

VEOLIA INSTITUTE

ACTIVITY REPORT
2015 / 2016



Analysis



Anticipation



Dialogue

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Editorial



Dinah Louda
Executive Director



Jean Pierre Tardieu
Chairman



New goals have been set for 2016 and the following years, expressing the Institute's ongoing mission of contributing to public debate.



After extensive changes to its management team, the Veolia Institute set two main priorities for 2015: a major engagement in COP 21 in Paris at the end of the year, focusing on methane; and continued work on its publications. A new thematic program was defined for 2016.

The Institute organized a conference on methane mitigation on November 9, 2015 at the French Economic, Social and Environmental Council in Paris, in partnership with the Agence Française de Développement (AFD) and the Prince Albert II of Monaco Foundation. The conference attracted great interest from the many players involved in the fight against climate disruption. The different scientific and economic contributions presented illustrated the crucial—but still insufficiently emphasized—role of methane as the second lever alongside carbon dioxide for combating the greenhouse effect. This Activity Report sets out the detailed findings of the conference, which was awarded the COP 21 label, and of the two side events held on December 8 at the official Le Bourget venue. Given the importance of this issue, our Foresight Committee published a communiqué to alert all political and economic stakeholders. In addition, the Veolia Institute's status of "Observer NGO" granted by the United Nations Framework Convention on Climate Change was ratified by COP 21.

The two publications, FACTS Reports and S.A.P.I.EN.S, have been given fresh impetus, with a particular focus on FACTS special issues: migration and health in 2015, and the environmental and social acceptability of major industrial projects, decentralized rural and peri-urban electrification, and smart cities, to be published in 2016.

New goals have been set for 2016 and the following years, expressing the Institute's ongoing mission of contributing to public debate and providing insights on environmental and societal challenges for the company itself.

The Institute has, for instance, instigated reflection on common goods, a subject of interest to economists and political scientists, with a new approach including analysis of some of the most important existing and future challenges facing the planet and society as a whole.

The Institute is also currently preparing an international conference to be held in 2017 on the future of the natural resources required for a low-carbon economy, and the implications for the different regions, social balance and governance.

Through its main work and projects, together with the workshops that it organizes for Veolia employees, the Institute reaffirms its determination and ability to carry out its mission of analyzing future trends.

Foreword



Pierre Marc Johnson
Former Prime Minister of Quebec
Chairman of the Foresight Committee

The Veolia Institute contributes to foresight analysis in the field of sustainable development.

The members of our Foresight Committee draw great satisfaction from the twice-yearly meetings organized to reflect on the long term future and on emerging trends in our societies.

The Committee devotes its energy to furthering the Institute's projects, in particular by preparing conferences that contribute to public debate. It also supports development of the Institute's two journals. FACTS Reports, which focuses on actors in the field, ensures transmission of knowledge within NGO communities and addresses contemporary challenges, such as migratory movements, the acceptability of high-impact projects and access to basic services. It does this in collaboration with organizations working to capitalize on feedback from field work. S.A.P.I.EN.S presents peer-reviewed articles on an open-access platform that provides an overview of cutting-edge, multidisciplinary scientific topics.

The exceptional contribution made by the Institute in 2015 was undoubtedly the initiative it put together for COP 21 on the role of methane in climate disruption. By bringing together contributions addressing the scientific, technical

and economic aspects of this challenge, the event demonstrated that the quantity of methane emissions and their impact calls for greater attention from public authorities. With the international community pleading for an agenda of solutions, controlling methane

emissions could be an effective lever.

The required technologies, protocols and costings already exist, whether for gas distribution, where efficiency is the underlying principle in the art of managing plants and distribution networks; agriculture sector emissions, through proven methods for managing rice paddy irrigation; or landfill sites, where it is possible to convert methane emissions into energy.

This initiative demonstrated that control of methane emissions is within our grasp. There is still much to be done to broaden awareness and set

up the conditions to put these solutions in place. This is why, with the members of the Committee, we launched an appeal at the end of December to alert public and private organizations to the need for rapid action on methane in order to fight effectively against climate change.

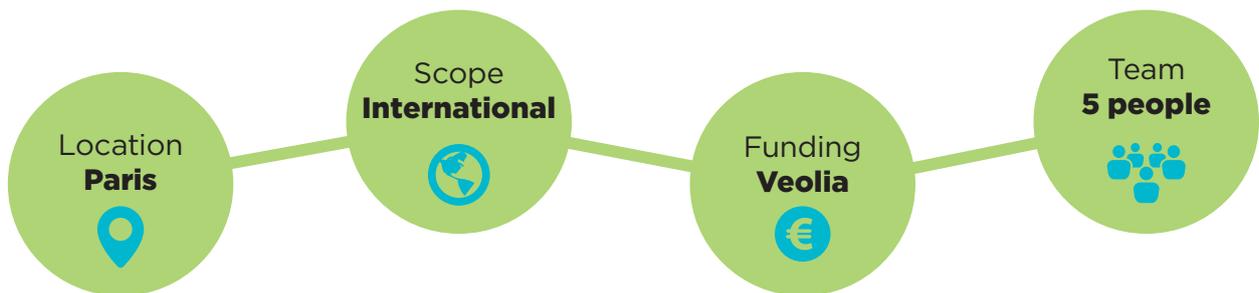
The Institute can take pride in this highly successful project.



The exceptional contribution made by the Institute in 2015 was undoubtedly its COP 21 initiative on the role of methane in climate disruption. ”

A unique platform

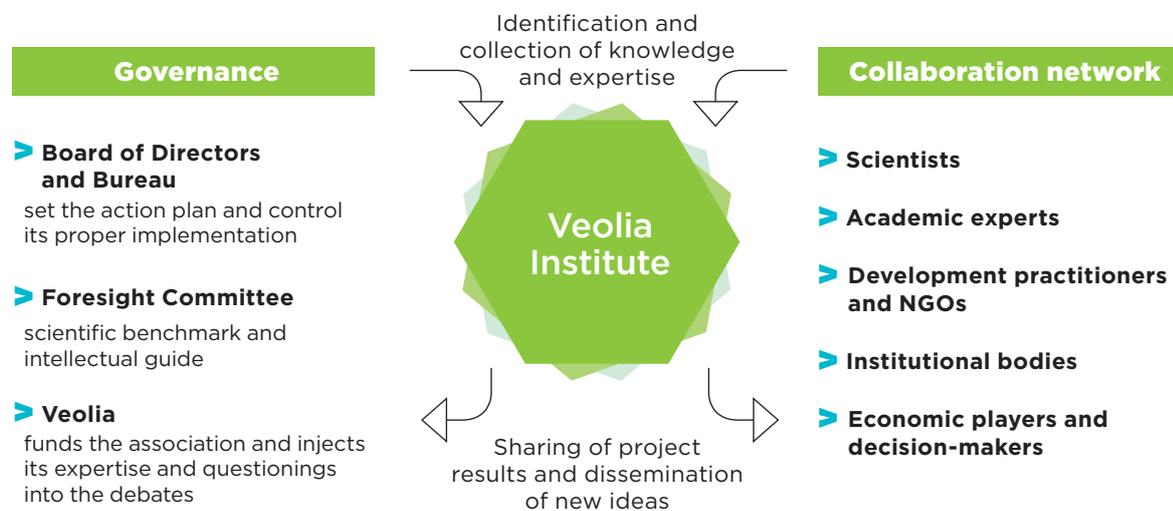
Founded by Veolia in 2001, the Veolia Institute has made its mark as a unique platform for promoting foresight analysis of issues at the interface between society and the environment. Its strength lies in its capacity to detect the earliest signs of change and engage in continuous dialogue with its partners.



The idea behind the founding of the Veolia Institute was that an independent think tank dedicated to analyzing future trends could provide Veolia with valuable insights that would feed into the company's vision for the long term and beyond, and contribute to public debate through its unique way of operating. Through ongoing dialogue with the foremost intellectual, scientific and NGO communities working in its areas of interest, the Veolia Institute develops new ways for Veolia to interact with civil society.

In January 2015, the new management team reaffirmed this positioning and defined a road map that included a strong presence at COP 21 on a standout theme, new special issues of its journals, and raising the profile of all its activities, within both outside audiences and Veolia's own personnel.

The results are very positive: the Institute organized an original initiative for the Climate Conference, published and prepared new special issues of its journals and modernized its communication tools. All this was possible thanks to its original positioning and the activities it has developed.



Partnership approach

Set up in the form of a non-profit organization under French law, the Institute has developed a particular approach of being attentive to the slightest signals of change and maintaining ongoing dialogue with its partners. The Institute creates links between its partners and makes it possible to test ideas and scientific knowledge against practices in the field, allowing it to provide valuable insights for understanding the world of the future and identifying the levers that can bring about the changes needed.

Working in partnership is part of the Institute's DNA. In its early days, the Institute created a network of experts in France, joining forces with centers of excellence, then extended its international reach to the United States, India, China and elsewhere, working with international organizations and networks.

Issues at the interface between society and the environment

Among the many issues at the interface between society and the environment, priority is given to those themes that will shape society and determine the future of the city, the economy and basic services. These include questions of the planet's resources and limits, the climate and energy, environment-driven changes and their impacts on society (inequalities, migratory movements, etc.), the social acceptability of major infrastructure projects, and the future of cities, which should be resilient, smart and inclusive. This wide-ranging scope allows the Institute to analyze environmental issues in all their many aspects (see *the program of foresight studies*, p. 18).

Identifying and sharing knowledge

The Veolia Institute deploys three instruments to help acquire the information needed to analyze and understand emerging issues and fuel public debate:

■ **A program of international conferences on emerging and future trends**, in the form of multidisciplinary forums highlighting the main environmental issues. In 2015: the COP 21 Methane initiative at the French Economic, Social and Environmental Council in November and at Le Bourget during COP 21 in December.

■ **Two pioneering journals** to meet the ever more pressing need for easy access to peer-reviewed, integrated and decompartmentalized knowledge. S.A.P.I.EN.S reports on the most outstanding scientific thinking on sustainable development, while FACTS Reports is dedicated to capitalizing on actions in the field conducted by all types of players (NGOs, social entrepreneurs, public authorities, private companies, etc.). Once again in 2015, the journals featured themed editorial partnerships.

■ **Foresight studies**, an opportunity to carry out in-depth foresight analysis of specific topics.

Drawing on its original positioning, network of partners and achievements, the Veolia Institute has enhanced its international credibility and earned growing recognition as a legitimate platform for global issues (see *box below*).

THE VEOLIA INSTITUTE: OFFICIAL ACCREDITATIONS

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).

Balanced governance

The Veolia Institute is governed by two bodies, which together provide a qualified external view guiding its work, while at the same time anchoring the Institute firmly in the day-to-day realities faced by an economic player of Veolia's stature.

The Board of Directors, with its mixed membership—representatives of Veolia, members of the Foresight Committee, acknowledged external experts—embodies the Institute's positioning and the bridges it has built between private-sector players, scientific circles and representatives of civil society.

The Foresight Committee guarantees the Institute's scientific credentials by virtue of the international standing of its members and the specialist knowledge each of them brings from their particular field of expertise: human sciences, economics, public health and climate science. Through its half-yearly meetings, the Committee has supported the Institute and guided its development since 2001.

PRESENTATION OF FORESIGHT COMMITTEE MEMBERS



HARVEY FINEBERG

President of the Gordon and Betty Moore Foundation, former President of the United-States Institute of Medicine, former Dean of the Harvard School of Public Health.



PIERRE MARC JOHNSON

Lawyer and Physician, former Prime Minister of Quebec, Quebec government's chief negotiator in the Comprehensive Economic Trade Agreement talks between Canada and the European Union.



YURIKO KOIKE

Member of Japan's House of Representatives, former Minister for the Environment and former Minister of Defence.



PHILIPPE KOURILSKY

Biologist, Emeritus Professor at the Collège de France, Honorary Director-General of the Institut Pasteur, Member of the French Academy of Sciences.



MAMPHELE RAMPHELE

Physician and Anthropologist, former Managing Director of the World Bank, former Vice-Chancellor of Cape Town University.



AMARTYA SEN

Thomas W. Lamont University Professor and Professor of Economics and Philosophy at Harvard University, former Master of Trinity College, Cambridge, Nobel Memorial Prize in Economics, 1998.

The meetings of the Foresight Committee provide an opportunity to organize workshop-style discussions on a theme chosen with guest experts and interact with the Institute's management team to gain approval for ongoing projects. In addition, the meetings enable the Institute to incorporate new ideas to enrich its reflection and extend its network of international partners.

The two Foresight Committee meetings for 2015 took place:

- **In Prague on June 27 and 28, on the theme of "Energy efficiency".** Alongside Philippe Guitard, Veolia Senior Executive Vice President for Central and Eastern Europe, the experts assembled for this meeting were: Anne Houtman, Principal Advisor to the European Commission Energy Directorate; Thomas Gomart, Director of IFRI, the French Institute of International Relations; and Cosimo Corsini, Partner at McKinsey & Company.
- **In Paris, on December 5 and 6, as a COP 21 side event on "The climate".** Alongside Antoine Frérot, Chairman and Chief Executive Officer of Veolia, the experts assembled were: Thomas Spencer of the Institute for Sustainable Development and International Relations (IDDRI) on the negotiations for the summit; Roland Kupers of Oxford University for presentation of feedback from the methane conference organized by the Institute; Manish Bapna of the World Resources Institute on climate and water resources; and Carlo Germano of Veolia on the circular economy.

After the meeting and the day before the close of COP 21, the Foresight Committee launched an appeal to public and private organizations for ambitious action on methane mitigation (see box to the right).

Through the actions it initiates with the support of its Foresight Committee, the Institute aims to anticipate future trends and their impact on public policies, private initiatives and society as a whole.



EXTRACTS FROM THE COMMUNIQUÉ

"Before COP 21, the Institute, working with the Agence Française de Développement (AFD) and the Prince Albert II of Monaco Foundation, presented an international conference on November 9, 2015 called "Mitigating methane emissions: From science to innovative solutions." This conference paved the way for two events on the same theme, held on December 8 at COP 21.

The Foresight Committee salutes the immense utility of these COP 21 side events in the search for solutions to the huge challenge of stabilizing the average temperature of the Earth. The Committee very much hopes that stakeholders, and especially private firms and policy-makers across the world, will take rapid and effective methane mitigation steps. The Committee therefore supports the Climate and Clean Air Coalition initiative, which organized a side event on the topic of short-lived climate pollutants, primarily methane.

Solutions of proven efficacy in methane mitigation are already available. In the agriculture sector, it is possible to reduce methane emissions from rice cultivation by modifying irrigation practices. These measures could be put into practice wherever possible. For landfill, methane capture to produce electricity has a good cost-to-efficiency ratio and could be stepped up. For methane leaks associated with oil & gas operation and distribution, the main sector players already possess the resources, technologies and means to drastically reduce these emissions.

Private-sector players have a crucial role to play in implementing these solutions. Appropriate regulation, at both the national and infra-national levels, should make it possible to accelerate their impact."

Highlights of 2015

January

- **Presentation at the symposium *Réinventer l'Alliance Sciences Sociétés, un impératif démocratique*** (Reinventing the Science and Society Alliance, a democratic imperative) on January 8 in Paris, on the theme "Publish and capitalize on the works of all players." The Institute presented FACTS Reports and its original initiative dedicated to capitalizing on actions in the field.

February

- **Participation in the Delhi Sustainable Development Summit** organized by The Energy and Resources Institute (TERI) on February 5-7 in India. The summit brought together numerous Indian, Asian and European players and policy-makers around the theme of "Sustainable Development Goals and Climate Change."

April

- **Participation in the 2015 Paris Assembly**, organized April 16-18 by Sage Bionetworks, the Centre de Recherches Interdisciplinaires and Nesta. Its theme, "Connecting Open Research, Open Education and Open Social Impact," brought together more than 200 participants from all over the world: project leaders, scientists, private-sector companies, educators and social entrepreneurs.
- **Publication of a FACTS Reports special issue on "Migration and health"** prepared with the contribution of David Ojcius from the University of the Pacific in California.

May

- **Start of preparations for two new FACTS Reports special issues** to be published in 2016: the first on the environmental and social acceptability of major industrial projects, and the second on the theme of smart cities.

June

- **The Institute, in conjunction with the Foundation for International Development Study and Research (FERDI), launched a call for articles** for a FACTS Reports special issue on the theme of "Decentralized rural and peri-urban electrification in emerging and developing countries," to be published mid-2016.
- **Meeting of the Foresight Committee** on June 27 and 28 in Prague on the theme of energy efficiency.
- **Meeting of the Board of Directors** and Annual General Meeting of the Veolia Institute on June 29.

July

- **COP 21 label awarded by the French government** for organization of the international Conference on Methane in November as a contribution to COP 21.



Conference on methane mitigation on Nov. 9. International panel, session on solutions from the waste sector.



Panel at the COP 21 side-event on Dec. 8, at le Bourget.

October

- ▶ **Participation in the Water Science and Technology Board meeting**, National Research Council, in Washington D.C. on October 1 and 2.
- ▶ **Organization of a conference and debate on October 22 in Paris around Olivier Godard**, Senior Researcher at the CNRS, France's national center for scientific research, on "Ethics, Justice and the Marketplace: application to greenhouse gases and biodiversity." On this occasion, which gathered a hundred participants, he debated with Bernard Chevassus-Au-Louis, former President, National Museum of Natural History, and Jean-Paul Bouttes, Director of Strategy, Prospective and International Relations, EDF. The meeting was organized after publication of this highly respected environmental economist's book *Environnement et développement durable. Une approche méta-économique* (Environment and sustainable development. A meta-economic approach).



Olivier Godard and Jean Pierre Tardieu on October 22.

November

- ▶ **International conference on "Mitigating methane emissions: From science to innovative solutions"**, on November 9, at the Economic, Social and Environmental Council in Paris, in partnership with the Agence Française de Développement (AFD) and the Prince Albert II of Monaco Foundation. The goal of the forum was to share state-of-the-art scientific knowledge on short-lived pollutants, particularly methane, and to promote mitigation solutions in the main generating sectors: agriculture, oil & gas, and waste.

December

- ▶ **Meeting of the Foresight Committee** on December 5 and 6 in Paris for forward-looking discussions on the climate.
- ▶ **Organization on December 8 at COP 21 in Le Bourget of two side events** presenting feedback from the November 9 conference.
- ▶ **Launch of an appeal by Foresight Committee members** to public- and private-sector organizations for ambitious action on methane, on December 11.
- ▶ **COP 21 ratified the Institute's "Observer NGO" status** granted by the United Nations Framework Convention on Climate Change.

Success of the COP 21 “Methane” initiative

The Institute organized its contribution to COP 21 through an original initiative organized in two stages on a standout theme: methane.

Why contribute to COP 21?

COP 21 was an important milestone since it was crucial that the conference lead to a new international agreement on the climate, with the goal of keeping global warming to below 2°C. It was the most important diplomatic event hosted by France for many decades, and also one of the biggest climate conferences ever organized.

France wanted to ensure participation by civil society and promote an agenda of solutions complementing the commitments made by the different States. Strong mobilization of non-governmental players was also a priority promoted by the UNFCCC, to foster emergence of concerted and sufficiently ambitious actions for tackling the climate challenge.

In its role as a facilitator between communities and a catalyst for analyzing future trends, the Veolia Institute and its partners set the goal of contributing to the movement. The Institute wanted to take advantage of this big international gathering to share knowledge on methane and solutions for tackling it, and to raise all stakeholders' awareness of the vital importance of this planetary challenge.

Why methane?

Methane (CH₄) is a greenhouse gas second only to carbon dioxide (CO₂) in its contribution to climate change. Methane emissions account for 32% of radiative forcing in the atmosphere, which is why elimination of a methane source has substantial effects on overall radiative forcing in the medium and long term.

In addition, the two gases behave very differently. Methane is a short-lived but intense climate pollutant: it has a shorter lifespan in the atmosphere than CO₂ but a much higher impact. Its global

warming potential (GWP) varies considerably according to the timescale chosen: over 20 years, its impact per unit is 84 times that of CO₂ and over 100 years 28 times that of CO₂ (source IPCC, 2014). Whereas CO₂ has a longer lifespan in the atmosphere, half of methane emissions disappear during the first decade, after which it decomposes to form other gases, notably CO₂, which remain in the atmosphere.

“ We have two levers for inverting the greenhouse gas emissions curve. ”

D' Ramanathan
Professor of Atmospheric
and Climate Sciences, University
of California, San Diego

The two gases should therefore be considered separately and different treatment solutions adopted, bearing in mind that ambitious initiatives for both gases will be essential to achieve the target set by the international community.

Acting on methane is therefore the second lever for substantially mitigating greenhouse gas emissions, in both the northern and southern hemispheres. This action will have very significant short-, medium- and long-term impacts on climate change.

Following on from the UNEP initiative on this point (the Climate and Clean Air Coalition, or CCAC), the Institute considered it essential to highlight methane emission mitigation as the issue is not yet sufficiently addressed given its impact on the climate.

A two-stage initiative

► STAGE 1 - INTERNATIONAL CONFERENCE AHEAD OF COP 21

The international conference organized in partnership with the Agence Française de Développement (AFD) and the Prince Albert II of Monaco Foundation on November 9, 2015 brought together almost 150 participants at the French Economic, Social and Environmental Council in Paris. During this conference, international experts shared their scientific knowledge, examined existing mitigation options in the main emitting sectors (agriculture, oil & gas and waste) and analyzed the economic and financial mechanisms that would facilitate implementation of these solutions.



The event was held under the official COP 21 label awarded by the French government.

THE HIGH-LEVEL SPEAKERS MOBILIZED FOR THE EVENT

Jean BOGNER, Research Professor Emerita in the Department of Earth and Environmental Sciences, University of Illinois at Chicago

Tanguy de Bienassis, Financial analyst in the Climate and Carbon Finance Unit, World Bank

Jean-Paul Delevoye, Chairman of the French Economic, Social and Environmental Council (CESE), former Minister and Mediator of the Republic

Benjamin Dessus, Chairman, Global Chance

Josep Fernandez, Technical director, Veolia Latin America and Iberia

Antoine Frérot, Chairman and Chief Executive Officer, Veolia

Gaël Giraud, Chief Economist, *Agence Française de Développement* (AFD)

Pierre Marc Johnson, Former Prime Minister of Quebec, Chief negotiator for the Government of Quebec in the framework of the Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union, Chairman of the Veolia Institute's Foresight Committee

Roland Kupers, Associate Fellow, Oxford University, and Advisor, representing Drew Nelson, Environmental Defense Fund (EDF)

Helena Molin Valdes, Head of the Secretariat, Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants, United Nations Environment Programme (UNEP)

Carolyn Opiyo, Livestock Policy Officer, United Nations Food and Agriculture Organisation (FAO)

John Parkin, Deputy Head, Plant & Engineering, Cleansing and Solid Waste Department (DSW) of the eThekweni Municipality, South Africa

Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences at the Scripps Institution of Oceanography, University of California, San Diego

Thomas Stocker, Professor of Climate and Environmental Physics at the Institute of Physics, Berne University, and former Co-Chair of Working Group 1 of the Intergovernmental Panel on Climate Change (IPCC)

Reiner Wassmann, Coordinator of the research program on rice and climate change IIRI/CGIAR, the International Rice Research Institute (IRRI)

► STAGE 2 - COP 21 SIDE EVENTS PRESENTING CONFERENCE OUTCOMES

To maintain the momentum of November 9, at the official COP 21 venue, the partners presented the main findings on state-of-the-art scientific knowledge on methane, the innovative solutions that can be envisaged in the waste sector, and reflection on the economic and financial instruments for implementing these solutions.

Two such side events took place at Le Bourget on December 8:

- The first, in partnership with the U.S. Department of State and the International Solid Waste Association (ISWA), in the official area intended for COP 21 delegates and negotiators.
- The second, in partnership with the Agence Française de Développement (AFD) and the Prince Albert II of Monaco Foundation, aimed at civil society actors and held in the Climate Generations areas.

Methane initiative - COP 21

Methane facts

32%
of global
greenhouse gas
(GHG)
emissions

Methane
GWP*
= 84 x
CO₂ GWP over a
20-year
horizon

A short-lived
climate pollutant
12 years

* Global Warming Potential

The Veolia Institute - Involved in the 2015 Paris Climate Conference

150 heads of States and Governments, 40,000 visitors.
The objective: keep global warming below 2°C.

How?



*By proposing innovative solutions
to mitigate methane emissions*



in the major emitting sectors



Agriculture



Oil/Gas



Waste

“Label COP 21” for the Conference on methane

11.09.2015

An international Conference before COP 21 in Paris

In partnership with the Agence Française
de Développement and
the Prince Albert II of Monaco Foundation



www.conference-methane.org
www.institut.veolia.org/en



12.08.2015

2 side-events during the COP 21 Paris - Bourget

#1 In the official restricted area
In partnership with the U.S. Department
of State and the International Solid Waste
Association (ISWA)

#2 In the “climate generations” areas
In partnership with the Agence
Française de Développement and
the Prince Albert II of Monaco Foundation



Accreditation as an
“Observer NGO”
by UNFCCC



YouTube
VeoliaInstitute



Twitter
@InstitutVeolia

The Foresight Committee appeal

At the end of the Foresight Committee meeting of December 5 and 6, which presented the main lessons learned from the November 9 conference, the Committee members launched an appeal to the international community of public and private policy-makers for ambitious action on methane.

(See *extracts p. 7*)

Publications

As for all its works, the Institute makes the contributions available under open access on its website:

- the complete program of the conference and the side events;
- the speakers' presentations;
- a résumé of the international conference and the main conclusions;
- a video summary of the conference;
- photos of the events;
- the article for the e-journal Outreach published on December 11, 2015;
- the communiqué containing the appeal made by members of the Foresight Committee.

FINDINGS AND KEY DIRECTIVES OF THE METHANE INITIATIVE

- ▶ **A RAPID IMPROVEMENT IN THE OIL & GAS SECTOR**, which is the most concentrated source and where leak-prevention measures would rapidly bring significant outcomes.
- ▶ **A REDUCTION IN LANDFILL METHANE EMISSIONS, WHICH IS TECHNICALLY FEASIBLE** and could be profitable, with support mechanisms to promote re-use of the gas captured.
- ▶ **THE AGRICULTURE SECTOR ALSO HAS HIGH POTENTIAL FOR METHANE MITIGATION**, and we need to devise innovative strategies given the diffuse nature of sources and the social systems dependent on this source of income.
- ▶ **APPLICATION OF A CARBON (AND POSSIBLY METHANE) PRICE** to integrate the negative externalities associated with emissions and adopt differentiated accounting tools to treat both gases (CO₂ and CH₄).
- ▶ **MORE ACCURATE DATA IS REQUIRED** to dispel uncertainties about the number of sources and the behavior of the emissions.

The commitments made by the participating countries during the COP 21 process (Intended Nationally Determined Contributions, or INDC) aimed at reducing greenhouse gas emissions do not go far enough: despite these commitments, emissions will have increased by 20% in 2030 compared to their 2010 level. It is therefore necessary to find additional levers for action, and methane mitigation is one that could have significant and comparatively rapid outcomes since the solutions already exist.

AGENDA

- ▶ **Continue to raise awareness around the importance of methane mitigation**, by monitoring scientific advances in this field and disseminating the key messages to public policy-makers and civil society actors to ensure that it is incorporated in implementation of the climate plans set forth in the Paris Agreement.

FACTS Reports: capitalizing on actions in the field

FACTS Reports

A bottom-up initiative aimed at capitalizing on the actions and experiences of those working in the field and helping them disseminate their practices more effectively.

The main objective of FACTS Reports is to help players working in the field, international organizations, national agencies, and political and economic policy-makers communicate, share information and disseminate the best practices and lessons learned from implementing their programs. Numerous projects are rolled out in developing and emerging countries to try to resolve problems related to the economy, health, the environment, agriculture, education and development in general. Many opportunities exist to learn lessons from the outcomes of these projects, but few publications are devoted to this work.

The Institute therefore designed this journal, created in 2007, as a platform for collecting and sharing knowledge, with the main criteria for publication being the useful and reproducible nature of the actions described. It chose to disseminate the articles primarily via electronic channels and in open access, so as to reach the widest possible communities of players.

In 2015, two changes were made to the general thrust of the journal:

- broadening of its thematic scope beyond the combat against poverty, to incorporate in environmental and social issues;
- diversification of its targets authorship and readership, aiming to reach NGOs as well as field workers and micro-entrepreneurs to better reflect the diversity of players involved at the local level.

In this way, the Institute hopes to strengthen its tools for capitalizing on existing initiatives, which enable it to identify emerging practices that most closely address the concerns and needs of local populations, and to forge links with key stakeholders across the world.

Development and special issues in 2015

April saw the publication of a special issue on the theme of “Migration and Health” focusing on the United States. Given the growing diversity of the American population, researchers are prompted to look at new models for promoting public health. The articles in this issue, prepared in collaboration with David Ojcius from the University of the Pacific in California, argue for a broader conception of health protection for migrants (access to healthcare services for urban populations, health practices in the country of origin, barriers to use of healthcare services).

In addition, articles were published throughout the year, notably concerning the fight against insecurity through urban agriculture initiatives in the favelas of Rio de Janeiro, the socioeconomic consequences of deploying improved fuel efficient stoves in Uganda, and a survey of the progress of conservation agriculture worldwide.



The layout of the journal was also completely redesigned (see box item on next page).

With this special issue supplementing articles published throughout the year, the journal is set to continue growing and has enormous potential for expansion.

Development of the journal also entails preparation of further special issues, to be published in 2016:

- **“Environmental and social acceptability of major industrial projects”**, coordinated by David Menascé (Azao consulting). Its goal: to analyze the societal and environmental challenges posed by high-impact industries and show how we can move from a risk-management approach to an approach based on wealth creation shared with the local stakeholders. This issue will draw on various feedback from projects conducted in Ghana, India, Burkina Faso, Vietnam and France.
- **“Decentralized rural and peri-urban electrification in emerging and developing countries.”** In June 2015, the Institute launched a call for articles jointly with the Foundation for International Development Study and Research (FERDI). This special issue will aim to draw up an inventory of what has been achieved in the field of decentralized electrification in the last 15 years and gather feedback on what worked and what did not. It targets projects promoting access to electricity for poor communities, with particular emphasis on renewable energy, whether they concern installation of new equipment or management and maintenance of this equipment.
- **“Smart cities”**: the importance of information and communication technologies in improving management of cities has been highlighted for many years through the concept of smart cities. Quality of life, optimization of the city, the collaborative economy, citizen participation—all aspects of urban management are concerned. This FACTS special issue will aim to analyze the way smart cities can contribute to enhancing urban dynamics, greater optimization of resources and, in the last analysis, contribute to environmental conservation.

A MORE DYNAMIC LAYOUT

To highlight the “bottom-up” model of FACTS Reports, which is what makes it such an original publication, the layout was redesigned to offer a more dynamic reading experience: more attractive content with more illustrations and quotes plus highlighting of key messages. While retaining the serious approach of the journal, whose content is reviewed by referees, the new layout will facilitate promotion of the operational, in-the-field nature of the writers’ experience and projects.



AGENDA

► Parution of special issues

April: Environmental and social acceptability of major industrial projects
June: Decentralized rural and peri-urban electrification
December: Smart cities

► Feedback presentation seminars

For each special issue, the Institute will systematically organize a series of seminars, as it has sometimes done in the past, with the aim of capitalizing even further on its work and encouraging interactions between players.

► Developing the journal by addressing new themes

Preparation of further special issues to be published in 2017, notably on the theme of resilience.

S.A.P.I.EN.S: promoting a multidisciplinary approach

SAPIENS



Taking a comprehensive, integrated approach to scientific knowledge with the aim of responding to the complexity of environmental, social and economic issues.

Due to the complexity and interdependence of environmental, social and economic issues, every effort must be made to promote dialogue between the disciplines. S.A.P.I.EN.S was launched in 2007 on the premise that a comprehensive, integrated approach to scientific knowledge is essential to respond to issues of sustainable development.

S.A.P.I.EN.S publishes critical reviews and analyses that must, in particular, avoid using overly specific terminology to ensure that their content is accessible to readers coming from all disciplines.

REMINDER OF THE BASIC FEATURES OF S.A.P.I.EN.S

- ▶ **Articles providing a broad overview of a given topic** to promote a multidisciplinary approach.
- ▶ **Peer-reviewed**, to guarantee the quality and scientific objectivity of the content.
- ▶ **Published in open access**, to ensure that the content is freely accessible to everyone.
- ▶ **Published online**, for ease of circulation.



Articles published in 2015

Whether through the diversity of the scientific themes tackled or the trends they anticipate, the articles clearly illustrate the original positioning of S.A.P.I.EN.S and the contribution it makes to sharing knowledge and debate around ideas.

Prevention and Control of Air Pollution in China: A Research Agenda for Science and Technology Studies

Rodolfo Andres Hernandez

Abstract: Air pollution in China has reached critical levels. It is characterized by heavy coal smoke and high levels of ozone and particulate matter. Starting in 2011, with the twelfth five-year plan, prevention and control of air pollution have entered into a new “transitional phase,” guided by the principles of sustainability and energy conservation, and intensified by pressure from society. This article is divided into two parts: first, it presents the most important changes, problems and advances made in this transition; then it illustrates the way in which science and technology research can bring new ways of understanding the links between knowledge and policies as concerns air pollution in China.

The Challenges of Temporality to Depollution & Remediation

Carmella Gray-Cosgrove, Max Liboiron and Josh Lepawsky

Abstract: Complete depollution and effective remediation are impossible for many categories of waste due to their temporality, particularly in the case of long-lasting or permanent waste such as nuclear waste, ocean plastics, orbital debris and persistent organic pollutants (POPs). Even if they can

be spatially moved and “cleaned up,” the hazardous or toxic substances they contain persist over time, which means that remediation becomes more an exercise of spatial displacement of materials rather than their elimination. Although different disciplines have been aware of these problems for years, no interdisciplinary overview had been proposed to date. The authors remedy this by proposing a study based on the temporality of waste, taking into account a range of research work, case studies and theories drawing from archeology, biology, environmental science, geography, geology, history, science and technology studies, and sociology.

Laudato si': the beauty of Pope Francis' vision

Andrea Tilche and Antonello Nociti

Abstract: For the first time in the history of the Church, the encyclical letter of Pope Francis, “Laudato si’,” published in May 2015, addresses the subject of protection of the environment, “the care of our common home.” This rich and complex document analyzes the causes of today’s ecological challenges, acknowledging the scientific consensus but adding an original analysis of the social, cultural, ethical and spiritual dimensions that are associated with the degradation of the environment. In their analysis, the authors consider the appeal to action as the most innovative element and see, in this positive narrative, not only the urgency and immensity of the challenge we face, but also a unique opportunity for humankind to show what it can do when it assumes its responsibilities.

Moving to metrics: Opportunities and challenges of performance-based sustainability standards

Michael Veale and Rafael Seixas

Abstract: The rise of global sustainability standards has led to an energetic discussion about their consequences and outcomes. Almost all standards today are built around “technology-based” indicators, which prescribe certain practices assumed to lead to sustainable outcomes. However, we are now seeing the emergence of the first “performance-based” metric sustainability indicators, directly measuring outcomes without prescribing particular methods to reach them.

Based on the example of a new production standard of this type in the sugarcane sector, and the most recent advances in multidisciplinary research, this article presents the opportunities and challenges of such an approach, suggests systems to explore and an agenda for future research.

Future developments

The Veolia Institute will continue to develop this ad hoc tool for collecting and comparing scientific ideas. Its multidisciplinary approach is more than ever essential to encourage emergence of information for understanding global, complex and multi-player challenges and attempting to anticipate transformations and disruptive innovations.

The Institute will also continue to establish strong, high-profile editorial partnerships and publish jointly edited special issues, especially for preparing or promoting its international conferences. Thanks to this unique *modus operandi*, S.A.P.I.EN.S offers its partners a purpose-built knowledge capitalization tool and an invaluable platform for sharing and spreading knowledge.

AGENDA

► Special issue for the 2017 Conference

Launch of a call for papers for a special issue in connection with the Institute’s 2017 Conference on natural resources, addressing questions of accessibility, availability and scarcity.

► A structured partnership

The Institute aims to establish a partnership anchoring the journal to a leading scientific organization with cutting-edge multidisciplinary expertise in order to fully leverage the impact of S.A.P.I.EN.S.

Program of foresight studies in 2016

The Institute is introducing a new program of foresight studies, pursuing the same collaborative approach based on interaction with researchers and investigations into constantly changing issues.

Following the change in management team at the beginning of 2015, the Institute defined a new program of studies. Its objectives remain the same:

- **to play its role in providing insights** into issues at the interface between society and the environment;
- **to contribute to public debate** through forums for discussion and dialogue;
- **to raise Veolia employees' awareness of emerging topics** that could impact the sphere in which the company operates.

The Institute's method is unchanged: it relies on its international network of academic and institutional partners and uses interaction and reflection to detect early signs of change, come to grips with new ideas and anticipate major environmental, social and societal transformations.

The studies validated in 2015 will be rolled out in 2016.

Common goods

Any foresight analysis concerning the environment, biodiversity and climate disruption—and, more generally, the challenges facing the planet—leads sooner or later to questions relating to common goods. How can they be defined? What common goods, such as natural resources, public health and clean air, are under threat? The inter-generational responsibilities that are particularly visible when it comes to the climate immediately segue into questions of national and world governance in managing common goods.

On top of these questions come the semantic confusions between the common good, common goods, public goods, the commons, what is common—a vocabulary frequently used in public debate and that has distinct interpretations and usages depending on the actors involved and their culture.

The Institute therefore decided to address a new avenue of work on common goods through a cycle of reflection throughout 2016. The end goal is to clarify our understanding of these concepts, come to grips with the underlying challenges and anticipate trends in governance in this field.

The work program will be organized around five workshops. The first will focus on the current status of common goods — the state of the law and current practices and an overview of recent research work — while the other workshops will analyze particular planetary issues (water resources, climate) or societal issues (management of knowledge and data, relations between generations).

Natural resources, accessibility and availability

Economic development has traditionally been fueled by uncontrolled consumption of natural resources, combined with the search for new sources capable of meeting the needs of a growing population aspiring to better living conditions. For many years, the scientific community has been sounding the alert over development that overwhelms the capacities of the planet and damages the physical-chemical cycles of soils, the air and the oceans. It is now vital to rethink the links between economic development and use of resources.



How can we envisage the economy of tomorrow, based on energy transition and ultra-fast development of NICTs, while at the same time coping with an increasingly large and urbanized population, the emergence of new needs and the growing scarcity of certain resources, together with problems of access in certain regions? Must we fear widespread scarcities or see this situation as an opportunity to innovate low-carbon development that respects the world in which we live? **This is the theme of the Veolia Institute's 10th International Conference, to be held at the end of 2017.**

Exploration of this issue, identified as an avenue for work back in 2014, is being organized in several steps so as to define the Conference's final, differentiating positioning. In October 2014 the Institute organized a workshop on the theme of "Strategic raw materials and energy transition" with Olivier Vidal, CNRS Director of Research at the Grenoble Institute of Earth Sciences. For 2016, it proposes a cycle of seminars on raw materials and market trends around Philippe Chalmin, Professor of Economic History at Paris Dauphine University and founding chairman of the Cyclope study group.

These contributions will make it possible to identify distinguishing elements for foresight analysis, which the Institute will then be able to share at its international conference.

Resilience

The Institute is continuing to explore the theme of resilience by building on the work done for the European research project RAMSES on adaptation of cities to natural disasters and climate change.

What concepts, actors and achievements exist at the level of the regions? Should we confine our attention solely to climate resilience or also resilience to health crises or an economic shock?



A great deal of scientific literature and many definitions are available in this field, together with a large number of initiatives. The Institute's goals are to understand emerging concepts, and to identify both the experts playing a leading-edge role on the international level and innovative local actors implementing this concept on the ground.

The 2016 initiatives on this theme include:

- **Preparation of a special issue of FACTS Reports** (to be published in 2017), to capitalize on actions in the field led by cities, non-profit networks or entrepreneurs, and draw lessons from resilience initiatives in a given region.
- **Joint organization of a symposium at the Centre Culturel International de Cerisy (CCIC)** in Normandy on this theme, in September 2017. In line with the CCIC approach, the symposium will bring together researchers, academics, students and artists for multidisciplinary and creative discussions on this theme.

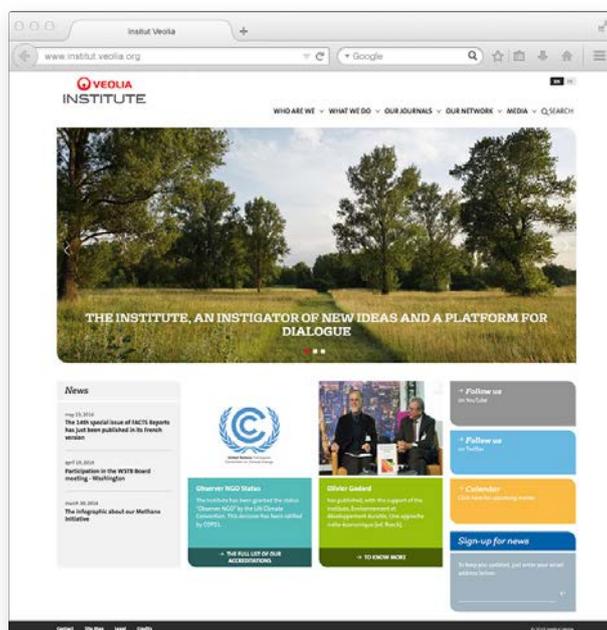
This study program corresponds well to the Institute's mission, reaffirmed in 2015, to be an instigator of new ideas and provide insights both for public debate and for Veolia on topics at the interface between society and the environment.

New visual identity and 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 modernized its communication tools in 2015:

- Launch of a **new website** in November to provide a clearer view of its activities and content.
- Creation of 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.
- Overhaul of the online **Veolia Institute Letter** sent out twice a year to its international network.
- Reactivation of the **Twitter @InstitutVeolia account** in conjunction with COP 21, to reach an increasingly broad audience.
- Production of a **video summary** of the Methane Conference in two languages and enhancement of the **Youtube channel**.



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Analysis, anticipation, dialogue

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