

# ADDRESSING GLOBAL WARMING

## FIRST ANNUAL uOTTAWA PROGRESS REPORT

Universities have a unique role to play in global efforts to ensure a sustainable future for our planet and the generations to come. At the University of Ottawa, we are committed to doing our part. In 2015, we were the first Canadian university to sign the Montreal Carbon Pledge.

Following constructive debate on campus, the Board of Governors tasked the University with developing a holistic approach to combatting global warming and climate change. In 2016, we vowed to reduce the carbon footprint of our investments, in accordance with Canada's national climate commitment.

We took on this challenge by making clear commitments that combined continued teaching and research excellence, efficient management of our operations and facilities, and responsible long-term portfolio investment. To follow up on these commitments, I am pleased to present the first annual Report to the Board of Governors on Sustainability. This progress report outlines key, concrete actions taken by our University during the last year.

I am proud of our accomplishments to date, but there is still much to do. Our work to make sustainability a central priority in all aspects of what we do will take time to show progress. However, we look forward to reducing our environmental footprint and empowering our employees and students to continue to engage in sustainable practices.

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**JACQUES FRÉMONT**

PRESIDENT AND VICE-CHANCELLOR



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# Climate Change: An Overview of Academic Activities

The April 2016 report of the Finance and Treasury Committee to the Board emphasized the central role of academic solutions to the global problems posed by climate change:

In our view, uOttawa can have the greatest impact in advancing climate solutions by continuing to take a “holistic approach.” This includes managing our own operations and facilities in an exemplary way, but also taking the lead in research relating to climate and environmental problems, and educating the green leaders of tomorrow. These latter two are contributions that universities are uniquely positioned to make... (7)

The report cited examples of how the University of Ottawa has already begun to address these issues in the classroom, in the laboratory and in academic outreach, and recommended the creation of a *Clean Innovation Research Fund* and “a forum to stimulate discussion and debate on campus on how uOttawa can best enhance its impact in teaching, research and public engagement to combat climate change risks.” (9) This section provides additional information on the academic initiatives currently in place, in planning or under consideration to help address climate change by applying academic expertise in all its forms. As will become clear, despite the fact that we often think of climate change as a scientific problem, important interdisciplinary and multidisciplinary work is underway that engages many areas of study at the University.

## TEACHING PROGRAMS

It is now clear that the economic and political consequences of climate change, including such factors as the impact of global warming on agricultural production and the manifold potential risks to human health, are of vital importance to humanity. In the Faculty of Arts, three interdisciplinary programs in environmental studies (the honours BA, the major and the minor) provide a

global assessment of the complex relationships between human society and our physical environment, and include courses in the humanities and the social and natural sciences. Field camps in the Department of Geography, Environment and Geomatics and new courses on “Animal Studies” and “Future Earth” to be introduced in the Fall 2017 and Fall 2018 terms, respectively, provide valuable complementary material.

The [Institute of the Environment](#), led by Professor Stewart Elgie of the Faculty of Law, draws together faculty members not only from law but from across the University: from the faculties of Science, Engineering, Health Sciences and Arts, and from the Telfer School of Management. The institute is home to an interdisciplinary master’s program in environmental sustainability, and a new PhD program in the same area should be ready for 2018–19. Climate change per se is one of four issues at the core of the program; the others, all intimately related to climate change, are pollution, natural resource exploitation and overexploitation, and biodiversity loss. For each of these important issues, the program defines, and attempts to identify and assess, the scientific evidence for its causes and consequences, its socioeconomic implications, the statutory, regulatory or policy instruments that have been employed to resolve or mitigate it, and the extent to which such measures have they been effective. It is important to note that two Canada Research Chairs from the Faculty of Social Sciences are members of the institute and thus are actively involved in its teaching and research activities. That faculty also offers an Honours BA in Environmental Economics and Public Policy.

In the Faculty of Science, the [multidisciplinary undergraduate program in Environmental Science](#) (EVS) includes three streams focusing on different aspects of the field, all with strong connections to climate change: conservation and biodiversity, global change, and environmental geochemistry and ecotoxicology. The program adds complementary courses from several disciplines to a core of traditional science courses, in order to address a variety of scientific and societal implications of environmental problems.

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**In our view, uOttawa can have the greatest impact in advancing climate solutions by continuing to take a “holistic approach.” This includes managing our own operations and facilities in an exemplary way, but also taking the lead in research relating to climate and environmental problems, and educating the green leaders of tomorrow.** ”

Members of the Faculty's Catalysis Centre are conducting work in “green chemistry,” which includes graduate teaching in the form of supervision, and chemistry students have access to a course in environmental chemistry, which is compulsory for all students in the EVS program.

The Faculty of Engineering offers a broad spectrum of undergraduate and graduate program options in fields related to the environment; these include the PhD in Environmental Engineering, Master of Applied Science and Master of Engineering in Environmental Engineering, and three undergraduate degree options in civil, chemical, and electrical engineering: Environmental/Water Resources Option (Civil), Environmental Engineering (Chemical), and Power and Sustainable Energy (Electrical). Student work in engineering is by no means limited to these dedicated program options, however; a number of graduate theses in civil and chemical engineering in recent years have been devoted to topics in climate change forecasting, modelling and impact assessment.

## ACADEMIC OUTREACH AND PROMOTION OF ENGAGEMENT

In addition to the teaching and learning initiatives described above, the University of Ottawa conducts a number of activities in the area of climate change that may best be characterized as outreach aimed at increasing public awareness of the issues. An inventory undertaken in August 2016 has revealed that a number of such activities already exist, but that the coordination of these activities could be improved. As well, the inventory provided several worthwhile ideas from faculty members working in this area. During 2017–18, the University intends to improve its coordination and effectiveness in this area and to test some of these ideas for public outreach in practice.



## RESEARCH ACTIVITIES

Professors teaching in the above programs are also highly active researchers who have put together dynamic teams of undergraduate and graduate students, postdoctoral fellows and technicians. Together, they manage to obtain millions of dollars from external funding sources, from a variety of partners: governments, major industry and private foundations. The University assists them at all stages of their projects, from preparing the grant application to producing final financial reports, providing administrative support, startup funds, research assistants, course releases and first-class infrastructure. With these combined resources, our research teams document climate change and its repercussions, enabling those in authority to make better decisions and the Canadian population to be informed. Our researchers also work to find innovative solutions to fight climate change or limit its most harmful effects. They are passionate and deeply convinced that they can make a difference, and that passion helps push our students to excel.

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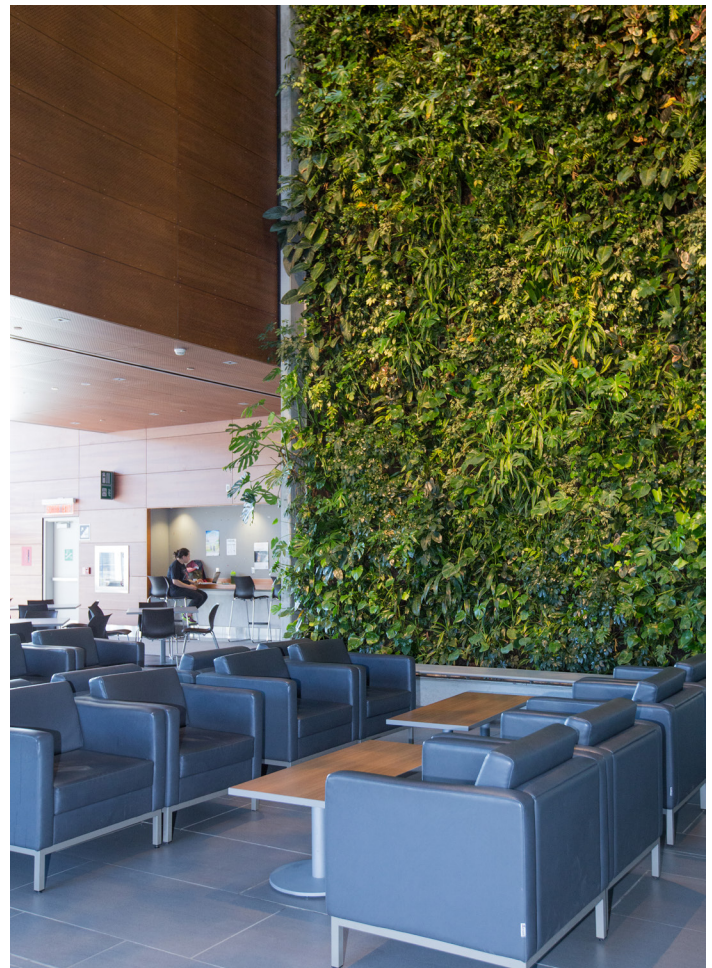
**By 2020, we will have met our commitment of \$1.5 million through the Clean Innovation Research Fund. This major sum, along with external donations and government grants, will have a significant impact on Canada's capacity to be an international actor in the shared fight against climate change and environmental deterioration.** ”

With the April 2016 announcement establishing a Clean Innovation Research Fund (CIRF), the University embarked on funding an entire series of new research initiatives on the environment and climate change. As part of this new approach, the University has drawn on its resources allocated to the CIRF to:

- Obtain two new federal grants through the NSERC CREATE program: one for Prof. Karin Hinzer for clean technology (for example, solar energy) and one for Prof. Daniel Figeys for water treatment
- Obtain a new partnership grant from SSHRC: for Stewart Elgie to study the link between economic growth and environmental protection
- Publish a special issue of *Research Perspectives* on green technologies
- Launch three new Canada Research Chairs: Environment, Society and Policy (Prof. Jackie Dawson), Climate and Energy Policy (Prof. Nicholas Rivers) and Engineered Advanced Materials and Devices (Prof. Ghassan Jabbour)
- Obtain three new Fulbright Chairs for visiting professors, all dedicated to research on the environment and climate change
- Fund a series of on-campus lectures to discuss different matters relating to the environment, such as the Bromley and Fulbright talks

Engineering professor Karin Hinzer's project is a good example of the spin-offs of our research efforts. We expect that over the duration of her TOP-SET program on production of high-efficiency solar energy, a hundred master's and PhD students will receive specialized training, strengthening our research teams but also filling industry's needs for qualified people to deploy cutting-edge technologies and apply new knowledge on the ground, to benefit society.

These are but a few examples illustrating how investments were targeted to address global warming issues in support of the CIRF initiatives. A full table, describing the various projects, is available in the appendix. It shows that by 2020, we will have met our commitment of \$1.5 million through the Clean Innovation Research Fund. This major sum, along with external donations and government grants, should have a significant impact on Canada's capacity to be an international actor in the shared fight against climate change and environmental deterioration.



# Finance and Treasury

## 2017 ANNUAL PROGRESS REPORT

The 2016 report *Addressing Global Warming: The uOttawa Response* outlined a wide range of initiatives concerning the University's teaching programs, research, facilities management and investment management.

To support uOttawa's leadership role in addressing global warming, and adhere to its mandate, the Finance and Treasury Committee has been focusing its efforts in the area of investment management.

In line with the holistic approach and steps outlined in the report, the Finance and Treasury Committee has established the following steps towards gradually tilting the portfolio away from fossil fuels and establishing a framework to measure effectively such a shift in the future:

1. Establish measurements and a proper starting point to track shifts in long-term portfolio.
2. Identify and consider new indices and/or benchmarks that incorporate responsible investment principles, in addition to or in place of any of the above.
3. Carry out annual measurements of progress and report results to the University community.
4. Incorporate these results into the consideration and updating of investment portfolio policies.
5. Consider these results, to the extent it is appropriate, in evaluating fund managers' performance.
6. Create a Clean Innovations Fund over time with an initial \$10 million, using funds from the existing portfolios and donations received for this purpose.

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### 1. Establishment of a proper starting point to measure shifts in the long term portfolio

The starting point to measure shifts in the long-term portfolio will be the University's 2016 rankings in the following:

- a. PRI (Principles for Responsible Investing) ranking versus median respondent
- b. Montreal Carbon Pledge
- c. Environmental social and governance (ESG) implementation by the investment managers of the portfolio

These measurements have been identified by the Finance and Treasury Committee as proper starting points to measure shifts in the portfolio over time. All three measurements are to be annual; the year 2016 will function as the base year. The committee recommended that in future annual progress reports these and any other new measurements be presented.

#### a. University's PRI ranking versus median respondent

As a UN PRI signatory, the University is required to publicly report on the breadth and level of responsible investment activities within the portfolio. The 2016 scorecard for the University was as follows:

## SUMMARY SCORECARD

	AUM	MODULE NAME	YOUR SCORE	<div> <div></div> <div></div> </div> <div> Your Score Median Score </div>
		01. Strategy & Governance	A	
Indirect - Manager Selection, Appointment & Monitoring	>50%	02. Listed Equity	A	
	10-50%	03. Fixed Income - SSA	E	
	<10%	04. Fixed Income - Corporate Financial	A	
	<10%	05. Fixed Income - Corporate Non-Financial	A	
	<10%	06. Fixed Income - Securitised	Not reported	
	0	07. Private Equity	Not reported	
	<10%	08. Property	B	
	<10%	09. Infrastructure	B	

The Finance and Treasury Committee concluded that ESG (environmental, social and governance) scores in the public markets area of equities and certain segments of fixed income are well ahead of the PRI universe and that ESG scores in the private markets area are in line with PRI adherents.



## b. Montreal Carbon Pledge

As part of the Montreal Carbon Pledge, the carbon footprint data for the equity portfolios of the University is independently calculated. The following table reflects the results for 2016:

CO2e/M\$, tonnes	uOttawa	Equity Index	% below index
2016	79.0	163.1	41.57%
2015	202.3	218.2	7.86%

Source: MSCI

Index data remains difficult to interpret, as carbon footprint calculations are based on index composition and weighted by market pricing. As the measurement is still in its early stages, there are currently no best practices in carbon emissions evaluation methodology. The volatility of the data also suggests that caution should be used in interpreting these statistics over the short term. However, as longer term trends are established and additional measurements are developed, more insights are expected

## c. ESG implementation in the portfolio

Another way to measure progress is to assess the implementation of ESG throughout the portfolio on an annual basis. For 2016, the following observations can be made:

- » On a dollar basis, approximately 49% of the portfolio is managed by investment managers who are PRI signatories:
  - 53% of the equity portfolio
  - 52% of the fixed income portfolio
  - 29% of the real estate portfolio
  - 62% of the infrastructure portfolio
- » Approximately 49% of the portfolio is managed by managers who have ESG explicitly integrated in their investment management processes:

	% OF FUND	N/A	LARGELY IMPLICIT	IMPLICIT	EXPLICIT
<b>Equities</b>	48.2		13.8%		34.4%
<b>Fixed Income</b>	20.3	10.5%	9.8%		
<b>Hedge Funds</b>	14.6	14.6%			
<b>Real Estate</b>	9.3			1.6%	7.7%
<b>Infrastructure</b>	7.6			0.7%	6.9%
<b>TOTAL</b>	100	25.1%	23.6%	2.3%	49.0%

## 2. Identify and consider new indices and/or benchmarks that incorporate responsible investment principles, in addition to/instead of any of the above

Global warming is an emerging topic in global financial markets, and the University continues to monitor and support the development of new measurements.

We are fulfilling a leadership role in addressing global warming and continuing to evaluate and compare emerging and existing indices and benchmarks for use in the investment portfolios.

As a result of our leadership role, we have been consulted by a number of our peers on addressing global warming and have served as a model for others.

## 3. Carry out annual measurements of progress and report results to the uOttawa community

Annual measurements of the three categories listed under item 1 will be carried out.



#### **4. Incorporate these results into the consideration and updating of the portfolio investment policies**

The Statement of Investment Policies and Goals (SIPG) incorporates responsible investing, and is aligned with the United Nations industry best practices framework. The SIPG is reviewed and approved annually. It is also published on the uOttawa website.

In addition, there are well-established responsible investment guidelines for the long-term portfolio, which are periodically reviewed and also published on the uOttawa website.

#### **5. Consider these results, to the extent it is appropriate, in the evaluation of the fund managers' performance**

Annual evaluations of investment managers are performed, with assessment of their responsible investing and ESG efforts as a key criterion. This assessment forms part of the ongoing review and monitoring discussions with existing external investment managers, and are a key consideration when selecting new investment managers. The annual evaluations are shared with the Finance and Treasury Committee through the quarterly reporting.

#### **6. Create a Clean Innovations Fund over time with an initial \$10 million, using funds from the existing portfolios and donations received for this purpose**

The Finance and Treasury Committee has discussed the development of a Clean Innovation Fund at various meetings. These discussions have centred on the authority and potential objective(s) of such a fund, along with structure and implementation. The committee is also reflecting on the funding sources, timelines and investment orientation of the fund. Investment staff have begun preliminary research on several investment options and their practicability for a \$10 million Clean Innovation Fund.



# External Relations

## SUPPORTING RESEARCH, STIMULATING DEBATE: THE EXTERNAL RELATIONS CONTRIBUTION

External Relations (ER) helps uOttawa combat global warming by raising funds for teaching and research related to clean tech and innovation, and helping Canada transition to a green economy. ER also stimulates discussion and debate, and informs our community about our progress.

### ENGAGING DONORS ON CLEAN INNOVATION

In last year's *Response by the Executive Committee of the Board of Governors to the Report of the Finance and Treasury Committee on Addressing Global Warming*, uOttawa committed to creating a Clean Innovation Research Fund, under the purview of the Vice-President, Research.

External Relations has committed to raising \$1.5 million by 2020 for the fund. The Office of the VP Research has committed to contributing an additional \$1.5 million, for a total of \$3 million. The fund will support research, teaching and graduate scholarships.

Earlier this year, External Relations supported Prof. Stewart Elgie, Faculty of Law, Common Law Section, in his effort to secure a gift of \$750,000 from the Jarislowsky Foundation. This donation will help create a new **Clean Innovation Senior Fellows and Research Program**, which will bring six top researchers to uOttawa to advance research and policy engagement on driving clean innovation.

With this promising initial gift, uOttawa is halfway towards raising the \$1.5 million for the Clean Innovation Research Fund by 2020.

External Relations, through its fundraising efforts, will also continue to support the **Positive Energy** project, led by Prof. Monica Gattinger, director of the Institute for Science, Society and Policy and associate professor at the School of Political

Studies. The project uses the convening power of the University to bring together academic experts and key decision-makers from industry, government, Indigenous communities, local communities and environmental organizations to determine how energy resources can be developed in a way that garners acceptance and benefits society at large.

### TAKING UP THE CHALLENGE OF CREATING A GREENER ECONOMY

The University has also made a commitment to stimulate discussion and debate on campus on how uOttawa can best enhance its impact in teaching, research and public engagement to combat climate change.

In March 2016, the University organized three panel discussions, to hear a broad spectrum of views on climate change and divestment. The panel discussions were the final step in the Finance and Treasury Committee's outreach efforts and thorough evaluation of how uOttawa can best address climate change and respond to calls for divestment.

In May 2017, External Relations also featured environmental and human rights activist Sheila Watt Cloutier as the speaker at the annual Alex Trebek Distinguished Lecture series. Her lecture, "Seeing Human and Climate Trauma as One," was the second most popular event of Alumni Week.

The conversation will continue with a conference scheduled for November under the auspices of the Chancellor's Debate series. The theme will be the green economy. Experts on innovation and green technologies will discuss challenges Canada is facing in combatting climate change. Members of the public and the uOttawa community will be invited to attend and join the discussion.

# A sustainable campus

The University of Ottawa adheres to the World Commission on Environment and Development definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Through a variety of programs, the University is taking concrete steps towards a better environment. Some include reducing our greenhouse gas (GHG) emissions, water consumption and fossil fuel consumption... all despite a growing campus and population.

Since the 1992–1993 academic year, the University's floor space has grown by 62.7% and its population has nearly doubled (91.4%). However, thanks to our efforts, our natural gas consumption has only risen 5.7%. As our systems became more efficient, this has led to our GHG emissions actually dropping by nearly a quarter (23.2%) over the same period. For results such as these, the Ontario Ministry of the Environment and Climate Change honoured the University of Ottawa with a Minister's Award for Environmental Excellence in 2016.

## BACKGROUND

Early sustainability initiatives on campus date back to 1974, when the University hired its first engineer to manage the campus's energy consumption. Since 2006, the Office of Campus Sustainability, under Facilities, has coordinated many of the campus's sustainability projects, relying on partners such as Protection Services, Food Services and the Human Rights Office to achieve its mandate. It strives to integrate sustainability into daily campus life through actions both small and large, from something as simple as encouraging cycling on campus to designing new, energy efficient facilities. These programs are important and frequently make it possible for the University to realize substantial savings in addition to reducing our environmental impact.

In 2007, the University created the Sustainable Development Committee (SUDCOM). Its mandate is to offer advice and ideas to the University's Administrative Committee on campus sustainability best practices. The committee is composed of representatives from the staff, faculty, student body and community. The SUDCOM helped establish the University's current sustainability targets.

## OUR PROGRESS

### BUILDINGS AND GREEN SPACES

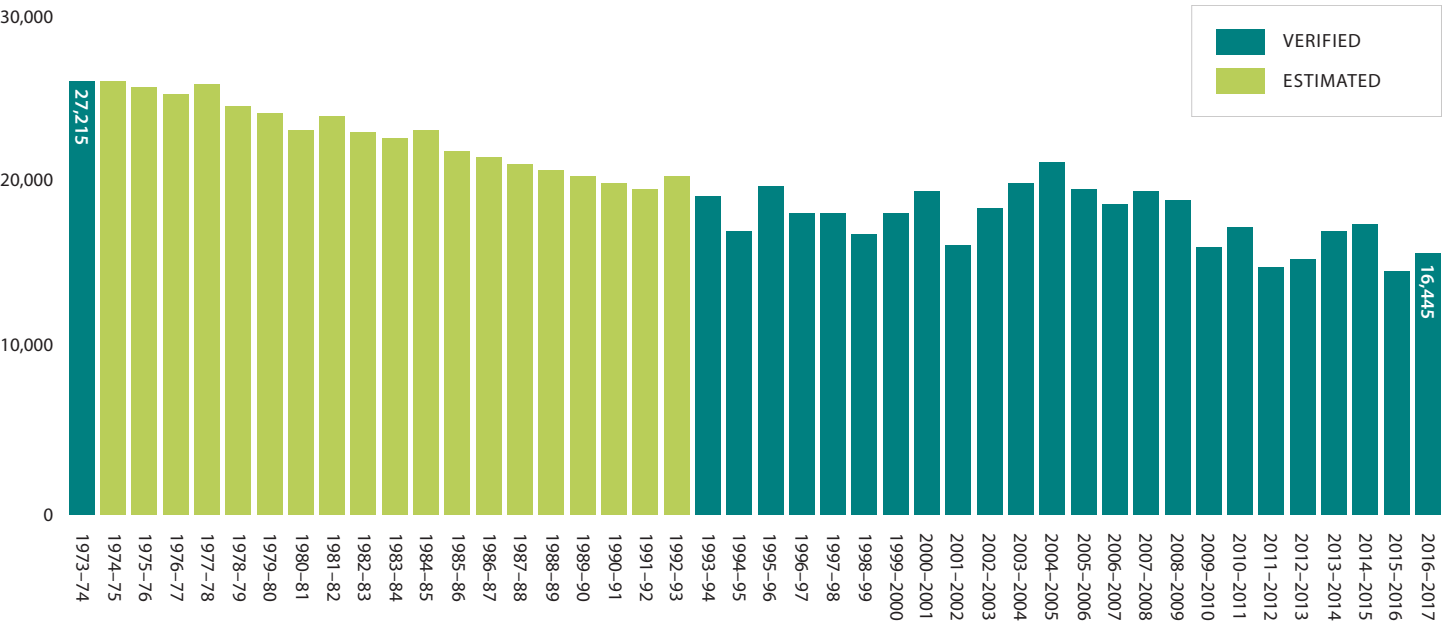
Our objective is to increase the amount of functional indoor and outdoor green spaces and ensure a minimum LEED Silver Certification for new buildings and major renovations exceeding 100,000 square feet.

The number of community garden plots has now risen to 50, up 20 from 2014, and the Social Sciences Building (FSS) and the Advanced Research Complex (ARC), both relatively recent campus additions, have achieved LEED Gold certification. The Learning Crossroads and STEM complex, still under construction, are targeting LEED Silver as a minimum.





Tonnes (CO<sub>2</sub> equivalent)



EMISSIONS

Our target is to reduce direct greenhouse gas emissions (scope 1) by 34% from 2005 levels by 2020. This means emitting no more than 13,000 tonnes of GHG emissions in 2020. In 2015, the University of Ottawa had a complete assessment of its GHG emissions verified by a third party as part of its obligations

to the province of Ontario. It showed emissions 17.5% below 2005 levels. This process was repeated again in 2016, with the University of Ottawa reducing GHG emissions by a further 1.6%, to 16,445 tonnes.

ENERGY

Our target is to reduce energy consumption by 2% annually despite the growth of the campus.

The University's energy consumption dropped again in 2016, thanks in large part to the EcoProsperity program, a deep energy retrofit initiative. The completion of the Roger-Guindon energy retrofit in late 2015 achieved significant results, a reduction of 5 million kilowatt hours, enough to power roughly 420 large homes with hot tubs for an entire year.

RECYCLING AND WASTE DIVERSION

We aim to exceed the province's target of an 80% waste diversion rate by 2050 and ultimately become a zero-waste campus. (Waste diversion is the percentage of materials we avoid sending to, that is, we divert from, landfills.) In 2016, our waste diversion rate rose to 64.5%, up from 61% the previous year.

A significant part of our success in this area has been the creation and redevelopment of several additional programs over the past few years that have enabled us better to capture non-conventional waste. The creation of a direct compost program at Food Services' new Dining Hall, for instance, helped capture a significant amount of waste that previously would not have been processed. Programs such as *Textbooks 4 Change*, *Terracycle* and uOttawa's *Free Store* provide streams for diverting other forms of non-conventional waste from landfills as well.

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Custom power alternatives are available on campus, such as Bullfrog Power, which uses energy from renewable and low impact sources. The Institute of the Environment uses Bullfrog Power for its offices. ”

## WATER CONSUMPTION

Our target is to reduce water consumption by 2% annually despite the growth of the campus. This means reducing water consumption to 455,000 m<sup>3</sup> by 2017. Since 1990, we've registered a 40% reduction in our water consumption, reaching 455,377m<sup>3</sup> in 2016.

## SUSTAINABILITY INITIATIVES

**Black water reuse:** The University collects used water from our Aquatic Care Centre and reuses it to heat and cool buildings on campus.

**Demand Response 3 (DR3):** On the hottest days of the year, the University is asked by the province to limit our energy consumption to reduce the load on the electrical grid. On these days, we implement energy reduction measures, which include turning off non-essential lighting and rotating ventilation.

**District heating and cooling:** The University of Ottawa's campus utilizes a district heating and cooling loop. This means all the buildings are connected by underground tunnels, which allow energy to be shared between the Power Plant and the buildings, thus reducing our consumption.

**EcoProsperity:** EcoProsperity is an ongoing program to implement deep-energy retrofits on campus. In 2013 alone, the program was responsible for over \$3 million in energy savings. Recently retrofitted buildings include Morriset, Desmarais, Fauteux, SITE and Roger Guindon.

**Embedded energy manager:** The University of Ottawa has partnered with Hydro Ontario to employ an embedded energy manager on campus. The embedded energy manager is responsible for reducing electrical consumption by finding energy-saving opportunities.

**Food donations:** Food Services is working on a program to donate surplus food to shelters and food kitchens. It is also increasing its composting rate, since organic waste in landfills creates methane, which is 20 times worse than CO<sub>2</sub> emissions. This will decrease our scope 3 emissions as well as increase our diversion rate.

**Green power:** Custom power alternatives are available on campus, such as Bullfrog Power, which uses energy from renewable and low impact sources. The Institute of the Environment uses Bullfrog Power for its offices.

**Hybrid vehicles:** To reduce emissions, Protection Services has converted its entire fleet to hybrid vehicles.

**LED retrofit:** Facilities is preparing to replace 90,000 LED lights across campus with new, more energy-efficient models. Since each bulb consumes 40% less power than its predecessor, this project will have a major impact on campus electrical consumption.

**Low flow fixtures:** All new water fixtures installed on campus are low flow. They can be found all over the campus (faucets, toilets and urinals) and use significantly less water than traditional models.

**Solar panels:** Photovoltaic solar panels are being deployed on campus as a renewable source of energy. We are continuously looking for opportunities to diversify our energy sources to incorporate renewable energy.

**Storm water management:** To reduce our impact on surrounding communities, uOttawa uses bioswales to filter rainwater, as well as rainwater collection.

**Sustainable transportation:** In 2017, Facilities purchased new bikes to help transition to an emissions-free fleet of vehicles for its staff to move quickly around campus without producing GHG emissions. This new initiative is a small part of the overall campus program to support sustainable and active transportation. The new light rail transit station, set to open in 2018, will complement other initiatives such as the SFUO Bike Coop and the uOttawa carpooling program.

**Water fountain renewal:** Every year, the University invests in improving fountains and adding new ones. This increases drinking water quality and accessibility, thus reducing the need to purchase plastic water bottles.





# Conclusion

Addressing global warming and climate change while building a low carbon economy is arguably one of the most urgent challenges of our time, for Canada and the world. As this report demonstrates, the uOttawa community can take pride in the concrete steps we have taken over the past year to build on our already strong collective effort to confront the impact of climate change.

We have made significant advances in four key areas—teaching and research excellence; fundraising to support research, teaching and students; environmentally responsible management of our facilities and operations; and sound and sustainable financial and portfolio management. On the latter, the University has taken steps toward gradually tilting our investment portfolio away from fossil fuels and establishing a framework to measure effectively such a shift; we are positioning ourselves well to make informed investment decisions in the future.

Those four areas stem from the Board of Governors' vision of a sustainable and environmentally responsible campus. Thanks in no small part to the Board's foresight, uOttawa continues to show leadership among major universities in Canada through concrete actions and long-standing commitments to tackle climate change head on. On behalf of the University community, I thank the Board members for their commitment and support.

This update enables us to take stock of what we have achieved over the past year through our comprehensive, multi-faceted approach. I thank our University community for its hard work, diligence and many innovative ideas, such as the Clean Innovation Research Fund. Working together, we will continue to build on these achievements, to leave a sustainable legacy for future generations.

**JACQUES FRÉMONT**  
PRESIDENT AND VICE-CHANCELLOR

# Projects supported by the uOttawa Clean Innovation Research Fund

Only the projects started in 2016 or later have been included in this list.

PROJECTS		2016-17	2017-18	2018-19	2019-20	TOTAL
NSERC-CREATE	Karin Hinzer – Clean Tech	\$40,000	\$40,000	\$40,000	\$40,000	\$160,000
	Daniel Figeys – water treatment	\$40,000	\$40,000	\$40,000	\$40,000	\$160,000
IRAP – International Research Acceleration Program	Karin Hinzer – Clean Tech with Univ. of Tokyo	\$10,000	\$10,000			\$20,000
Fulbright Visiting Research Chairs (US\$25k/chair/yr)	ISSP – Science, Society and Policy	\$31,000	\$31,000	\$31,000	\$31,000	\$124,000
	IE – Institute of Environment 1	\$31,000	\$31,000	\$31,000	\$31,000	\$124,000
	IE – Institute of Environment 2		\$31,000	\$31,000	\$31,000	\$93,000
UROP – Undergraduate Research Opportunity Program	Laurie Chan – supervising Valérie Doyon	\$1,500				\$1,500
	Jack Cornett – supervising Julian Parker	\$1,500				\$1,500
	Jack Cornett – supervising Brittany Gélinas	\$1,500				\$1,500
	Jack Cornett – supervising Soroush Shahryari	\$1,500				\$1,500
SSHRC Partnership Grant	Stewart Elgie – cash	\$47,000	\$44,000	\$29,000	\$29,000	\$149,000
	Stewart Elgie – inkind	\$12,100	\$12,100	\$12,100	\$12,100	\$48,400
Research Perspectives Magazine – specialized issue	How clean tech is defining our future		\$31,353			\$31,353

PROJECTS		2016-17	2017-18	2018-19	2019-20	TOTAL
RDP – Research Development Program	Chris Kinsley – Ecological Engineering	\$10,000				\$10,000
	Sidney Omelon – Phosphorus Capture (wastewater)	\$10,000				\$10,000
	Anders Knudby – Bathymetry	\$9,800				\$9,800
	Christopher Huggins – Mining Sector Governance	\$18,400				\$18,400
	Mary Stalcup – Urban Climate Politics	\$19,400				\$19,400
Smart Prosperity – IE	Fulbright Lecture on Environment Issues	\$2,800	\$2,800	\$2,800	\$2,800	\$11,200
	Climate Change Town Hall	\$2,000				\$2,000
ISSP – Bromley Lecture: Energy and Environment	Pascal Audet – Solid Earth Geophysics	\$25,000	\$25,000	\$25,000	\$25,000	\$100,000
	Trevor Hall – Photonic Circuits and Integration	\$25,000	\$25,000	\$25,000	\$25,000	\$100,000
CRC – Canada Research Chairs	Jackie Dawson – Environment, Society and Policy	\$45,000	\$45,000	\$45,000	\$45,000	\$180,000
	Nicholas Rivers – Urban Environmental Studies	\$40,000	\$40,000	\$40,000	\$40,000	\$160,000
	Ghassan Jabbour – Advanced Materials and Devices	\$50,000	\$50,000	\$50,000	\$50,000	\$200,000
		\$474,500	\$462,253	\$401,900	\$401,900	\$1,740,553
University infrastructure spending	Heather Kharouba – Climate vs species' distributions	\$42,221				
	Jan Menningen – Pollution and environment protection	\$96,917				
	Ian Clark – Environmental radionuclides	\$372,090				
		\$511,288				\$511,228
TOTAL		\$985,728	\$462,253	\$401,900	\$401,900	\$2,251,781