute of Medicine.



MAMPHELA RAMPHELE
Former Managing Director of the World Bank, Former Vice-Chancellor of Cape Town University.



YURIKO KOIKE
Former Minister of the Environment then Minister of Defense and member of the House of Representatives. She was member of the Foresight Committee until August 2016. On July 31, 2016, she is elected Governor of Tokyo.



PIERRE MARC JOHNSON
Chief negotiator of the government of Quebec in the Comprehensive Economic Trade Agreement between Canada and the European Union, Former Prime Minister of Quebec.



AMARTYA SEN
Economist, Nobel Prize 1998, Thomas W. Lamont University Professor and Professor of Economics and Philosophy at Harvard University.



PHILIPPE KOURILSKY
Honorary Director General of the Institut Pasteur, Biologist, Emeritus Professor at the Collège de France.



NICHOLAS STERN
Lord, President of the British Academy, Fellow of the Royal Society.

FORESIGHT COMMITTEE: PROACTIVE EXPERTS

The Foresight Committee draws on the expert knowledge of its members to guide the Institute and steer its projects. At the regular meetings the Committee has been holding since 2001, it works on expanding the Institute's networks and directing its forward-looking mission.

The Foresight Committee's half-yearly meetings give the Institute the opportunity to validate ongoing projects, identify new foresight topics, and develop its areas of work thanks to the perspective of the participating experts and their in-depth knowledge of their fields.

The Foresight Committee's two meetings in 2016 were held:

IN TOKYO (JAPAN), in June 11 & 12, exploring the theme of robotics. The Committee looked at the application and development of robotics and artificial intelligence in the health and employment sectors and in areas affected by nuclear disaster, as well as their ethical and social implications, particularly in Japan (see page 15).

IN PARIS (FRANCE), on December 17 & 18, exploring the theme of minerals and strategic materials. The Committee examined the ties between economic development and resources in the context of a low-carbon world. The meeting was part of the process for preparing the Veolia Institute's 10th international conference, which is scheduled for November 2 and 3, 2017 and will be on this theme (see page 12).



The members of the Committee and the managers of the Institute in Tokyo.

Over the last 15 years, the Veolia Institute has developed an innovative approach, benefiting both from Veolia's experience and the independent support of the Foresight Committee. Thanks to this approach, the Institute has become a relevant and legitimate platform for exploring global issues and has achieved international recognition.

In December 2015, COP 21 ratified the Veolia Institute's status of "Observer NGO" granted by the United Nations Framework Convention on Climate Change (UNFCCC). This decision recognizes the Institute's legitimacy as a contributor to the understanding of climate-related issues. The Institute's status enables it to participate actively in the COP summits alongside other Parties (governments, negotiators, etc.), be a source of proposals within the networks of civil society players, and fuel discussions preceding negotiations.



This accreditation comes on top of other acknowledgements obtained in 2012:

- 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 (FP7).



METHANE: COP 22 FOLLOWS THE PATH SET OUT BY COP 21

After the success of its Methane Initiative at COP 21, the Veolia Institute took advantage of the COP 22 event to continue its work looking into ways to mitigate pollutants with short lifecycles. The two COP gatherings represented an opportunity for the Institute to use an international conference and feedback workshop to raise awareness among a wide range of public decision-makers and civil society actors of scientific advances and of the importance of making a real commitment to taking action to reduce methane emissions.

LESSONS LEARNED FROM THE COP 21 METHANE INITIATIVE

WHY WAS METHANE ADDRESSED AS PART OF COP 21?

Methane (CH₄) is a powerful, short-lived greenhouse gas (GHG) – i.e., one that stays in the atmosphere for a shorter time than others and is more harmful in the short term. Methane has a global warming potential (GWP) 28 times greater than carbon dioxide (CO₂), the gas with most responsibility for climate change. Methane also accounts for 32% of overall GHG emissions. This is why tackling methane, using methods that differ from those used to combat carbon dioxide, is the second most important lever for significantly fighting climate change, according to many experts.

The Institute and its partners felt that it was extremely important to provide an innovative event during COP 21 and a side-event at the official site during COP21 to help raise awareness of the issue and get international actors involved in reducing methane emissions, a field that remains under-recognized.

COP 21: TAKE-HOME MESSAGES FROM THE INSTITUTE'S ACTIONS

In 2015, as part of its Methane Initiative, the Veolia Institute held an international conference in the run-up to COP 21. The goal was to promote innovative solutions for cutting methane emissions in the three primary sectors that generate them:

		
<p>Agriculture, an area with a need for a broad range of innovative solutions, as emission sources (40% animal) are multiple and diffuse.</p>	<p>The oil and gas industry, the source that represents the highest concentration of methane emissions, where actions to prevent methane leakage would produce meaningful results.</p>	<p>Waste, since cutting methane emissions from landfills could form part of a potentially profitable process of using captured gas.</p>

The aim was to:

- review existing knowledge of methane and short-lived pollutants;
- revive debate about advances in actionable emission reduction solutions;
- discuss economic tools that could aid development of mechanisms to combat climate change.

New research and policies adopted in the oil and gas sector since then led the Institute to focus on this topic during COP 22.

<p>March 16, 2016</p> <p>The USA and Canada sign an agreement for a 45% cut in emissions by 2025, a process joined by Mexico in June.</p>	<p>May 2016</p> <p>The Environmental Protection Agency (EPA) issues restrictive guidance requiring oil and gas companies to find and repair methane leaks from oil and gas drilling and pipelines.</p>	<p>July 2016</p> <p>estimates for methane emissions from the oil and gas industry are revised significantly upwards.</p>
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METHANE AND COP 22: FROM WORDS TO ACTION



MARRAKECH COP22|CMP12
UN CLIMATE CHANGE CONFERENCE 2016

After examining the lessons from the Methane Initiative, and as part of its COP 22 activities, the Veolia Institute decided to focus on the oil and gas industry.

SIDE EVENT AT MARRAKECH: THE VEOLIA INSTITUTE AT THE HEART OF THE DEBATE

In November 2016, Morocco hosted the 22nd United Nations Climate Change Conference in Marrakech. Methane emissions did not form part of the main agenda, underlining the importance of regular debate on this issue. The Institute held an official side event at COP 22 so it could pursue its examination of innovative practices for reducing methane emissions. The event, held on November 16, was designed to underline how, unless fast-acting measures are put in place quickly, temperature rises by 2030 will exceed the 2°C target. The Veolia Institute invited Roland Kupers, an associate fellow at the University of Oxford previously involved in the Institute's COP 21 initiative, to talk about

methane emission reduction opportunities in the oil and gas industry. According to Dr. Kupers:

The methane question in the oil and gas industry is significantly underestimated.

Reducing emissions is simple.

Fixing leaks, and feeding the gas into networks and selling it is profitable.

Actors have the resources to self-fund emission reduction actions.



Session with the CCAC, official zone

As part of its partnership-based approach and as an “Observer NGO” accredited by the United Nations Framework Convention of Climate Change, the Veolia Institute has joined the Climate and Clean Air Coalition, the main voice of the United Nations Environment Program, whose mission is to reduce short-lived climate pollutants. The joint initiative, “*Actions on near-term climate mitigation to protect air quality and achieve the Paris climate goals and the SDGs*”, sets out to ensure that the question of methane emissions is included as a priority on the agendas of international policy-makers.

TENTH INTERNATIONAL CONFERENCE: THE HIGH POINT OF 2017

2017 will be a particularly constructive year for the Veolia Institute, culminating in the organization of an international conference on November 2 and 3 in partnership with the Oxford Martin School in the UK.

This major event will explore the availability of mineral resources in the light of the low-carbon transition and economic, energy, environmental, geopolitical and governance issues linked to the theme. The fact is that extraction of the planet's resources has tripled over the last 40 years, and is set to double at the very least over coming years as emerging economies continue to grow. We are consuming more resources than the planet can produce. At the same time, the transition toward a low-carbon economy may increase the demand for certain resources, particularly minerals.

FINDING CONCRETE SOLUTIONS

Researchers, state decision-makers at the national and European levels, NGOs and manufacturers from the sectors concerned will address these two issues by sharing their knowledge, experiences, and best practices in both developed and developing countries. Three main themes will be addressed during the event:

- **The impact** on the demand for primary resources of the transition to a low-carbon economy.
- **Limitations** on accessing primary resources.
- **Opportunities** offered by the circular economy, recycling and resource efficiency that could meet the new needs of a low-carbon world.

A PRESTIGIOUS PARTNERSHIP

The Veolia Institute is organizing its 10th international conference in partnership with the Oxford Martin School, a multidisciplinary resource center that is part of the University of Oxford. The school finances innovative research projects on various themes, such as climate change, disease, cyber criminality and inequalities. What these themes have in common is that they all have the potential to make a considerable impact on future generations, reflecting a long-term approach fully in line with the Veolia Institute's forward-thinking vision.



Signature of the partnership between Dinah Louda and Achim Steiner, former Director of UNEP and Director of the Oxford Martin School.

ENVIRONMENTAL AND SOCIAL ACCEPTABILITY OF MAJOR INFRASTRUCTURE PROJECTS

In the first of two special issues of FACTS Reports, the April 2016 issue looked at the environmental and social acceptability of major infrastructure projects.

Where once rail lines, major roads and dams were built without necessarily considering their environmental impact, growing environmental concerns and the rising power of civil society mean that major infrastructure projects need to be approached in new ways.

Social acceptability has become as important as technical feasibility, economic viability and environmental protection. This is why the April 2016 issue of FACTS Reports, ever faithful to the review's commitment to sharing best practices and solutions, presents concrete examples showing how the social acceptability of major infrastructure projects is contingent on creating shared value.

**3 REGIONS,
6 DEPARTMENTS AND
117 LOCAL COMMUNITIES**
crossed by the rail line

11,000 LANDOWNERS
affected by the construction
of the high-speed rail line

14 NATURA 2000 SITES
and more than
220 PROTECTED SPECIES
impacted

Extracts from the presentation of Vinci on the impacts of the high speed rail line.

PRACTITIONERS TO THE FORE

From Burkina Faso to Vietnam, via France, this issue tackles three core themes:

- understanding the importance of environmental and social acceptability,
- creating the conditions for success in order to co-create value,
- and knowing how to measure performance.

Expert practitioners discuss the issue of dams, the Total example, and the practical case of constructing the Paris-Bordeaux high-speed rail line. This issue of FACTS Reports was coordinated by David Menascé, a professor at the HEC business school and co-founder of Azao Consulting.

The conference and debate event held when the issue was published was staged in partnership with Azao. It brought together 100 participants around speakers from Total, Vinci and Veolia, who were able to provide further matter for reflection on this important topic.

This issue and all the other FACTS Reports articles are available free of charge from the Veolia Institute website.



ROBOTICS AND SMART CITIES: THE CHALLENGES FOR FUTURE- LOOKING TECHNOLOGIES

As the first step on the road to artificial intelligence, robotics offers numerous possibilities for improving people's lives but it also raises many concerns in areas as diverse as ethics, economics, geopolitics and the environment. Robotics also encompasses the theme of smart cities, a topic that will be covered in a FACTS Reports special issue in 2017.

ROBOTICS AND ARTIFICIAL INTELLIGENCE

The Veolia Institute called on a number of experts in robotics and artificial intelligence to contribute to the meeting of its Foresight Committee on June 11 and 12, 2016 in Tokyo.

- Yoshiyuki Sankai, PhD, Professor, Graduate School of Syst. & Inf. Engineering University of Tsukuba, and CEO of CYBERDYNE Inc.
- Dr. Hirohisa Hirukawa, PhD, Director, Research Center on Robot Innovation, National Institute of Advanced Industrial Science and Technology AIST.
- Mr. Atsushi Yasuda, Director, Robotics Policy Office, Ministry for the Economy, Trade and Industry in Japan.
- Marc Rood, Director, Access Group at Kurion Inc.
- Serge Tisseron, Psychiatrist, Senior Fellow, University Paris VII Denis Diderot.
- Carl Benedikt Frey, Co-Director Oxford Martin Programme on Technology and Employment at the Oxford Martin School.

The goal was to take a look at their applications in healthcare and employment and in areas affected by nuclear disaster as well as the ethical and social implications. The experts agree that robotics and AI will continue to transform every area of society. This makes it vital to learn more about these technologies as well as take up the challenges they entail, particularly in the ethical, geopolitical and economic spheres.

SMART CITIES: CONNECTED CITIES, ENGAGED CITIZENS

An increasing concern in the development of ecosystems for the smart city, combining sustainability with connected intelligence, is the need to bridge the gap between robotics and citizens' participation within a smart city framework that creates the basis for a fittingly holistic approach.

As part of its work on the impact of technology on environment and society, in 2017 the Veolia Institute will publish a special smart cities issue of the FACTS Reports. Coordinated by David Menascé, a professor at the HEC business school and co-founder of Azao Consulting, this issue will focus on three major ideas:

1. Responsibility, legitimacy and social impact;
2. The holistic approach to smart cities: interfaces between technology and citizens' participation;
3. Prospects: key factors for the successful development of smart cities.

The structural, technological and societal transformations of the modern city are expressions of a deep-rooted desire to embody part of the response to climate change. Adopting a systemic approach that combines governance by citizens with enlightened management of environmental resources, smart cities offer a mechanism that can (re)align the needs of citizens, businesses and public authorities. The special issue of FACTS Reports will examine these issues, drawing on case studies and reports.



A NEW WAY OF THINKING ABOUT “COMMON GOODS”

A forward-looking approach to the environment inevitably raises the issue of how to manage common goods. In 2016, the Veolia Institute launched a program of six in-house workshops at Veolia for discussing the theme of “common goods.”

THE CONCEPT OF THE COMMONS

What is meant by the notion of “common goods”? How can they be defined? Which forms are under threat: natural resources, public health, air and environmental quality, or ethics? What type of governance is needed to manage them?

These questions bring us face to face with the issues that underpin public debate of common goods and the future of the planet.

The notion of the commons covers goods over which no social unit (individual, family or company) has exclusive rights, neither ownership rights nor rights of use. Lying at the heart of the concept of the commons are three key components, “resources, communities, regulations,” leading directly to the question of the national and international governance of common goods.

In addition to the societal and environmental issues raised by the commons, a further complication arises with the diverse and confusing question of semantics: should we refer to the common good, common goods, public goods or the commons? Depending on the contexts, actors and cultures, only the term “the commons” is used, serving to restrict or even eliminate the commercial dimension often associated with the notion of resources. In international diplomatic texts on sustainable development, the notion of “commons” designates goods that cannot be appropriated and therefore cannot be used to make a profit.

THE VEOLIA COMPANY AND INSTITUTE: A SHARED FOCUS ON THE COMMONS

The Institute rolled out a special program consisting of six workshops exploring this future-looking theme, also of interest to Veolia as a company. The goal was to characterize the impact of the commons and identify how to integrate this notion in the field.

The series of workshops covered different themes:

- **CONCEPTUAL** themes to define the impact of the commons and detail the ways the notion is used in a contemporary context
 - > **Workshop 1** - Current thinking on the commons
- **OPERATIONAL** themes using multidisciplinary situations to identify the way the commons is integrated, what issues are involved and what the consequences are on the different parties
 - > **Workshop 2** - Renewable commons
 - > **Workshops 3 et 4** - Common goods and Energy
 - > **Workshop 5** - Common goods and a business
 - > **Workshop 6** - Common goods and the nuclear sector

This programme goes further in 2017 with two workshops on Knowledge Commons (Big data) and on Common goods and Waste.

It allows the Institute to bring together in-house teams, scientists and people working in the field to establish a dialogue on current practices and research in the field of managing common goods.

DECENTRALIZED ELECTRIFICATION, A POWERFUL LEVER FOR UNIVERSAL ACCESS TO ENERGY

Universal access to energy is a priority for the international community and an engagement underlined by the United Nations' decision to include it in the 17 Sustainable Development Goals drawn up in 2016. In 2015, 17% of the world's population still had no access to electricity. In the face of this massive challenge to our collective future, the Veolia Institute organized three initiatives in 2016, in partnership with the Foundation for International Development Study and Research (FERDI).

A FACTS REPORTS SPECIAL ISSUE

The 2015 call for articles on decentralized electrification attracted a number of interesting responses. The 168-page special issue of FACTS Reports published in September 2016 looked back over 15 years of decentralized electrification, examining in detail a number of active projects designed to bring electricity to people living in areas where no connection to the electricity grid exists. Whether individual or collective, the solutions presented focus strongly on renewable energy sources. Over 53.1% of the projects are on the African continent, with Asia and Latin America accounting for 25.1% and 18.7% respectively. The foreword and introduction for the FACTS Reports special issue was written by Thierno Bocar Tall, the Chairman and CEO of African Biofuel and Renewable Energy Company (ABREC), and Jean-Michel Severino, CEO of Investisseurs & Partenaires (I&P).

A CONFERENCE AND DEBATE IN PARIS

To accompany the publication of this issue, the Institute organized a conference and debate in October at University Paris 1. Two round-table discussions gave participants an opportunity to discuss collective electrification solutions with representatives from organizations such as Électriciens Sans Frontières (electric companies without borders), and individual solutions with representatives from actors including Schneider Electric and the Participatory Microfinance Group for Africa (PAMIGA).

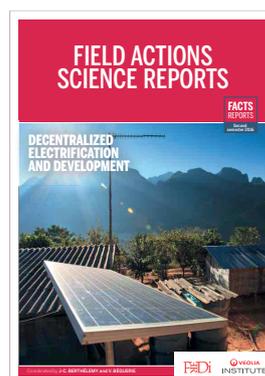
A SIDE EVENT DURING COP 22

As a contribution to COP22, oriented towards action and the African continent, the Veolia Institute held a side event on decentralized electrification on Nov. 10, 2016. Actors from civil society (Électriciens Sans Frontières, the SELCO Foundation, etc.) and authors of articles in the FACTS Report special issue presented a range of innovative solutions for access to decentralized electricity.

EUROPEAN DEVELOPMENT DAYS

An additional session is scheduled on June 8 in Brussels during the European Commission flagship gathering on Development.

Held in partnership with the Foundation for International Development Study and Research (FERDI), this comprehensive program, comprising a publication, conferences and debates, was a valuable chance to capitalize on actions in the field and build the future by promoting new thinking on one of the major challenges to global poverty reduction.



TOWARD RESILIENT CITIES?

Following on from two years' work as part of the European RAMSES project, the Veolia Institute continues to explore the theme of cities' resilience in the face of climate change.

If there is one issue that lies right at the intersection of societal and environmental concerns, it must surely be how cities adapt to natural disasters and climate change. The Veolia Institute has been engaged with this issue for the past five years, seeking to understand emerging new concepts and identify leading international experts as well as innovative local actors that are putting resilience into practice on the ground.

TWO UPCOMING EVENTS...

Two events are in preparation for 2017 :

- The Institute will cohost a symposium on city resilience at the Cerisy-la-Salle International Cultural Center (Normandy, France) in September 2017; the event will see academics, researchers, students and artists come together to explore this issue within a multi-disciplinary framework;
- A special issue of the FACTS Reports planned for 2018, featuring articles on resilience in various regions. The case studies and opinions presented in this issue will provide an opportunity to learn from actions put in place by city authorities, civil society groups and entrepreneurs.

...THAT BUILD ON A PRODUCTIVE PROCESS OF INTERACTION

The Veolia Institute has already carried out a first phase of work on this topic, from 2012 to 2014, as part of the European RAMSES project (Reconciling Adaptation, Mitigation and Sustainable Development for citiES). A number of European partners took part in the project, working to initiate debate on the subject of how European cities are impacted by climate change so that methods and strategies for cities to adapt to the changing climate can then be identified. This theme was also covered in a special issue of S.A.P.I.EN.S in 2013, and was the subject of a study run in 2011 with the United Nations Environment Program.



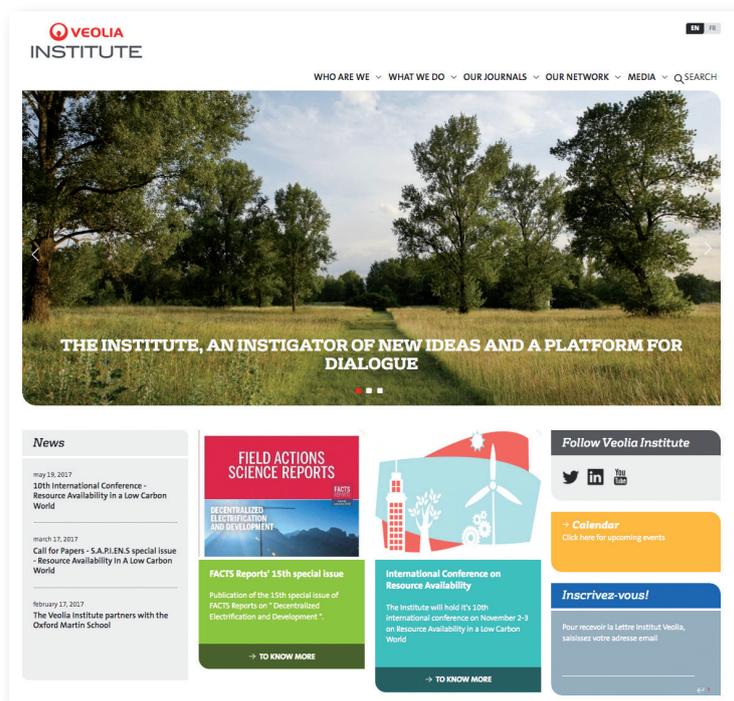
City of Bilbao, case study in the RAMSES project.

ENHANCED COMMUNICATION

The Veolia Institute makes all its work and publications available freely to all, to contribute to dissemination of knowledge and act as a platform for dialogue.

To raise the profile of its work and promote it to a wider audience, the Institute enhanced its communication tools in 2016:

- A more readable and dynamic **website**.
- A **site dedicated to the Institute on the Veolia intranet**, in order to share its findings and outcomes with 90,000 employees of the company across the world.
- An **online newsletter** sent out twice a year to its international network.
- A **Twitter account @InstitutVeolia** to reach an increasingly broad audience.
- A **Youtube channel** to convey the key messages of its Conferences.
- A **LinkedIn page** on the Institute to spread its news and content to professionals in the environment sector.



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