A JUST FUTURE

A Climate Action Plan for Loyola University Chicago • 2015–2025

LOYOLA
UNIVERSITY CHICAGO
1870
AD • MAJOREM • DEI • GLORIAM

Preparing people to lead extraordinary lives

OVERVIEW

At Loyola, addressing climate change is driven by our Jesuit tradition of social justice. As such, we have assembled this resource to discuss our plans to lessen our impact through raising awareness, education, thoughtful action, and reflection.

BACKGROUND

In 2012, then Loyola president Michael J. Garanzini, S.J., signed the University onto the American College and University Presidents' Climate Commitment (see sidebar). This commitment states that Loyola will take the following steps:

- Initiate the development of a comprehensive plan to achieve climate neutrality
- Initiate two or more tangible actions to reduce greenhouse gases
- Make the action plan, inventory, and periodic progress reports publicly available

This plan addresses the first commitment by putting Loyola on a path to carbon neutrality.

2013 SURVEY OF SUSTAINABILITY TOPICS

A 2013 survey of over 3,200 Loyolans asked what Loyola should be doing to advance sustainability. On the topic of climate change, 415 individual comments suggested the following major concerns to be acted on:

- There is a lack of knowledge on the basic science of climate change
- There is a lack of understanding on what an individual or organization can do to address the issue
- There is a strong need to have a plan and associated goals to reduce emissions
- There was interest in model projects that link research to problem solving

What should Loyola do to address climate change?

22%	**Set a goal for greenhouse gas reduction**
17%	**Advance a climate action plan for the University**
17%	**Prepare our campuses for climate change (adaptation)**
16%	**Use our campus landscapes to trap and sequester greenhouse gas emissions**
16%	**Promote personal action on climate change**
12%	**Promote climate change science more**

N=4,092

American College & University Presidents Climate Commitment

The ACUPCC is a high-visibility effort to address global climate disruption undertaken by a network of colleges and universities that have made institutional commitments to eliminate net greenhouse gas emissions from specified campus operations, and to promote the research and educational efforts of higher education to equip society to re-stabilize the earth's climate. Its mission is to accelerate progress towards climate neutrality and sustainability by empowering the higher education sector to educate students, create solutions, and provide leadership-by-example for the rest of society. SOURCE: *Second Nature*

- 685 Signatories to date
- Over 2,500 Greenhouse Gas Inventories submitted
- 539 Climate Action Plans submitted

LOYOLA CLIMATE CHANGE ACCOMPLISHMENTS TO DATE

- Completed Greenhouse Gas Inventories for FY08, 11, 12, 13, and 14. Presented findings to Chicago-area universities.
- Reduced overall footprint for Lakeside campuses by 11% since 2008.
- Class-leading energy efficiency strategies including high-performing buildings, central systems upgrades, and specific facility-level strategies.
- Summer 2013 Climate Considerations interns drafted adaptation plans for Lake Shore and Retreat and Ecology Campus landscape management.
- Established sustainability course in the Core curriculum.
- Advancing Sustainability Across the Curriculum assessment.
- Fall 2013 outreach and education programming featured Climate Change Cinema and Speaker Series, Climate Change and ethics symposium, and website resources.

WORKING GROUP PROCESS AND MEMBERSHIP

The process to develop a climate action plan for Loyola identified key stakeholders from across the University. Over the course of four meetings, potential activities were discussed, considered, and evaluated. Peer institution activities were reviewed, and alignment with current and future University priorities were incorporated. The primary evaluation considerations were emissions reduction, cost effectiveness or return on investment, visible commitment to addressing energy and climate change, and alignment with academic and operational priorities. The group:

- **Explored potential actions that reduce our greenhouse gas emissions most cost-effectively**

1. Energy efficiency
2. Off-campus renewable energy *(purchase electricity from clean sources with Renewable Energy Credits)*
3. On-campus renewable energy *(geothermal, solar thermal, solar photovoltaic, wind turbine)*
4. Carbon offsets *(purchase offsets for activities we can't reduce / have alternatives for)*
5. Carbon sequestration

- **Explored initiatives that prepare the campus for a changed climate**
- **Explored other activities that promote the teaching, research, and engagement around climate change**

Additional detailed meetings took place around specific aspects of potential actions including energy benchmarking and goal-setting.

This group was administered by Aaron Durnbaugh, Director of Sustainability, and IES Interns Lauren Standal and Shayna Milstein. Following discussion, potential activity owners were consulted.

LOYOLA CLIMATE ACTION PLAN WORKING GROUP

Kana Wibbenmeyer
Facilities

David Beall
Capital Planning

Jared Brocklehurst
Student Government of Loyola Chicago

Jennifer Clark
Community Relations

Tim McGuriman
Campus Services

Jack McLean
Student Development

Ping Jing
Institute of Environmental Sustainability

Sam Perry
Bryana Deak
Finance Office

Kelly Hof
Student Environmental Alliance

OUR GOAL

Following much discussion and research, a single goal was developed: **Loyola will be carbon neutral for directly controlled emissions (Scope 1 and 2) by 2025.** We'll get there through:

Mitigation

Reducing our climate change causing emissions

ACTION	SUB-GOAL
MITIGATION Continue to reduce energy-related emissions through retrofits, new construction, policies, and behavior-focused programs.	• Reduce total energy use by 10%
ON-SITE RENEWABLE ENERGY Evaluate and pilot on-site renewable energy.	• Reduce natural gas use by 4% • Reduce electricity use by 1%
OFF-SITE RENEWABLE ENERGY AND OFFSETS Purchase renewable energy credits and carbon offsets.	• 100% of electricity in RECs by 2025 • 100% of natural gas in offsets by 2025

Adaptation

Preparing for a changing climate

ACTION	SUB-GOAL
RESILIENCY Build a campus and community that is well prepared for changing conditions under climate change.	• Incorporate climate forecasts into planning, especially capital projects

Teaching, Research, Engagement, and Accountability

Engaging the Loyola community in climate science and resilience

ACTION	SUB-GOAL
TEACHING, RESEARCH, AND ENGAGEMENT Support the teaching, research, and outreach of climate science and adaptation.	• Strengthen annual programs to engage the Loyola community
ACCOUNTABILITY Maintain a clear accounting on progress and challenges to reach carbon neutral by 2025.	• Promote annual reporting on greenhouse gas emissions and engagement programs

MITIGATION

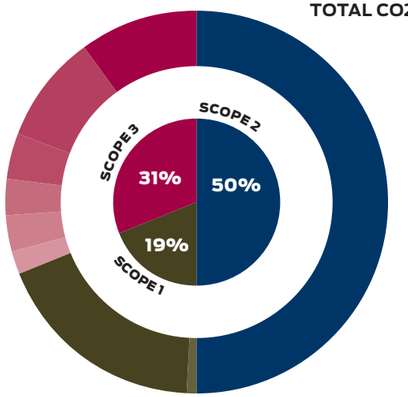
REDUCING OUR CARBON POLLUTION

In 2012, we began tracking and reporting our activities that produce greenhouse gas emissions. Tackling Loyola's impact on the environment is one of our foremost goals.

THE BASELINE

FY14 GREENHOUSE GAS EMISSIONS INVENTORY

For the most recent year of reporting, these emissions are divided as follows:



TOTAL CO2 EMISSIONS FY14 79,414 Metric tons

19% SCOPE 1
- 18% Natural gas
- 1% Vehicle fuel
- >1% Fertilizers

50% SCOPE 2
- 50% Purchased electricity

31% SCOPE 3
- 10% Student commuting
- 9% Faculty/staff air travel
- 4% Study abroad air travel
- 3% Faculty/staff commuting
- 3% Electricity transmission losses
- 2% Solid waste
- >1% Other directly financed travel
- >1% Sewer treatment
- >1% Potable water

Emissions: The release of a substance (usually a gas when referring to the subject of climate change) into the atmosphere.
SOURCE: *US EPA*

Greenhouse gas: Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide, methane, nitrous oxide, hydrochlorofluorocarbons, ozone, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. SOURCE: *UN Framework Convention on Climate Change*

CLIMATE JUSTICE

Loyola's emissions contribute to climate change:

- Negative effects inequitably experienced by vulnerable people around the world
- It is much more efficient to prevent problems (reduce emissions) than respond to catastrophes
- Loyola's students and values address and mitigate the impacts of climate change
- Our graduates will be the next generation of problem solvers but they need to see examples of solutions

Deciphering the difference between the scopes of emission calculations

A baseline model for greenhouse gas emissions is essential to drafting an effective climate action plan. This baseline is created through many different calculations that quantify actions into emissions. In order to ensure that institutions only calculate their own emissions and there is no overlap with others, the greenhouse gas emissions protocol breaks down the emissions into three different scopes.

SCOPE 1

Direct, on-campus emissions (e.g. vehicles, boilers)

SCOPE 2

Off-campus but directly linked to our actions (e.g. purchased electricity)

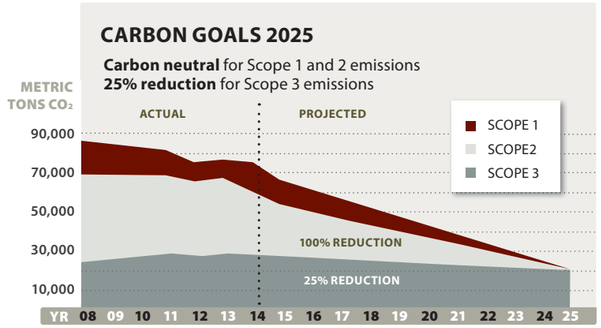
SCOPE 3

Indirect emissions that may be attributable to but not directly controlled by the University (e.g. commuting, air travel, landfill management)

Reducing our emissions

CURRENT AND PROJECTED CARBON EMISSIONS

Carbon Emissions by Activity (MTCO2E)—From our baseline year of 2008, we have seen the reduction of our annual emissions. This chart shows us the change between 2008 and 2014 and the projected emissions for 2025 including offsets.



CONSIDERATIONS

When we considered strategies to reduce our emissions, we prioritized our activities by a number of filters. These included:

COST EFFECTIVENESS: With all other aspects neutral, what is the cost per ton to reduce emissions?

MISSION ALIGNMENT: How are these activities integrated with the research, teaching, and values of Loyola?

CLEAR COMMUNICATION: Can these actions provide a highly visible commitment to address climate change?

ACTION PLAN

With these three questions in mind, we created a list of mitigation actions that would be prioritized as follows:

1. Energy efficiency

Energy efficiency is making changes to existing buildings or making strategic choices when designing new buildings that consider the energy use and life-cycle costs during the capital construction phase. Loyola has done an excellent job in incorporating energy efficiency into its existing buildings, large energy systems, and new construction, which has reduced energy use by over 30% since 2008 and saved $2-3 million per year. These savings are realized in our utility bills but also through rebates and other incentives provided by the state of Illinois and our energy utilities.

Loyola will set even more aggressive goals for energy use in our buildings considering their age and use. These goals will be met through physical improvements to the systems and shells of our buildings as well as through improved strategies to manage them, including new energy-related policies and programs.

2. Off-site renewable energy and offsets

Off-campus renewable energy has been purchased by Loyola in the past through a voluntary market place called Renewable Energy Credits. These credits transfer the environmental benefit of a clean power project to the purchaser and provide a financial benefit to the clean power project developer. Loyola will commit to increase our purchase of RECs.

There are very limited opportunities for renewable fuels (gasoline, diesel, and natural gas), so Loyola has committed to exploring the carbon offset markets for cost-effective options to compensate or offset emissions related to vehicles and natural gas.

One way that Loyola can address our carbon emissions is to increase our activities that actively sequester, or trap, carbon on our campuses through vegetation, landscapes, and soils. Although modest, it is important to manage our landscapes for this significant ecosystem function and manage our landscapes so that they don't contribute carbon to the atmosphere.

Other mitigation actions that are listed on page 17 will be implemented to address landscape management, fleet vehicles, commuting options, and air travel carbon offsets.

3. On-campus renewable energy

We can only get so efficient in our use of electricity, natural gas, and other fuels. We can look to renewable energy to provide clean power for some part of our demand.

On-campus renewable energy is already being used in a small way through solar panels and our geothermal installations. Loyola will explore on-site installations of solar thermal, photovoltaics, and wind turbines in the coming years as these technologies become more cost-effective and able to be integrated with facility operations and academic research.

4. Carbon offsets

Carbon offsets represent reductions in greenhouse gases that compensate for emissions from somewhere else. Offset projects such as wind farms and methane capture at animal farms or landfills help individuals, companies, or governments reduce their carbon footprint. SOURCE: *Natural Resources Defense Council*

5. Carbon sequestration

Terrestrial, or biologic, carbon sequestration is the process by which trees and plants absorb carbon dioxide, release oxygen, and store carbon. Geologic sequestration is one step in the process of carbon capture and sequestration, and involves injecting carbon dioxide deep underground where it will stay permanently (see page 10). SOURCE: *US EPA*

RENEWABLE ENERGY CREDITS

Renewable Energy Credits, also known as RECs, are tradable instruments that are used by institutions to better their energy footprint. A REC separates the physical energy created from a renewable source from the environmental, social, and other non-power qualities created by the renewable electricity generation. This allows the benefits from the renewable energy creation to be sold separately from the actual energy. One REC is equal to one megawatt of electricity generated from a renewable source.

The purchasing of RECs is an important way for Loyola to show its commitment to the changing economy towards green, clean energies. Energy is Loyola's biggest greenhouse gas emission area. The purchasing of RECs offsets the emissions from the electricity from the grid and provides a path to clean energy for Loyola despite geographical constraints. SOURCE: *epa.gov/greenpower/gpmarket/rec.htm*

Carbon sequestration in action

Loyola's commitment to carbon sequestration will play an important role in reducing greenhouse gas emissions.

LOYOLA TREES

Loyola student projects have inventoried tree communities on the Lake Shore and Retreat and Ecology (LUREC) campuses. Using average per tree carbon sequestration rates for city of Chicago trees, we estimate annual sequestration for the Lake Shore Campus to be in a range between 3 and 8 metric tons for the 535 trees surveyed.

For LUREC, we estimate annual sequestration at 20 to 32 metric tons for the 3,503 trees inventoried. For Cuneo Mansion & Gardens, we used an arborist's inventory to estimate annual sequestration rates at 14 to 22 metric tons for the 2,399 trees inventoried. The lower, more conservative amounts, are incorporated into the annual greenhouse gas emissions inventory for the University.

Loyola's trees are reducing our carbon footprint, but only by a small percentage when considered against our total greenhouse gas emissions.

LANDSCAPES AND SOIL

Loyola's campuses are made up of traditional park-like landscapes including a mix of buildings, roadways, other hardscapes (permeable pavers, concrete and asphalt paving), turf, and gardens. Each of these surfaces support different ecologies that breakdown and sequester carbon and other atmospheric pollutants at various rates. Unless disturbed, the carbon in soil is relatively inert. Restoring ecological function by introducing native species, either as part of the historical or ornamental landscape can increase a soil's sequestration rate and capacity. Ecological restoration and sustainable agriculture practices can optimize the carbon sequestration rates of Loyola's soils.

SOURCES: *Assessing Urban Forest Effects and Values: Chicago's Urban Forest. 2010. Nowak, D.J.; Hoehn III, R.E.; Crane, D.E.; Fisher, C.L.*

US Department of Agriculture, Forest Service, Northern Research Station.

ADAPTATION

RECOGNIZING A CHANGING LANDSCAPE

We are working to prepare our campuses for the future impacts of climate change. Loyola has started taking steps in the right direction, but we also recognize there's much more we want to accomplish.

Primary adaptation activities to be addressed at Loyola

Energy efficiency

Markets for energy are expected to rise through climate fluctuation causing cost volatility. Our energy efficiency measures protect us from future instability. These costs and a timeline are incorporated into the activities listed previously under Mitigation.

Stormwater management

Increased heavy precipitation causes flooding on campus and impacts water quality in area waterways. Our campus helps protect area waterways from pollution, but additional investments should be considered for the Lake Shore, Health Sciences, Cuneo, and LUREC campuses. These projects would be incorporated into ongoing capital projects. Loyola is also addressing increased rain and snowfall by installing green roofs, rain gardens, permeable paving, and other "green infrastructure" on our campuses. These activities protect facilities from flooding and have larger community benefits worth many times their capital costs.

Extreme weather (especially heat emergencies)

Loyola participates in demand response for peak energy use and has a robust emergency response program for members of the Loyola community. Demand response returns $20,000+ to the University each year. Emergency response programs protect students and employees and provide legal protection to the institution from negligence. Additional financial resources may be required to address more extreme weather events, including heavy precipitation leading to flooding, significant snowfall, or 'derecho' type wind events, and extreme heat events leading to impacted operations, especially during campus events. This may increase the staff and communications resources necessary in coming years, but it will make a safer and smarter Loyola community.

Ecosystem resilience

Loyola's landscapes include natural areas and park-like campuses that are at risk from weather, gradual climate change, and other disturbances such as invasive species. Loyola should follow the recommendations laid out in the Chicago Wilderness' Climate Considerations Guidebook for Natural Areas and remove all species that have the potential to become invasive in a changing climate including Barberry, Wintercreeper, and Compact Burning Bush. Cost for this would be roughly $40 per plant. A 2013 study suggested there are over 240 potential invasives on the Lake Shore Campus with a cost of just under $10,000 to address. Additionally, Loyola should consider only utilizing urban hardy and climate resilient species in landscape planning. At LUREC, ecological restoration and a diverse and sustainable urban agriculture program, which includes trees and other long-lived plant species, will make a more resilient and hardy campus landscape.

POPE FRANCIS' CALL TO ACTION

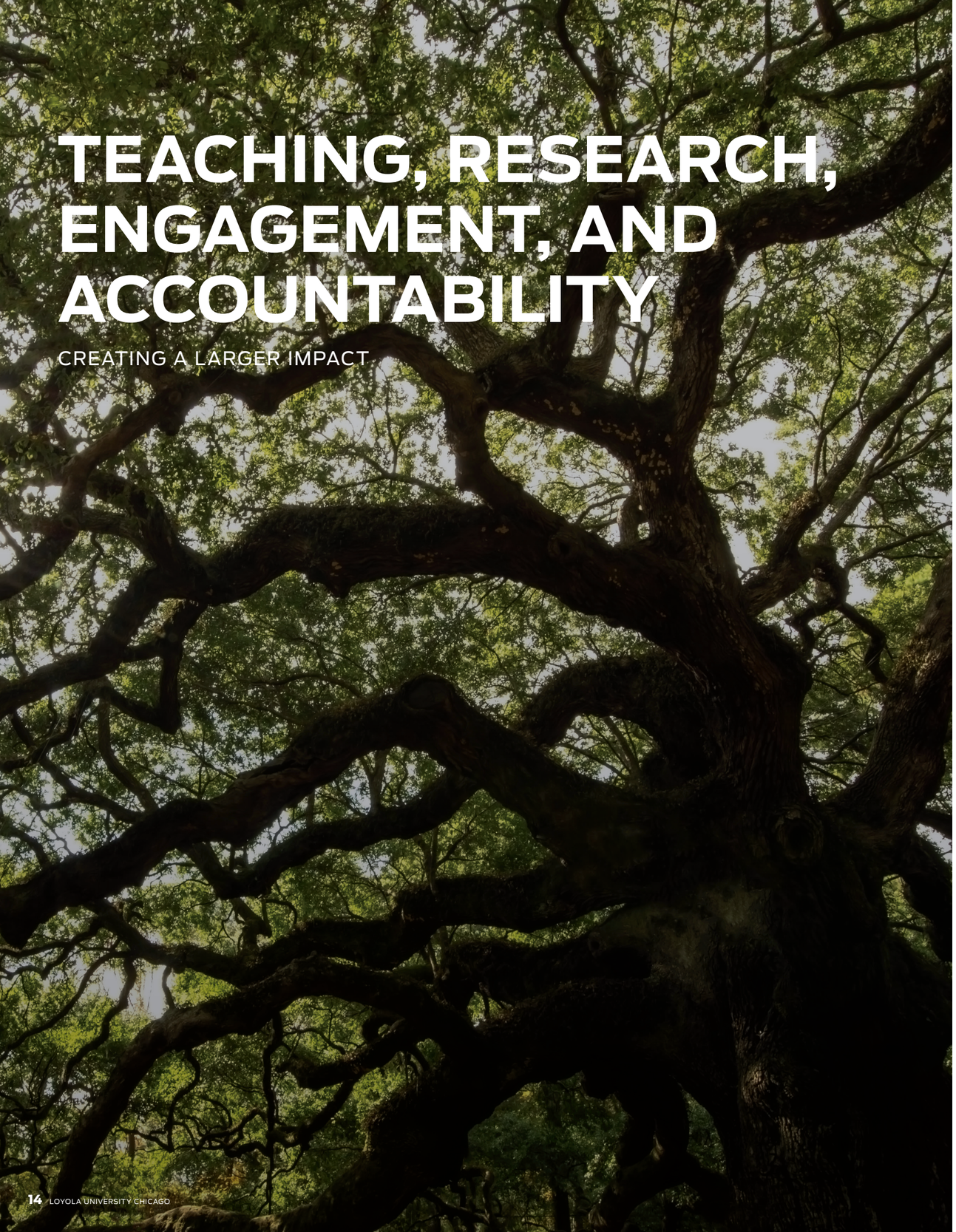
"The warming caused by huge consumption on the part of some rich countries has repercussions on the poorest areas of the world, especially Africa, where a rise in temperature, together with drought, has proved devastating for farming."

—LAUDATO SI' 51, "PRAISED BE," POPE FRANCIS' ENCYCLICAL LETTER ON ECOLOGY

	Since the middle of the 20th century, **WE'VE SEEN**	*By the middle to end of this century,** **WE EXPECT**
TEMPERATURE INCREASES	Annual average temperature increase of more than 2°F since 1945	Chicago could expect an annual average temperature increase ranging from 3–4°F under lower emissions to 7–8°F under higher emissions. The greatest increases are likely to occur during summer and winter seasons.
HOTTER SEASONS	An increase in temperature greater during the winter than other seasons, increasing 4°F since 1980. Much of the warming concentrated during the cool season and at night	The number of extremely hot days (over 100°F) could increase from the current two days per year to eight days per year under lower emissions or as many as 31 days per year under higher emissions.
HEAT WAVES, FEWER COLD SPELLS	Fewer cold waves and a number of major heat waves in the last few decades	Under higher emissions, there could be several heat waves similar to the catastrophic 1995 heat wave, and lower emissions might mean more every other year. The average coldest day of the year could warm by 4–6°F through this century.
LONGER GROWING SEASON	Lengthening growing seasons (indicated by a progressive advance in the last date of spring freeze), current dates are approximately one week earlier compared to the beginning of the century. Warmer and wetter growing season	The final frost of spring would occur anywhere from 20 days earlier under lower emissions to about 30 days earlier under higher emissions.
ICE, HUMIDITY, AND FROST CHANGES	Lake Michigan ice forming later, lasting for shorter periods and with some years having almost no lake ice	Warmer air holds more water, and increased evaporation of surface water would result in increased humidity. Fewer frost days would occur each year, and frost depth in the soil will decrease.
SHIFTS IN PRECIPITATION	A doubling in the frequencies of heavy rain events (defined as occurring on average once per year during the past century) since the early 1900s Increases in fall precipitation resulting in increased annual mean and low flow of streams without any changes in high annual flow Increasing lake-effect snow during the 20th century which may be a result of warmer Great Lakes surface waters and decreased ice cover	Most precipitation would occur in winter and spring, and chances of drought in the summer would increase. The threshold for combined sewer overflow into Lake Michigan is defined as greater than 2.5 inches. Slightly greater increases are expected for regions closer to the Great Lakes. Increasing winter precipitation (20–30% by the end of the century) combined with less ice cover on days when it is cold enough will lead to more lake effect snow.

SOURCES: *City of Chicago (2008); Union of Concerned Scientists (2009); Technical Input to the 2013 National Climate Assessment (2012); Chicago Wilderness' Climate Considerations for Management of Natural Areas (2012).*

** The range of values/changes represents different scenarios for greenhouse gas emissions during the 21st century.*



TEACHING, RESEARCH, ENGAGEMENT, AND ACCOUNTABILITY

CREATING A LARGER IMPACT

Climate change is a collective issue—not just one for policy makers and scientists. At Loyola, sustainability is an issue for every department and discipline, but we want to make an equal effect on our community and the world at large.

Teaching

One of our most significant impacts as an insitution of higher learning is how we prepare our students to develop solutions on the pressing issues of our time. This couldn't be more true in addressing climate change. Many faculty are already incorporating climate change and sustainability topics into their teaching and research (see examples in sidebar). In an effort to promote more teaching of climate science and solutions, we will develop programs that provide climate change resources for faculty and incentives to integrate climate science into the academic experience for Loyola students.

Research

In order to support the continued integration of climate change science into disciplines across Loyola, research and teaching resources will be provided to faculty and students. Small research grants will be adminstered by Loyola's Undergraduate Research Opportunities Program (LUROP) and the Office of Research Service (ORS). Teaching modules providing global and local examples of the climate change will be shared through the Faculty Center on Ignatian Pedagogy (FCIP).

Engagement

Loyola has a rich suite of outreach and engagement programs centered around sustainability topics, but it can be difficult to navigate all the offerings and resources. All related resources will be organized under a single online location with appropriate communication tools to help members of the Loyola community take action. A centralized communications effort will organize all the work underway on climate change at Loyola.

Accountability

Like any plan, this effort will not be successful without accountability. As part of the activities focused on mitigating, adapting, and communicating climate change, Loyola will also hold itself accountable through the following actions:

1. Continue annual reporting of greenhouse gas emissions to the American College & University Presidents' Climate Commitment.
2. Hold an annual public meeting to discuss progress and challenges in meeting goals.
3. Give an annual presentation to University Senate.

INCORPORATING CLIMATE SCIENCE INTO RESEARCH

Martin Berg, PhD, Department of Biology, studies the basic and applied ecology of aquatic insects in freshwater systems, including Lake Michigan and southeast Alaska. Changing climates and invasive species have substantially altered the energy flows within these systems influencing water quality, availability of food resources, and the mobilization of toxic substances.

Ping Jing, PhD, Institute of Environmental Sustainability, has research interests that include the effect of climate change on air pollution, especially ozone and volatile organic compounds, in the Chicago region. She also teaches a summer course at the Beijing Center on environmental sustainability and the rapid environmental change currently underway in China.

Elizabeth Coffman, PhD, School of Communication, incorporates climate change into her teaching and her scholarly efforts. She is a documentary filmmaker that co-produced "Veins in the Gulf," based on southern Louisiana culture, wetlands, and the impact of disasters such as Hurricane Katrina and the BP Deepwater Horizon oil spill. In her classes, she uses climate change as a subject for critical media theory including exploring concepts of bias, propaganda, and science communications.

Converting waste into energy

The Searle Biodiesel Program focuses on production, research, and outreach efforts centered on using waste products to create energy. Its products are designed to utilize University and lab waste to make usable products with the long-term goal of establishing a zero-waste process.

This student-run enterprise is the first and only school operation licensed to sell biodiesel in the United States and is a certified green business with the Illinois Green Business Association.

In the fall of 2007, the first Solutions to Environmental Problems (STEP): Biodiesel class started to explore fuel production on Loyola's Lake Shore Campus. This research program offers courses that bring together students, faculty, staff, and community mentors to engage in interdisciplinary discussion and action around issues of environmental sustainability.

The Searle Biodiesel Lab is run by student workers. These students oversee the production and sale of biodiesel, BioSoap, tiki torch fuel, and biodiesel processors.

Loyola hopes that this program can serve as a model for the rest of the University and general public. We seek to reduce the goods brought onto campus and the waste leaving campus by more efficiently using what we already have.

WHAT YOU CAN DO

Address global climate change by reducing your climate footprint.

Turn off lights and electronics when not in use.

Don't heat or cool spaces that aren't being used.

Use natural daylight and fresh air when you can.

Go local, especially where you work and what you eat.

Choose lower carbon modes of transportation.

ENERGY EFFICIENCY GOALS FOR CAMPUS BUILDINGS

Loyola's Lake Shore and Water Tower campuses include over 3.8 million square feet of building space. Loyola has set goals for energy efficiency based on building use and age.

	AGE OF BUILDING			
	1–5 years	**5–15 years**	**15+ years**	**TOTAL**
Residence hall	195,062 ft²	485,808 ft²	795,272 ft²	1,476,142 ft²
Target EUI	*55*	*75*	*90*	
Academic	209,378 ft²	381,638 ft²	1,157,739 ft²	1,748,755 ft²
Target EUI	*50*	*70*	*80*	
Lab	0 ft²	139,554 ft²	64,407 ft²	203,961 ft²
Target EUI	*75*	*100*	*125*	
Other	261,359 ft²	50,000 ft²	96,825 ft²	408,184 ft²
Target EUI	*50*	*70*	*85*	
TOTAL	665,799 ft²	1,057,000 ft²	2,114,243 ft²	

NOTES: *Square footage as of FY2014; excludes Jesuit facilities* SOURCE: *US EPA's EnergyStar*

Energy Use Intensity (EUI) is a measure of a building's energy use normalized by size and calculated by 1,000 British Thermal Units of annual energy use at the site divided by square footage (KBTU/SF).

WHAT'S NEXT?

This plan sets out the goals and tactics for Loyola to reach carbon neutrality by 2025 for Scope 1 and 2 emissions. It addresses the mitigation, adaptation, and outreach necessary to make the campus more climate ready and sustainable as we support our social justice and educational mission. This vision will take more than the commitment of the Loyola administration, it will take the innovation and vision of all Ramblers.

		ACTION	SCOPE	ANNUAL SAVINGS	TIMELINE	OWNER
MITIGATION	M1	Energy efficiency reduction of 10% by 2020 from 2013	1, 2	Yes	FY16–20	Facilities
	M2	Equipment trade-in program for faculty	2	Yes	FY18–20	IES / Facilities
	M3	Implement a temperature set policy	2	Yes	FY16	Facilities
	M4	Support energy efficiency goals with behavior engagement staffing	1, 2, 3	Yes	FY17–20	IES / Facilities
	M5	Green purchasing program and policy	3	Yes	FY16	Purchasing
	M6	Water efficiency goal by facility use and age	3	Yes	FY17	Facilities
	M7	Vehicle fleet efficiency goals and anti-idling policy	1	Yes	FY17	Transportation Committee
	M8	Selective organic landscape certifications	1	Yes	FY16	Facilities - Grounds
	M9	Integrated pest management program	1	Yes	FY17	Facilities - Grounds
	M10	Promote alternative commuting options	3	No	ongoing	Transportation Committee
RENEWABLE ENERGY	RE1	Explore feasibility and install solar panel (photovoltaic)	2	Yes	FY18–20	Facilities
	RE2	Explore feasiblity and install solar thermal	1	Yes	FY18–20	Facilities
	RE3	Explore feasibility and install small wind turbine	2	Yes	FY18	Facilities
	RE4	Purchase renewable energy credits annually	1, 2	No	FY16–20	Facilities - Budget
	O1	Purchase carbon offsets annually	1, 2, 3	No	FY16–20	Facilities - Budget
	O2	Promote air travel offset programs	3	No	FY16	Office of International Programs
ADAPTATION	A1	Increased energy efficiency as Adaptation	1, 2	Yes	ongoing	Facilities
	A2	Continue sustainable stormwater management for heavy rain events	3	No	ongoing	Facilities
	A3	Continue to be prepared for emergency response for extreme weather events	N/A	No	ongoing	Campus Safety / Student Development / Human Resources
	A4	Continue ecosystem restoration at Retreat and Ecology Campus	N/A	No	ongoing	IES
	A5	Continue sustainable landscape programs at Lake Shore Campus	N/A	Yes	ongoing	Facilities
	A6	Consider a 'climate-ready' evaluation for all landscape and capital projects	N/A	Yes	FY16	Facilities / IES
ENGAGEMENT	E1	Highlight climate-related teaching and research	N/A	N/A	FY16–20	IES / Faculty Center for Ignatian Pedagogy
	E2	Support additional climate-related research for students	N/A	N/A	FY16–18	IES / LUROP
	E3	Support additional climate-related research for faculty	N/A	N/A	FY16–18	IES / Office of Research Services
	E4	Conduct an educational campaign on climate change at Loyola	N/A	N/A	FY16–17	IES
	E5	Install highly-visible demonstration sites	N/A	N/A	FY17–20	Facilities
	E6	Continue climate-related events such as Energy Week and the IES Climate Change Conference	N/A	N/A	ongoing	IES
	E7	Annual reporting on progress towards goals with public meetings, reports, and presentation to Oversight Committee	N/A	N/A	FY16–20	IES

LOYOLA UNIVERSITY CHICAGO

1032 W. Sheridan Road • Chicago, IL 60660

LUC.edu/climatechange

LOYOLA
UNIVERSITY CHICAGO
1870
AD • MAJOREM • DEI • GLORIAM

Preparing people to lead extraordinary lives