



UNIVERSITY OF SASKATCHEWAN
**2023-2024
ANNUAL
SUSTAINABILITY
REPORT**



UNIVERSITY OF
SASKATCHEWAN

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GLOSSARY

- AASHE:** Association for the Advancement of Sustainability in Higher Education
- CO₂e:** Carbon dioxide equivalents, a common unit of measure for greenhouse gas emissions
- CoS/the City:** City of Saskatoon
- GHG:** Greenhouse Gas
- GMCTL:** Gwenna Moss Centre for Teaching & Learning
- JSGS:** Johnson Shoyoma Graduate School of Public Policy
- MOU:** Memorandum of Understanding
- QS:** Quacquarelli-Symonds, or sometimes in reference to the Quacquarelli-Symonds Sustainability Rankings
- RCE/RCE SK:** Regional Centre of Expertise on Education for Sustainable Development, Saskatchewan Chapter
- SENS:** School of Environment and Sustainability
- SDG/UN SDGs:** United Nations Sustainable Development Goals
- Sustainability Strategy/the Strategy:** *Critical Path to Sustainability: USask's 2021-2030 Sustainability Strategy*
- STARS:** Sustainability Tracking, Assessment, and Rating System
- THE:** Times Higher Education, or sometimes in reference to the Times Higher Education Impact Rankings
- USask:** University of Saskatchewan
- USSU:** University of Saskatchewan Students' Union



Message from the Chief Sustainability Officer

The 2023-24 year saw many successes and I hope all members of USask's community take the opportunity to learn about the breadth and depth of progress that colleagues, students and community partners have achieved together.

The first milestone worthy of celebrating is that USask reached an almost 20% (19% to be exact) reduction of our greenhouse gas emissions from the 2010 baseline! The 2023-24 year saw a 6% reduction from the previous year, as we benefited from a relatively warmer winter in 2023-24, which saw our natural gas consumption, and resultant greenhouse gas emissions, decrease. As well, USask benefited from the work SaskPower

is doing to decarbonize the electrical grid, and even though our overall electrical consumption increased, these greenhouse gas emissions decreased, due to SaskPower's efforts. The strategy to achieve our 2030 goal – a 45% reduction from our 2010 baseline – is clear: we must reduce demand of natural gas and electricity by improving our existing infrastructure. This will be accomplished by addressing deferred maintenance and ensuring our buildings are operating as originally designed, by upgrading building automation systems, by improving buildings HVAC systems and continuing with envelope upgrades. This work is expensive and in 2024-25, we will continue to explore how to best fund these improvements.



101-200th
in the world for
THE Impact Rankings



89th
in the world for QS
Sustainability Rankings



Gold
achieved in 2023
STARS submission

The second item to highlight are the accomplishments of our inaugural cohort of Sustainability Faculty Fellows. The first six-person cohort completed the 2 year fellowship in the spring – over 1000 students benefited from sustainability-infused content in courses taught by these Fellows, and that resulted in a positive impact in students' confidence in their communication about sustainability and likelihood of finding creative solutions to sustainability challenges. In addition to the direct impact on students, the Fellows also published an open resource book to support any post-secondary faculty looking to embed open and sustainability practices within their own courses. Equipping these champions is an important element of the strategy to reach our overarching goal of ensuring all of our learners and achievers expand their skillsets to accelerate action to achieve sustainability goals.

Much of USask's research, scholarly and artistic work has always been directed towards the world's wicked problems, but in 2023-24, I am delighted with how much easier it has become to identify those initiatives and to celebrate the amazing contributions from USask's Research, Scholarly, and Artistic Works (RSAW) community. The breadth and depth of examples – everything from the quantum-enhanced agriculture to maternal and newborn health advancements in Africa to electric vehicle battery supply chain is inspiring – reminding us of the significant impact the RSAW work at USask has. While this 2023-24 Progress Report aims to identify and showcase numerous examples of our success, it is certainly not an exhaustive summary. If you are a member of USask's community and wonder why your contribution to the Sustainability Strategy hasn't been highlighted, please let us know at sustainability@usask.ca and we will do our very best to include you in our 24-25 Progress Report.

Finally, I want to recognize each of the individuals identified in our ever-growing People of Sustainability section – it is only through their commitment and efforts that USask is achieving the progress we are seeing. Keep up the good work and if there are ways in which the Office of Sustainability can support you, please let us know!

Janelle Hutchinson
Chief Sustainability Officer
University of Saskatchewan

The SDGs and USask

The United Nations' Sustainable Development Goals (SDGs) are an urgent call for action by all countries—developed and developing—in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth, all while tackling climate change and working to preserve our oceans and forests.

USask's Sustainability Strategy was developed with a strong foundation built on addressing the SDGs. The broadness of the goals combined with the specificity of the actions nested within each goal allow every member of the campus community to connect their studies or their work to progress on the goals. We encourage everyone to visit the [UN's website](#) to learn more about the goals and their recommended actions.



Throughout this report, we have included connections to the SDGs by way of the numerical icons. These icons are not intended to be comprehensive assessments of all of the work done on any one SDG, but instead to acknowledge and celebrate the great work achieved by USask community members and how it supports specific SDGs.

The Office of Sustainability



Janelle Hutchinson

Chief Sustainability Officer

As the University of Saskatchewan's first Chief Sustainability Officer, Janelle leads the implementation of our Sustainability Strategy and assists leaders across the organization with moving the work of the sustainability strategy forward. Janelle works with individuals within key portfolios with specific responsibilities for academic/curriculum, research/discovery, institutional operations and external engagement to implement the strategy. Additionally, Janelle is responsible for institutional-level sustainability work such as reporting on the success of the

strategy and other sustainability-related initiatives, coordinating governance and advisory tables, creating and managing policy and procedures, leading communications strategies, and representing the university to external stakeholders.



Matt Wolsfeld

Reporting & Engagement Specialist

Matt works to celebrate and map the progress of the Sustainability Strategy and to facilitate the development of a strong culture of sustainability that is visible throughout campus. By supporting the collection of sustainability data across all areas of campus life, reporting on the progress of the Sustainability Strategy, and leading campus sustainability engagement initiatives to bring all community members into the fold, he helps to create a campus community that intentionally chooses and initiates sustainable behaviour, contributing their part to achieving USask's sustainability goals.



Dana Kwan

Community Engagement and Event Coordinator

Dana works to identify and implement opportunities, events and engagement strategies which will increase awareness of the Sustainability Strategy and mobilize action throughout multiple groups across campus, including students, faculty and staff.

Sustainability Leadership Table

The Sustainability Leadership Table is intended to be an evolving group of special advisors who help to operationalize the Sustainability Strategy in their respective areas. The inaugural 3 members of this group include:



Robert Bierman

Director, Planning, Design & Construction

Robert leads the charge in USask's Path to Zero plan towards the university's 2030 goal of cutting campus GHG emissions by 45% from 2010 levels and a long-term objective of reaching net-zero emissions by 2050. Much of his work helps to achieve progress within Commitment 2 of the Sustainability Strategy.



Dr. Nancy Turner (PhD)

Associate Vice-Provost, Teaching & Learning

Nancy helps to reimagine what education for sustainability at USask means by working towards progress within Commitment 3 of the Sustainability Strategy. Her work helps to support the development of a generation of leaders well-versed in the area of sustainability, regardless of academic discipline.



Dr. Maureen Reed (PhD)

Distinguished Professor, SENS
UNESCO Co-Chair in Biocultural Diversity, Sustainability, Reconciliation, and Renewal

Maureen's focus is on deepening USask's sustainability research and enhancing the visibility of external training partnerships on the national and global stages. Her work spans across many areas of the Sustainability Strategy, though much of her work in the area of sustainability research can be mapped within Commitment 4.

The People of Sustainability

The work of achieving the goals of the Sustainability Strategy would not be possible without the tireless work of staff and leaders all across the university. This page is dedicated to some of the important sustainability champions that help push the Strategy forward from within their own areas of work. The Office of Sustainability is always keen to expand and celebrate members of USask's community who support the sustainability strategy, so please contact us if you would like to be included within next year's report.



Dr. Airini (PhD)

Provost and Vice-President, Academic

As the Provost and Vice-President, Academic, Airini provides leadership and strategic direction in order to achieve goals as outlined in Commitment 3: Empower Action.

Currently on administrative leave



Gary Brunet

Director, ICT Support Services

Gary works to embed sustainability into the university's vast IT systems network. This includes addressing electronic energy consumption across campus devices and helping to reduce printing dependency on campus.



James Cook

Manager, Campus Planning & Real Estate

James is responsible for the long-term planning of development and real estate management for campus lands. His advocacy for sustainability helps to bring important social and environmental factors into the decision-making process for large projects that will impact USask across many decades to come.



Graham Fairhurst

Research Facilitator, SENS

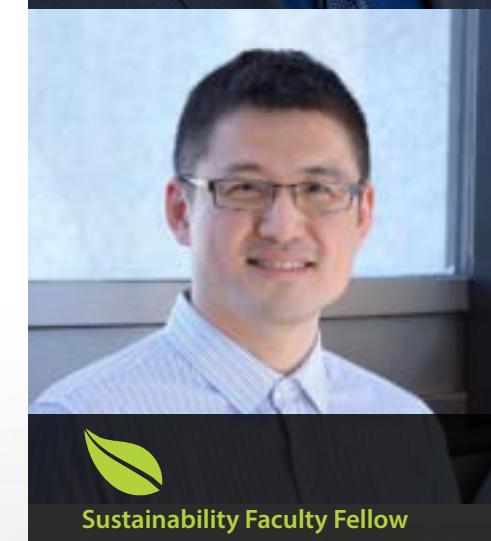
As a Research Facilitator, Graham works with SENS faculty and leadership to provide operational and strategic support with funding applications, awards nominations, and promoting faculty and graduate student research. He also plays an important role in the university's QS, THE, and STARS reporting efforts.



Greg Fowler

Vice-President, Administration and Chief Operating Officer

As the Vice-President, Administration and Chief Operating Officer, Greg provides leadership and strategic direction in order to achieve goals as outlined in Commitment 2: Model the Way.



Tate Cao

Assistant Professor, College of Engineering

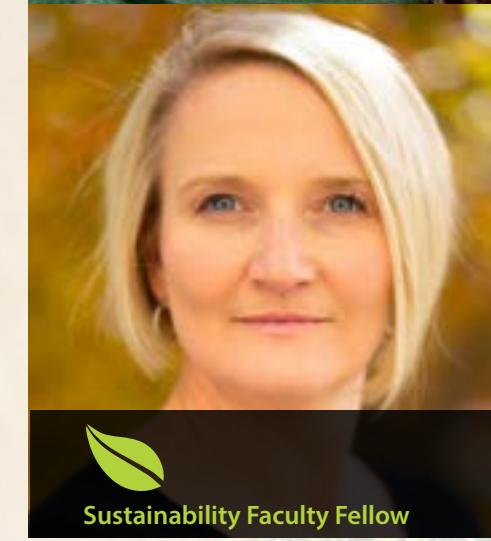
Tate Cao is an Assistant Professor in the Ron and Jane Graham School of Professional Development, College of Engineering. He teaches courses focused on engineering technology management, design and entrepreneurship. Tate wants students to reflect on decisions made around technology and their impact to build a better future.



Jennifer Drennan

Strategist

Jennifer acts as one of the leads of the university's THE Impact Ranking submissions, an annual international ranking that compares post-secondary performance across metrics tied to the SDGs.



Shannon Forrester

Lecturer, College of Kinesiology

Shannon Forrester is a Lecturer in the College of Kinesiology. She advocates for and promotes physical activity to enhance the full spectrum of health and wellness, and would like students to identify the personal role they will play in enhancing the health and wellness of their personal self, their communities, and the planet.



Dr. Baljit Singh (PhD)

Vice-President, Research

As the Vice-President, Research, Baljit provides leadership and strategic direction in order to achieve goals as outlined in Commitment 4: Capitalize on Strengths.



Dr. Kate Congreves (PhD)

Assistant Professor, College of Agriculture & Bioresources

Dr. Kate Congreves is an Assistant Professor of Plant Sciences in the College of Agriculture and Bioresources. Her courses primarily address the intersection of hunger, climate action, and life on land. Kate strives for students to reflect on food, i.e., where it comes from, how it is produced, and how it links to several SDGs.



Andrea Eccleston

Operations Manager, International Office

Andrea plays a role in all aspects of the International Office operations. She brings her experience managing undergraduate environmental programs at SENS to her work in aiding the university's QS, THE, and STARS reporting efforts.



Aditi Garg

Educational Development Specialist

Aditi helps educators to design courses and programs that allow students to develop competencies for social, environmental, and economic sustainability and to help meet the UN SDGs through teaching and learning. She also helps with curriculum mapping and development and the internationalization of teaching and learning.

The People of Sustainability

The work of achieving the goals of the Sustainability Strategy would not be possible without the tireless work of staff and leaders all across the university. This page is dedicated to some of the important sustainability champions that help push the Strategy forward from within their own areas of work. The Office of Sustainability is always keen to expand and celebrate members of USask's community who support the sustainability strategy, so please contact us if you would like to included within next year's report.



David Harris
Senior Research Analyst

David oversees much of the university's international ranking and assessment submissions. As these rankings have become increasingly focused on sustainability outcomes, David has become an ally of the Office of Sustainability in driving the collection and reporting of important sustainability-related data and metrics.

Le Li
Senior International Specialist

Le facilitates global collaborations to increase opportunities for faculty, students, and staff to access overseas academic and research activities, international research, and development funding and networks.

Dr. Eric Micheels (PhD)
Associate Professor, College of Agriculture & Bioresources

Dr. Eric Micheels is an Associate Professor of Agricultural and Resource Economics in the College of Agriculture and Bioresources. Eric would like students to critically examine issues facing agricultural firms and consumers from multiple perspectives, and then carefully consider the short-term and longer-term impacts of their decisions.

Meghna Ramaswamy
Director, International Office

Dr. Meghna Ramaswamy is the Director of the International Office (IO) and leads a team of international research and partnerships specialists to facilitate and support international activities for faculty, staff and students. She is a strong advocate for the UN SDGs and the role they play in international education.



Wendy James (PhD)
Director, GMCTL

Wendy is the Director of the Gwenna Moss Centre for Teaching and Learning. She leads teams who work on sustainability in teaching and learning through embedding sustainability in programs, helping faculty redesign courses around reflect/share/act, and gather data about the impact of the Sustainability Strategy.



Karsten Liber (PhD)
Executive Director, SENS

Karsten is the Executive Director of SENS, where he oversees the development of SENS graduate programs, certificates, and micro-credentials with a strong focus on sustainability. As SENS' primary ambassador, Karsten also encourages the translation of academic research into community, government, or corporate action.



Dave Palibroda
Sustainability & Emissions Officer

Dave develops and implements initiatives and strategies to conserve energy and reduce the university's GHG emissions. He works towards enhancing practices on campus as they relate to energy management. He also oversees many initiatives corresponding to Commitment 2 of the Sustainability Strategy.



Dr. Ulrich Teucher (PhD)
Associate Professor, College of Arts & Science

Dr. Ulrich Teucher is an Associate Professor of Psychology and Health Studies in the College of Arts & Science. Ulrich describes that planetary health depends on ecological determinants of health & ecological justice. He seeks to broaden learning outcomes to the ways we attend to the worlds in and around us, using body, heart, mind, & spirit.



Brooke Klassen
Assistant Professor, Edwards School of Business

Brooke Klassen is an Assistant Professor of Management and Marketing at the Edwards School of Business. It is important to her that students consider how they create and market goods and services in ways that are non-polluting, conserve energy and resources, and contribute to a strong economy and socially conscious world.



Jeff Lindsay
Manager, Safety Resources

Jeff works to embed sustainability concepts in occupational health and safety across campus. This includes important work in diverting landfill-bound materials and the management of hazardous waste across campus operations and research.



Bradie Preiss
Manager, Campus Engineering & Sustainability

Within Robert Bierman's Infrastructure, Planning, and Land Development portfolio, Bradie manages the team responsible for planning, designing, and overseeing the implementation and operation of sustainability measures across the university's buildings and facilities.



Quintin Zook
Director, Consumer Services

As the director of Consumer Services, Quintin oversees areas such as parking and transportation, protective services, and the Merlis Belsher Place and Marquis Hall buildings. He is a strong advocate for sustainability in these areas and helps to work towards achieving the SDGs across his wide portfolio.

1 LEVERAGE OUR PLACE

USask continues to be responsive to our social, economic, environmental and cultural setting; numerous units and departments across campus offer programming to meet USask's goal of working with communities to achieve the SDGs.

Establish an Advisory Table

Much of the work towards this action in 23/24 revolved around identifying, acknowledging, and empowering where possible the many advisory tables and collaborative teams USask is involved with. Partnerships of particular importance in 23/24 include:

Potential National Urban Park in Saskatoon

11 15 17

Parks Canada is collaborating with partners to create a network of national urban parks in Canada's large urban centres and Saskatoon has been selected as a potential site. The shared vision for these parks is to conserve nature, connect people with nature and advance reconciliation with Indigenous peoples. USask is proud to serve as a member of the National Urban Park Steering Committee, which is co-led by Meewasin Valley Authority and Parks Canada. In 2023-24:

- The Steering Committee provided feedback on the [National Urban Parks Policy](#), which was published in fall 2024 and is also working to better understand the operating and capital needs of a Saskatoon site.
- A USask committee, led by VP Administration Greg Fowler, explored the opportunities and challenges that could result if a portion of USask land is designated as part of a future National Urban Park. Members on this committee include representatives from the College of Agriculture & Bioresources, College of Arts & Science, School of Environment & Sustainability and administrative units including Planning, Design & Construction, Teaching, Learning & Student Experience, University Communications and USask's Legal Office. More work will continue in 2024/25 to explore these opportunities.

USask and City of Saskatoon Sustainability Task Team

11 17

As part of the Memorandum of Understanding signed between the University of Saskatchewan and the City of Saskatoon in 2018, the Sustainability task team continues to share information, identify mutual areas of research interest and ultimately support and promote mutual sustainability goals.

2023-24 HIGHLIGHTS

7

**student-community
project partnerships**

2

**joint research projects
(Climate Action Barriers and
Governing Municipalities Sustainability)**

1

**continuing working group
(Stormwater Collaboration)**

Three new Research Junction partnerships also began in 2023-24 relating to sustainability in the arts, housing policy, and public engagements with policy¹. The MOU also has helped ensure that information sharing on important issues continues unabated, with the City and USask collectively discussing changes to the federal and provincial pollution pricing systems, high performance civic building policy, and Saskatoon's new organics collection programs in 2023-24.



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Nurture & Convene Public Discourse

Our work to inspire widespread awareness, engagement, and action was furthered by many of USask's excellent public speaker series and community cafés. A sampling of these include:

Together/Ensemble Symposium 2023



In June 2023, the university hosted a Saskatoon event for the Sustainable Development Solutions Network's (SDSN) national Together/Ensemble Symposium. USask's event featured a full-day event that invited a collection of dozens of campus, City, community, and industry partners to discuss action for 6 SDGs corresponding to the university's Signature Research Areas. In [SDSN's final report](#) on the symposium, special recognition was given to USask speaker Gary Merasty for his talk on the intersection between progress on the SDGs and issues facing Indigenous and northern communities.

USask SDG Week 2024



From March 4-8, 2024, the university celebrated the United Nations' Sustainable Development Goals with a series of events including panels, workshops, professional development sessions, and more. Highlights included the launch of an [open access book](#) by the Sustainability Faculty Fellows and the Gwenna Moss Centre for Teaching and Learning, a new round of SDG Multiplier Training, and the first EcoMixer celebrating the winners of this year's EcoHack.

Sustainability Faculty
Fellows Book Launch



International Women's Day Presentation:
Dr. Jebunessa Chapola



SaskPower Energy
Futures Workshop



EcoMixer



SDSN
Online Panels



Silent Disco



SDG Multiplier
Training Workshop



Global Café Series:
Jonathan Pedneault, Co-Chair, Federal Green Party



kihci-okâwîmâw askiy Knowledge Centre Events



The [kihci-okâwîmâw askiy \(Great Mother Earth\) Knowledge Centre](#) in the College of Agriculture and Bioresources has been offering a bountiful collection of accessible workshop and lecture series. Their APEGS-recognized workshop series starting in September 2023 offered a total of 14 workshops with 700+ registrations. The Centre also connects Indigenous people, communities, and organizations to faculty researchers and research centres at USask, including collaborations between Cowessess First Nation and the Livestock and Forage Centre of Excellence on buffalo research.

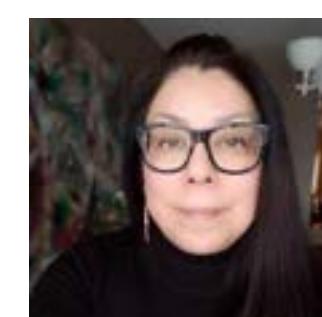
askiy Mentorship Team



Dr. Melissa Arcand
Associate Professor,
College of Agriculture and Bioresources



Jordie Gagnon
Senior Strategic Officer,
College of Agriculture and Bioresources



Candice Pete-Cardoso
Director,
kihci-okâwîmâw askiy Knowledge Centre,
College of Agriculture and Bioresources

Arts and Science Community Events and Lecture Series



The College of Arts and Science hosted 151 [public events](#) through 2023-24 that connected the university and the surrounding community through a wide variety of topics and disciplines. From the Philosophy in the Community lecture series asking universal questions like, "What Do We Owe Each Other" (Dr. Emer O'Hagan (PhD)) to the Global Café Speaker Series discussing Saskatchewan's potential contributions to a global economy with the Saskatchewan International Trade and Economic Development Office, opportunities abounded for Saskatoon community members to explore and discover the research and conversations taking place at USask.

151

public events

1 LEVERAGE OUR PLACE

USask continues to be responsive to our social, economic, environmental and cultural setting; numerous units and departments across campus offer programming to meet USask's goal of working with communities to achieve the SDGs.

Build Bridges and Create Portals

USask is home to many community-based research and service groups that aim to help effectively and equitably engage the surrounding community as partners and collaborators. Just some of these groups in 2023-24 included:

CLASSIC

[Community Legal Assistance Services for Saskatoon Inner City Inc.](#) (CLASSIC) provides free, professional, and confidential legal services for low-income members of the Saskatoon community who otherwise cannot afford legal advice or representation since 2007. CLASSIC runs three programs: the Walk-in advocacy clinic (WAC), the Legal Advice Clinic (LAC), and the Systemic Initiatives Program (SIP).

4 10 11 16 17

1,113

clients assisted in 2023/24

297

people assisted through Legal Advice Clinic in 2023/24

3 4 10 11 17

Department of Indigenous Health and Wellbeing

The [College of Medicine's Department of Indigenous Health and Wellbeing](#) received University Council approval in April 2023 to serve as a welcoming space for Indigenous health researchers, learners, and faculty in the college. The Department, the first of its kind in a Canadian medical school, recognizes improving the health outcomes of Indigenous Peoples in Saskatchewan as a priority for the College.



“WE'RE CREATING THE STRUCTURE THAT WILL ALLOW INDIGENOUS VOICES TO TELL US WHERE WE NEED TO GO. WE'RE CREATING A COMMUNITY, BUT WE'RE ALSO CREATING A PHYSICAL SPACE WHERE PEOPLE CAN CONNECT AND LEARN ABOUT WHAT'S HAPPENING IN THE COLLEGE OF MEDICINE.”

Janet Tootoosis
Vice Dean Indigenous Health, College of Medicine

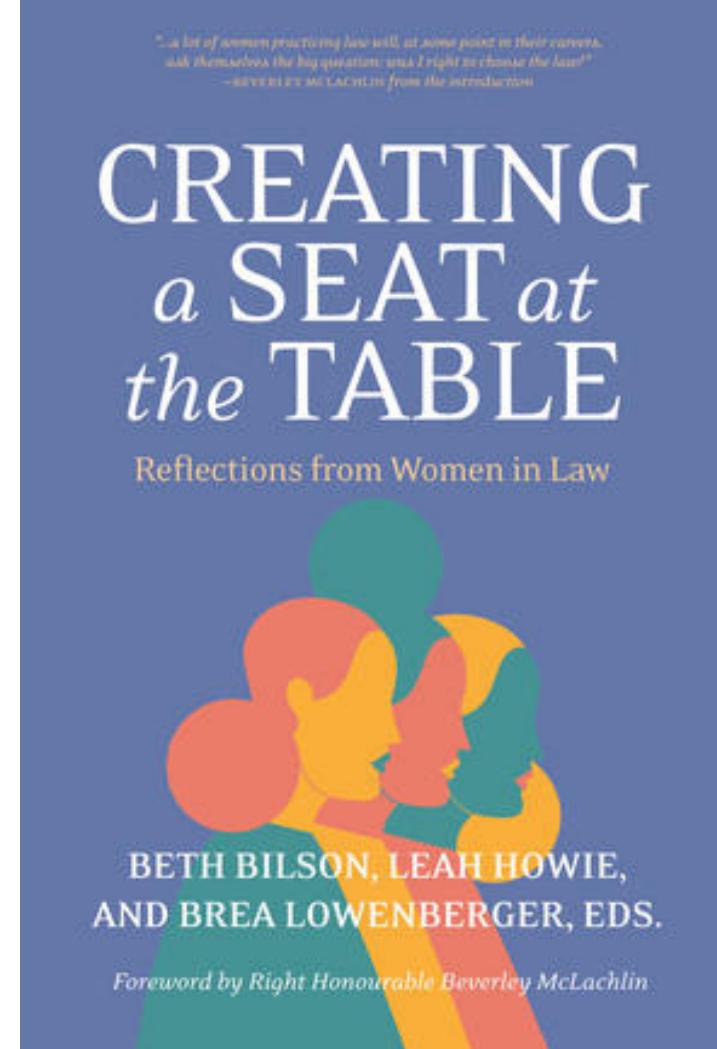
4 10 16 17

CREATE Justice

The College of Law's [Centre for Research, Evaluation, and Action Towards Equal Justice](#) (CREATE Justice) was created in response to a call for action for a more accessible justice system in Canada. CREATE Justice works towards its goal of creating a more accessible justice system through the implementation of new or existing projects, often through its in-house lab, aimed at making justice more accessible in a variety of ways. The Centre boasts a long list of current and completed projects and initiatives on topics such as transforming family justice, accessibility of the justice system for marginalized tenants, and partnership between justice and health.

In 2023-24, CREATE co-led the publishing of the book *Creating a Seat at the Table: Reflections from Women in Law*. This collection of personal letters from a range of women lawyers which invites reflection on how to improve diversity in the legal profession to better respond to unmet legal need in Saskatchewan became a bestseller within the USask Bookstore's inventory. The same team also completed the first season of *Dear Beth...A Women in Law Podcast*, which featured candid, funny, and provocative conversations to challenge the legal profession to think critically about ways to create a seat at the table for everyone in the legal profession. The podcast was named in Canadian Lawyer's best Canadian legal podcasts list for the year.

CREATE was also part of two important data-gathering partnerships this past year: with the SK Ministry of Justice to study best ways to deliver online legal information, particularly to newcomers to SK, and with the Law Society and Forensic Centre to complete the first-ever *SK Legal Data Scan and Needs Assessment*.



Creating a Seat at the Table: Reflections from Women in Law was published by CREATE Justice in October, 2023.

2 MODEL THE WAY

USask's entrepreneurial campus spirit pushes campus operations to support, adopt, diffuse, and scale sustainability solutions to work towards the achievement of our long-term greenhouse gas reductions targets.

Invest in Solutions

USask has identified three primary pathways to achieving our GHG reduction goals: decarbonizing our heating/cooling system, reducing demand through building infrastructure improvements including improved space utilization and building better as USask systematically embarks on capital projects and renovations. An overview of these efforts across 23/24 are as follows:

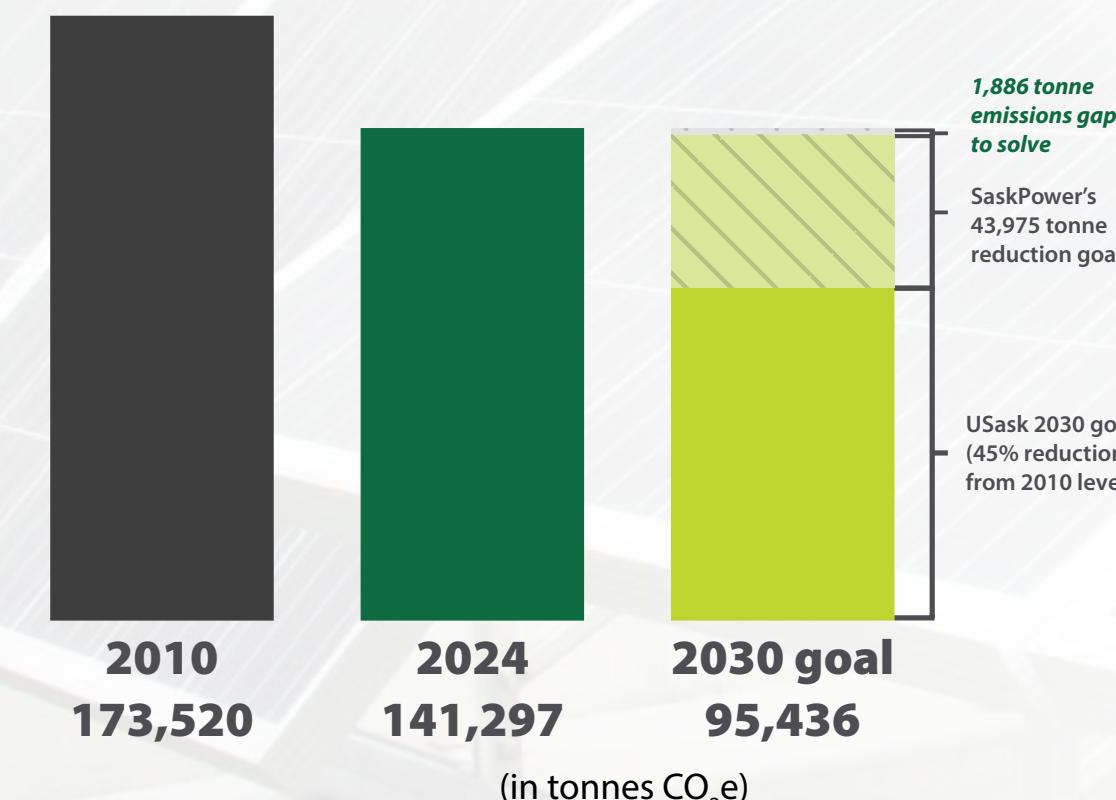
Total 2023/2024 GHG Emissions:

141,297 MT CO₂e
 ↓6% from 2022/2023 ↓19% from 2010 baseline

USask's GHG Reduction Goals

2030
45% below
2010 levels

2050
Net-Zero



Decarbonization and Demand Reduction

7 11 13

Throughout 2023-2024 a decarbonization study laid out a plan towards decarbonizing energy supply, heading towards a net zero emission goal for 2050. The final report, received in fall 2023 has helped to inform the university's mid- and long-term planning towards its decarbonization strategy.

The Optimizing Energy Efficiency (OEE) partnership with the Government of Canada was completed in 2023/24.

Many other demand-reducing projects took place in the past year, including:

- Arts Building energy efficient window replacements in the classroom wing.
- Arts Building mechanical and electrical upgrades.
- Agriculture Building electrical and steam automation control installation and mechanical upgrades.
- Murray Building energy efficient window replacements.
- Health Sciences, Murray Building, and Agriculture Building urinal retrofits.

70

urinals replaced, resulting in

\$121,000

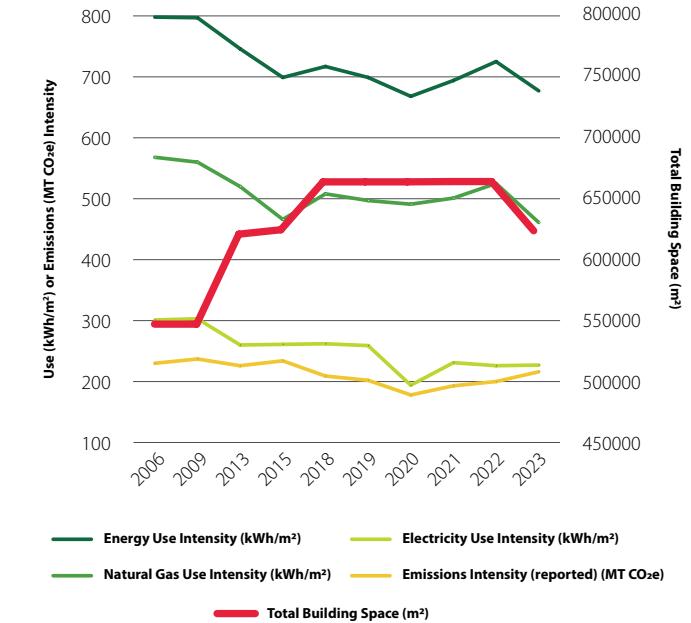
in annual cost savings.

Build Better

An \$85-million bond approved in 2018 is continuing to help USask move towards greener buildings on campus while also addressing significant deferred maintenance. Construction continued on the W.P. Thompson Building in 2023-24 while major upgrades and renovations are still underway at the Arts, Agriculture, and Murray Buildings.

The results of our building improvements can be seen in our reduced natural gas use intensity over time. USask's weather-normalized natural gas use intensity per square metre of the USask campus area has reduced by 18% since the baseline, while our building space has grown by 14% in the same time, in part attributed to better building envelopes and management of our heat on campus.

Energy and Emissions Intensity vs. Total Building Space



2 MODEL THE WAY

USask's entrepreneurial campus spirit pushes campus operations to support, adopt, diffuse, and scale sustainability solutions to work towards the achievement of our long-term greenhouse gas reductions targets.

Bolster Action & Remove Barriers

We continue to examine and amend our institutional policies where necessary to make action for sustainability easier and more convenient while removing incentives for unsustainable or harmful behaviour. Some initiatives which had particular impact in 23/24 were:

Sustainability Revolving Fund

9
11
17

The Sustainability Revolving Fund (SRF) continued to provide valuable funding for operational sustainability improvements on campus. Originally a \$1 million fund created in 2014, as of April 30, 2024 the fund has grown to \$1.918 million through the utility savings created by its projects. In 2023-24, approved projects included continued plumbing upgrades across campus, lighting upgrades in the Poultry Barn and WCVM's animal care areas, and the replacement of the Williams Building's boiler plant.

\$1.9M
in sustainability project funding available through the SRF

\$2M
in total project expenditures since 2014

\$1.86M
in total repayments from savings since 2014



WCVM and Poultry Barn Lighting Upgrades

\$5,000

in annual electricity cost savings.



Urinal Replacements Phase 3

\$120,000

in annual water cost savings.



Williams Building Boiler Plant Replacement

\$65,000

in annual natural gas cost savings.

Engagement Initiatives

13
17

Work continued in 2023-24 to engage our energy-intensive research spaces in energy reductions, particularly in regards to appropriate fume hood usage. Targeted communications and lab signage was deployed in new spaces to educate lab users on the energy impacts of fume hood use. Estimates for D-Wing alone suggest that changing fume hood schedules and keeping them closed when not in use could save up to 7.4 tonnes CO₂e in GHG emissions annually **per fume hood**.

Sustainability in IT

12
13

USask IT's Print Optimization Program has been helping to make printing on campus safer, more efficient, and less wasteful through the adoption of networked devices, toner cartridge management, and the removal of wasteful individual desktop printers. Since its inception, the program has resulted in a reduction of 110,000 kg CO₂e (carbon dioxide equivalents) of greenhouse gas (GHG) emissions and a remarkable decrease in printer power consumption by 854,000 kilowatt-hours (kWh).

IT has also partnered with Quantum Lifecycle Partners to address electronics waste on campus. Across 2023-24, 5,657 items were sent for recycling, totalling nearly 10,000kg of electronics that were either resold, reused, or recycled.



The Print Optimization Program has prevented equivalent CO₂e to circumnavigating the globe

62 times

107

Desktops

63

Laptops

5

Mobile Phones

Recovered and kept out of the landfill

2 MODEL THE WAY

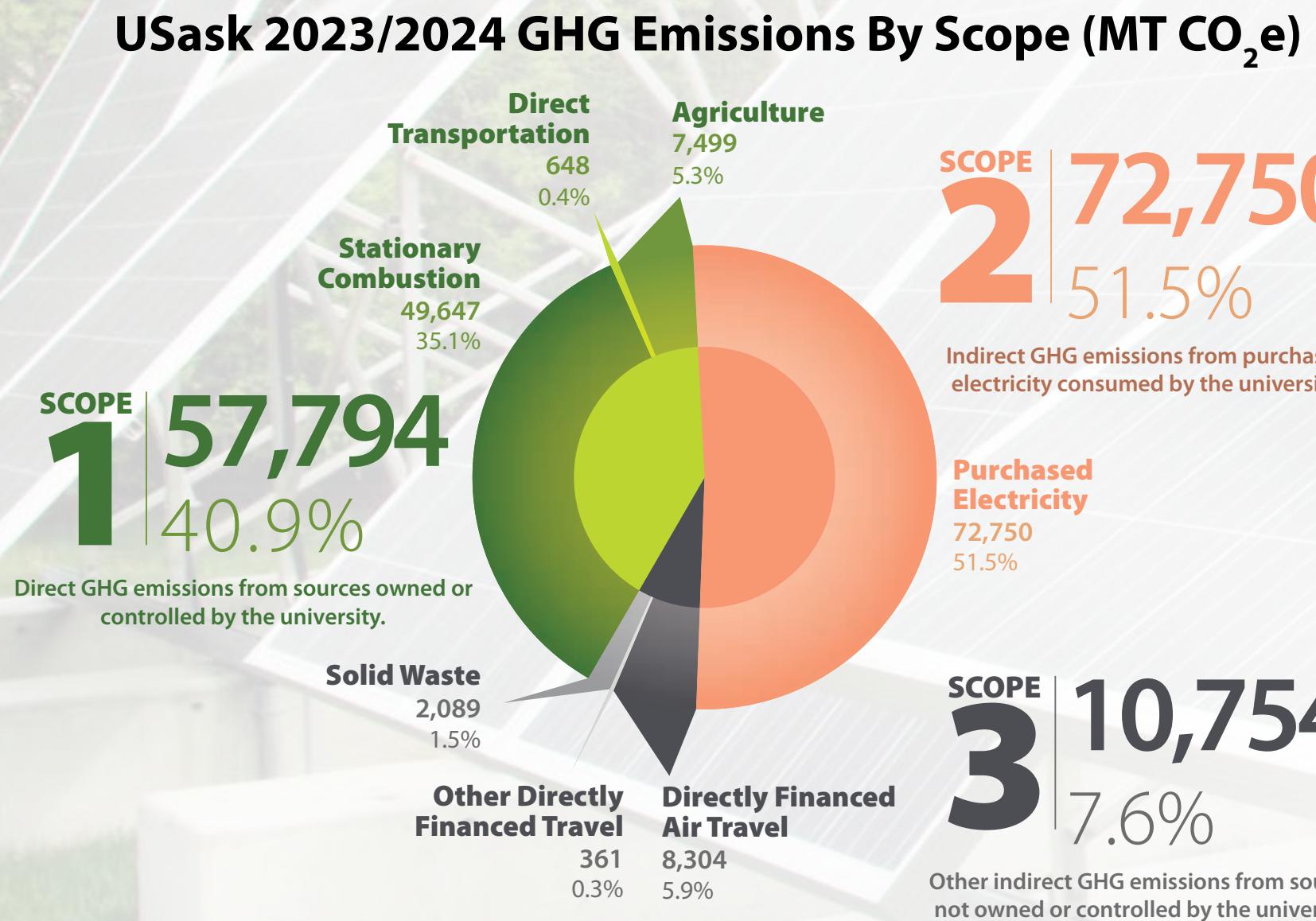
USask's entrepreneurial campus spirit pushes campus operations to support, adopt, diffuse, and scale sustainability solutions to work towards the achievement of our long-term greenhouse gas reductions targets.

Share Widely Our Progress

As we invest in solutions and change behaviours around campus, USask is working to identify proper and effective metrics for change and mechanisms for sharing these effectively with the community. Measures taken in 23/24 include:

2023-2024 GHG Emissions Inventory

USask decreased its emissions by 6% from 2022/2023 levels this past year. For a more detailed look at our 2023/2024 GHG emissions, please refer to Appendix A of this report.



**Total 2023/2024
GHG Emissions:**

**141,297
MT CO₂e**

↓ 6%
from 2022/2023

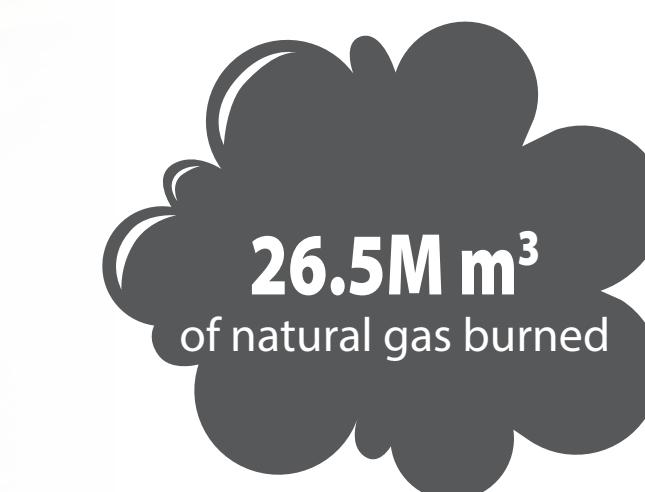
↓ 19%
from 2010 baseline

7

11

13

2023-2024 by the Numbers



26.5M m³
of natural gas burned

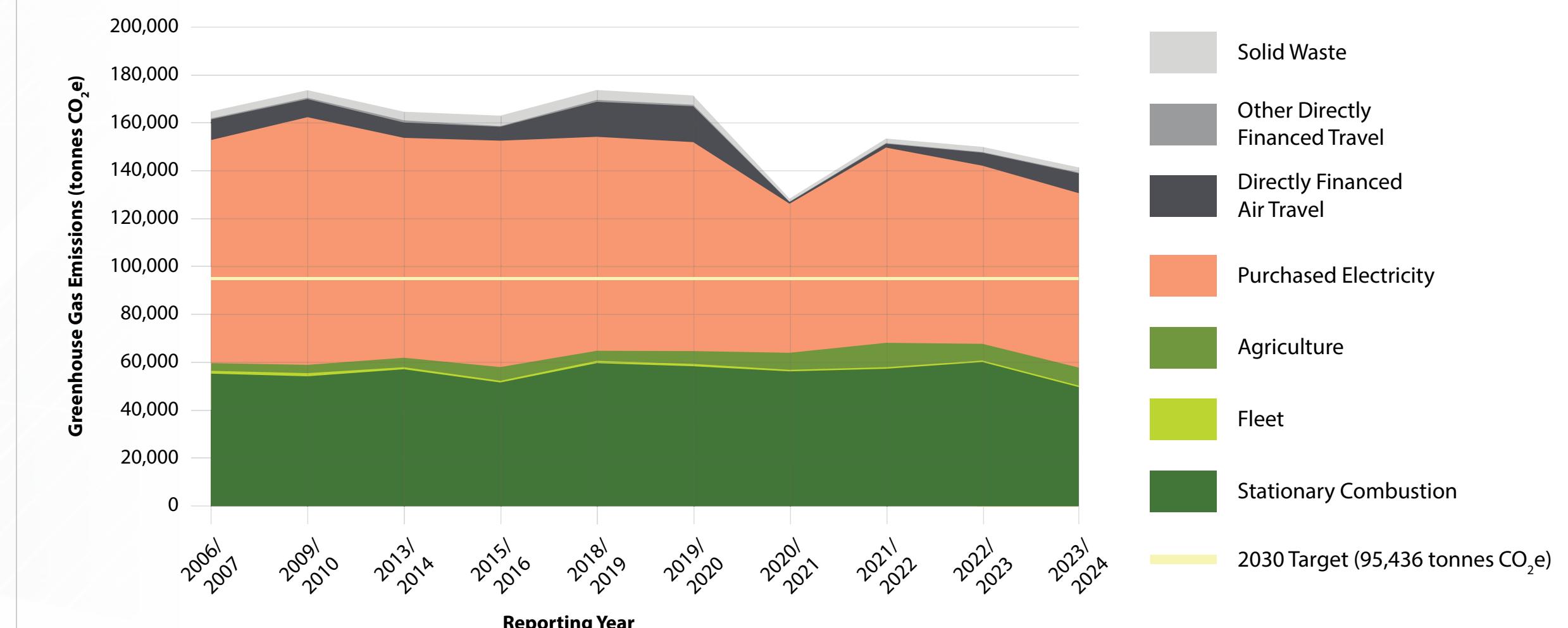


1,337 metric tonnes
of solid waste



30.8M km
of staff/faculty air travel

USask GHG Emissions Over Time



3 EMPOWER ACTION

USask's support of a generation of diverse learners and achievers is helping to shift mindsets and expand skillsets to accelerate action to achieve the SDGs.

Equip Champions

Making sustainability experiences and education widely available is helping to equip all disciplines within the USask community with the tools needed to be agents of change in their lives. Progress was achieved in 2023-24 through these projects:

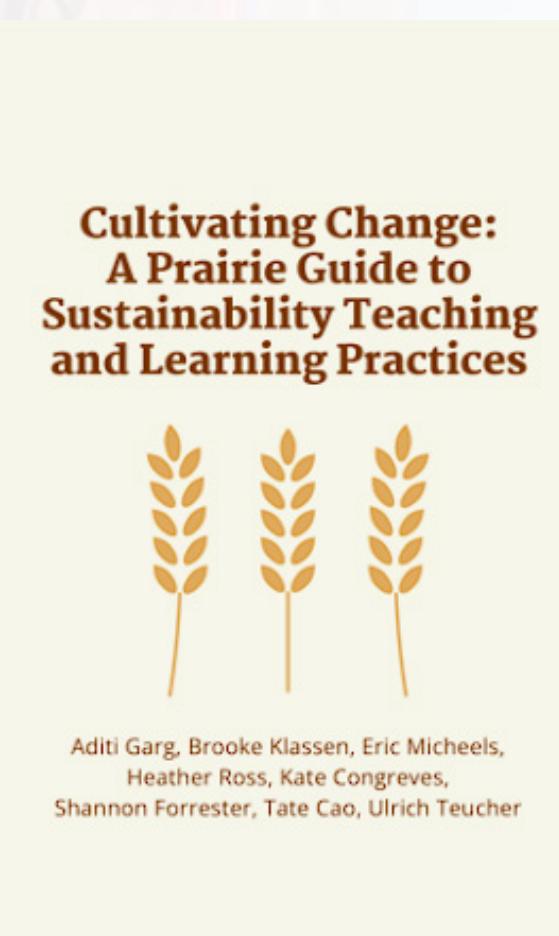
Sustainability Faculty Fellows

The university's first cohort of Sustainability Faculty Fellows completed its second and final year in 23/24. Of particular note among their accomplishments were their contributions (one chapter per Fellow) to the book [Cultivating Change: A Prairie Guide to Sustainability Teaching and Learning Practices](#), which was published by the Gwenna Moss Centre for Teaching and Learning (GMCTL). The book is an open resource available to any post-secondary faculty looking to embed open and sustainability practices within their own courses.

"The goal of all education for sustainable development is simple—we want students to have the competencies to address the planet's greatest issues. Most students will only develop these competencies if they practise them, get feedback on them, and reflect on them throughout a program of study. Sustainability Faculty Fellows are an example of embedded experts who can support students in this learning."

-Excerpt from Cultivating Change

4 17



Cultivating Change: A Prairie Guide to Sustainability Teaching and Learning Practices, published for open access in March, 2024.

Faculty Fellows Achievements

In addition to the creation of the open source book mentioned above, the Faculty Fellows were able to achieve a number of other notable feats on campus, including:

- The integration of SDG-focused activities, reflection, and assessments into the first through third level of undergraduate learning at the College of Engineering
- Expanding from only SDG 3-connected activities to additional SDGs across all undergraduate and graduate levels at the College of Kinesiology. Shannon Forrester (Kinesiology Faculty Fellow) also emphasized student agency in her courses, inspiring other instructors in the College to adapt their courses.
- Integrated sustainability learning outcomes in the MBA program at Edwards School of Business.
- Dr. Kate Congreves (PhD) transitioned her classes towards active learning pedagogies, influencing her co-teaching colleagues to do the same.

1,000+

**students taught in Faculty
Fellows courses**

17

**Faculty Fellows-created or
-inspired courses**

40%

**increase in reported student confidence
in communicating about and finding
creative solutions for sustainability**

Sustainability Leadership Table

The Sustainability Leadership Table continues to help identify opportunities and action plans for achieving the goals of the 2021-2030 strategy. This table may expand or shift in the future as different efforts become the focus of Sustainability Strategy implementation and is not reflective of the numerous individuals across campus who support the Sustainability Strategy in their work.

17

3 EMPOWER ACTION

USask's support of a generation of diverse learners and achievers is helping to shift mindsets and expand skillsets to accelerate action to achieve the SDGs.

Engage Sustainability in Curricula

The modification and adaptation of curricula to include contemporary sustainability topics is helping USask accelerate our transformation into the institution the world needs. Efforts in 23-24 include:

Sustainability Course Inventory

The 2023 inventory of the university's sustainability-focused and sustainability-inclusive courses has been maintained and remains involved in future planning to help students continue to identify and choose academic courses that further their understanding of sustainability. Details can be found on USask's "[Find a Program](#)" page.

312
courses with
sustainability content

45
ACROSS
academic departments

4

Undergraduate Certificate in Sustainability

The [SENS Undergraduate Certificate in Sustainability](#)—which is open to undergraduate students from all Colleges at USask—continues to offer significant exposure to sustainability-related concepts and practices while students gain an understanding of how to integrate human-environmental systems within our current reality and how to critically evaluate sustainability efforts. In the November 2023 and Spring 2024 convocation ceremonies, 18 students graduated with the certificate from 11 different colleges.

Spring 2024's Convocation awarded the Undergraduate Certificate in Sustainability to students from 11 different degree programs:

Environmental Biology
Hydrology
Cellular, Physiological, and Pharmacological Sciences
Environmental Engineering
Agriculture - Environmental Science
Chemistry

Political Studies
Renewable Resource Management - Resource Science
Toxicology
Environment and Society
Agribusiness

Edwards School of Business Embeds Sustainability in MBA

Brooke Klassen, Assistant Professor of Management and Marketing at Edwards School of Business and Sustainability Faculty Fellow, took her learnings from the Faculty Fellow program and used them to embed sustainability into the curriculum of graduate level business class MBA 803: Business and Society. Klassen assessed students' ability to, "demonstrate the ability to integrate social responsibility and sustainability into managerial decision-making". Activities included an SDG multiplier training session, curated cases and articles that highlighted SDG-related issues in business, and a full-day simulated experience of managing a manufacturing business where the assessment included sustainability decision-making.

4 8

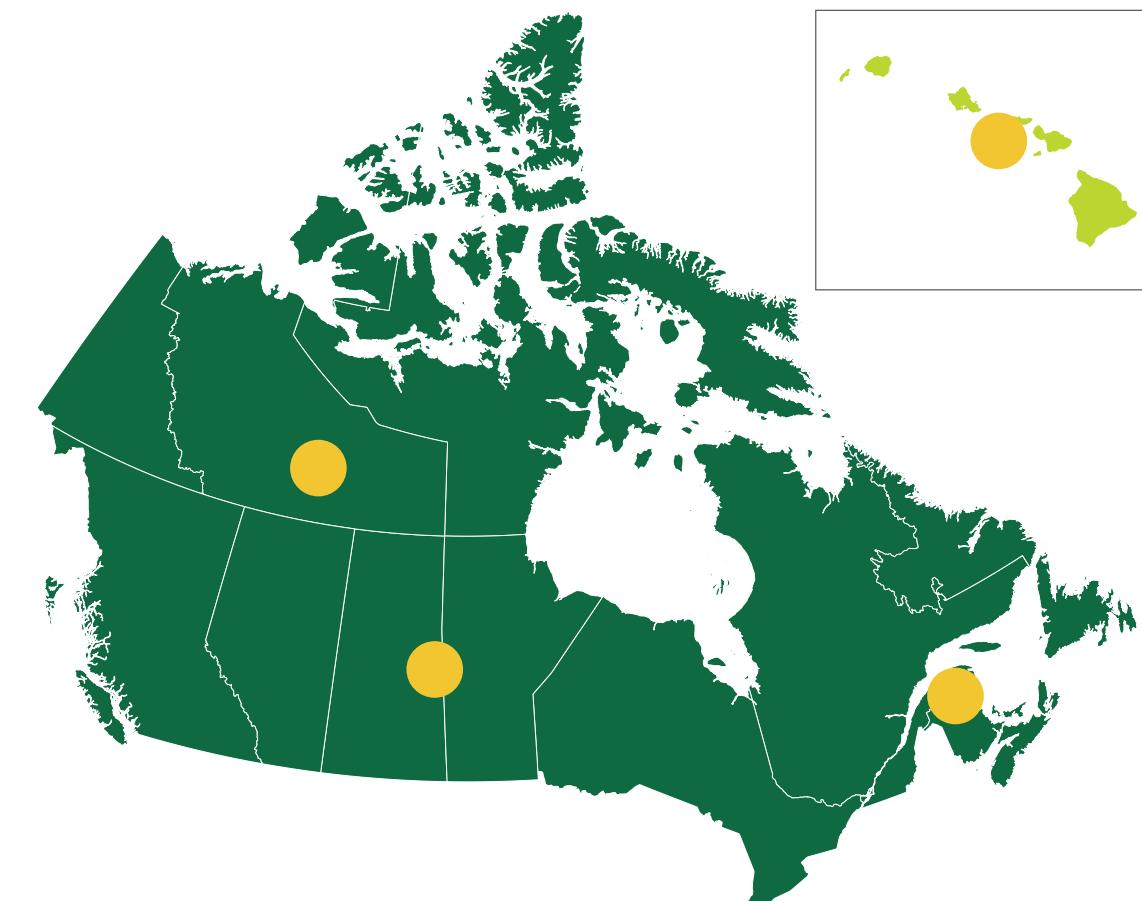


2024 RCE SK
Award Winner

Indigenous Land-Based Education Program

The [College of Education's Master of Indigenous Land-Based Education](#) (MILBE) program saw its first 16 graduates convocate in November 2023. Developed by Dr. Alex Wilson (EdD), member of Opaskwayak Cree Nation and professor in the Department of Educational Foundations, the program is rooted in Indigenous worldview and frameworks, taught primarily by Indigenous faculty, and offered in partnership with Indigenous communities (including co-design and instruction by local Elders, Knowledge Holders, and cultural providers). The 2023 graduating cohort travelled to Ugpi'Ganjig First Nation in New Brunswick, the Yellowknives Dene First Nation in the Northwest Territories, the Kingdom of Hawaii, and a canoe trip on the Saskatchewan River from Cumberland House in Saskatchewan to Opaskwayak Cree Nation in Manitoba.

4 10 14 15



3 EMPOWER ACTION

USask's support of a generation of diverse learners and achievers is helping to shift mindsets and expand skillsets to accelerate action to achieve the SDGs.

Enable Diverse Learning

USask continues to enable access to diverse modes of sustainability education and providing varied credential types in the efforts to allow community members to select their optimal mode of learning. Work in this area includes:

Health Sciences Inter-Professional Education Redesign

3 4 17

Nothing has been more disruptive to society in recent history than the COVID-19 pandemic. When quarantine and remote learning became the norm in 2020, USask Health Sciences had to figure out how to maintain their inter-professional education (IPE) requirements without the ability for in-person events. The work done to address this problem has since resulted in an entirely new approach to IPE which has continued to evolve and improve over the years, and has been adopted by other institutions for its effective, popular, and cost-saving measures.

The Health Science team transitioned their in-person, one-time events which students registered for on Blackboard Learn to either online or in-person (with the choice laying with each small, self-regulating team of learners) using the Interprofessional Education Competency Tracker (IPECT) platform. This change eliminated the need for IT support, tutoring costs, in-person consumables, and reduced staffing requirements to two full-time positions. Since switching, the number of participating programs has increased from 7 to 11 and SaskPolytech nursing students have a much easier time accessing and taking part. Moving away from sign-in sheets and tutors has resulted in all learners bearing individual accountability for their participation and completion of their requirements while establishing a continual record of progress reports and interactions. The IPECT platform has also enabled the integration of a wide variety of instructional approaches, compared to the previous format's reliance on tutor-led problem-based learning. In all surveys of students, faculty, and staff since the change, satisfaction with IPE has greatly increased, and the IPE model implemented by Health Sciences has inspired several other higher education institutions to consider a similar format for their own offerings.

Health Sciences Shared Courses Project

3 4 17

The Health Sciences Shared Courses Project, first inception in 2021, was able to share its first major summary of results in 2023. This initiative assesses opportunities to deliver shared health science courses to students across USask's health science colleges and schools and develops any required supporting policies, procedures, and infrastructure to enable the courses. Its 2023 summary of results recognized nearly 1,000 participating USask community members across two common topic modules (professionalism and ethics). The adoption of these common topic modules has resulted in a reduction of content duplication across health science programs with online offerings and no limit on class size, while students are given flexible opportunities to work, practice, and develop a common professional language in small interdisciplinary teams.

The project also launched [Stepping Stones: Resources for Indigenous Health, Wellness, and Reconciliation](#) in 2023. This webpage features curated resources (including videos and webinars, readings, websites, activities, courses, and instructor resources) for fostering compassionate and respectful interactions with Indigenous peoples and communities on the path to holistic health, wellness, and reconciliation.

SENS Graduate Certificates

4 9

The School of Environment and Sustainability (SENS) added four graduate certificates to its lineup of offerings in climate change, energy, sustainability, and water. In 2023/24, 10 completed certificates were awarded, 6 of which laddered into a full master's program with the school and will start in fall 2024.

3 EMPOWER ACTION

USask's support of a generation of diverse learners and achievers is helping to shift mindsets and expand skillsets to accelerate action to achieve the SDGs.

Demonstrate & Experience Learning

USask is enabling students to work with local community leaders to explore how they can apply action towards the SDGs in real-world applications. Examples in 2023-24 include:

Community-Engaged Service Learning

Community-engaged projects for sustainability are opportunities for USask students to contribute towards achieving environmental, social, or economic sustainability with community partners while developing and reflecting on the related competencies. This is mutually beneficial – community partners can complete smaller, impactful projects and USask students can gain career-ready skills through placements of approximately 40 hours. USask students reflect on their sustainability competencies via ‘wraparound’: before, during, and after the experience.

ENVS 401

ENVS 401 – Sustainability in Action, the capstone course to the School of Environment and Sustainability's Undergraduate Certificate in Sustainability continues to be open inquiry-based, dynamic, teamwork-driven, and application-focused course enabling student-led sustainability projects. Since its inception, the course has attracted a high degree of interest (>470 students over 10 years), and has fostered more than 100 student projects. The class of 2023/24 featured 22 students and showcased projects including a cooperative effort with the City of Saskatoon and neighborhood community associations to develop plans to transform a local park into an outdoor classroom and the creation of architectural plans and scalability options for a mobile greenhouse for use in Northern and Indigenous communities.

4 11 17

13
sustainability
student projects
completed in 23-24

4 11

Winter 2024's ENVS 401 featured students
from 8 different degree programs:

6 **5** **3**

Environment &
Society Environmental
Science Environmental
Biology

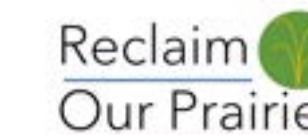
1
each from
Drama; Cellular, Physiological, & Pharmacological
Sciences; Chemistry, Management; and Political Science

EcoHack

EcoHack 2024 at USask was a resounding success, bringing together over 30 participants from diverse disciplines. The event focused on innovative solutions for pressing environmental challenges, including waste management, sustainable energy, and biodiversity conservation. Teams had 5 days to develop and pitch their ideas to a panel of judges. Notable projects included a free to-use transit plan and apps to improve waste management. The winning teams were announced at our EcoMixer where all the participants, judges, partners and other staff and students attended.

30 participants, **7** partner organizations, **5** days,

Many thanks go out to the sponsors and community partners of EcoHack 2024



Global Sustainability Competition Award Winners

Kristin Moskalyk and Nicole Lamoureux, graduate students from the University of Saskatchewan's (USask) Educational Technology and Design (ETAD) program through the College of Education, were awarded \$10,000 as finalists in the Metaverse for Sustainable Development Goals Global Prize and Virtual Reality Competition. The pair, selected from 257 teams in more than 70 countries, won the award for their research in immersive learning and sustainability education in a virtual reality world. Both Kristin and Nicole are now working as instructional designers with the GMCTL at USask.

4 17

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Sustainability Learning Competencies Feedback

4

In their first year of being accessible to courses at USask the Sustainability Learning Competencies created by the Gwenna Moss Centre for Teaching and Learning (GMCTL) received excellent feedback from students, who felt the added focus on the competencies made them feel better equipped to handle sustainability problems in the real world.

Increases in Sustainability Learning Competencies

Pre- and post-term survey of students



Students on the Sustainability Learning Competencies

"Now, I have a much clearer picture of what sustainable development means and why it is important for us and future generations...I came across multiple sustainable reporting tools and platforms being used...Now I can confidently undertake any project and can, at least, come up with solutions to improve on it."

"Now that I understand the definition of sustainability more, I am confident in my abilities to contribute to the SDGs. I feel that a better understanding of the SDGs will allow me to be prosperous in my personal, work, and economic life, as well as educate others on the importance as well."

"I have learned so much how [my health-related discipline] can influence sustainability through so much more than just good health and well-being...such as sustainable cities and communities, infrastructure, reduced inequalities, life on land, climate action, quality education, and strong institutions..."

"I learned from this course about the potential to have sustainable farming. For a while I believed it was a myth or something for the future to figure out. It just happens that we are that future, we can provide sustainable agricultural practices."

4 CAPITALIZE ON STRENGTHS

USask is bringing together the campus community to create knowledges focused on designing and implementing innovative and workable solutions to sustainability challenges.

Build Leadership and Capacity

USask is working to increase, diversify, and enhance convergence research, encouraging every member of the university to focus some energy into solving sustainability challenges. Work in 2023-24 includes:

Africa Research Partnerships

The University of Saskatchewan currently hold 7 active research agreements across Africa, with 5 more MOUs currently in development. These partnerships have resulted in collaborations with 170 different institutions across the continent and a total of 465 co-publications. The research conducted through these partnerships covers a wide range of topics, including:

- Sustainable agriculture scalability
- Women and Indigenous-led food security
- Water security
- Climate action
- Supply chain diversification
- Maternal and newborn health advancements
- Literacy and educator capacity
- Sexual and reproductive rights
- Mental health legislation
- Cattle vaccine development
- HIV stigma reduction

This is but a snapshot of the work the International Office does in maintaining USask's 650+ global relations spanning 60 countries. For more information, see page 26.

1 2 3 4 5 6 8 10 13 16 17

Top 5 Countries of Collaboration



Sustainability Awards

4 17

The Office of Sustainability sponsored two new awards in 2023 to recognize exemplary undergraduate sustainability-focused research.

Life and Health Sciences Research Expo Sustainability Progress Awards

USask Health Sciences' Life and Health Sciences Research Expo annually recognizes exemplary research and learning activity at USask across the categories of basic, translational, clinical, and applied science as well as social and population health and, as of 2023, sustainability. The Office of Sustainability was proud to present its 2024 awards to:

- **Sustainability & Planet:** Mahesh Rachmalla; *Chronic Dietary Arsenic Exposure Disrupts Dopaminergic Signaling Pathways and Impairs Cognitive Performance in Adult Zebrafish (Danio rerio)*
- **Sustainability & People:** Ryan Chan; *Take-Home Naloxone Use & Access in Older Adults Living with Pain: Scoping Review*

USSU Symposium Sustainability Awards

The USSU Undergraduate Symposium is an annual event highlighting the research, scholarly and artistic works of undergraduate students at the University of Saskatchewan. The Office of Sustainability has continued to sponsor sustainability awards at the symposium since 2022 and was proud to present four awards at this symposium in 2024:

- Kara Walz; *Calf Muscular Changes Following Bedrest*
 Sunny (Shen Yi) Yang; *Foaming Property of Mildly Fractionated Faba Bean Protein Under Potential Bakery Application Conditions*
 Hassan Cheema; *Investigating the Effect of Creatine Monohydrate on Brassica rapa subsp. Chinensis Plants*
 Brianne Symak; *The Effects of Chromium Exposure on Bumblee Buzz Response*

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Build Leadership and Capacity

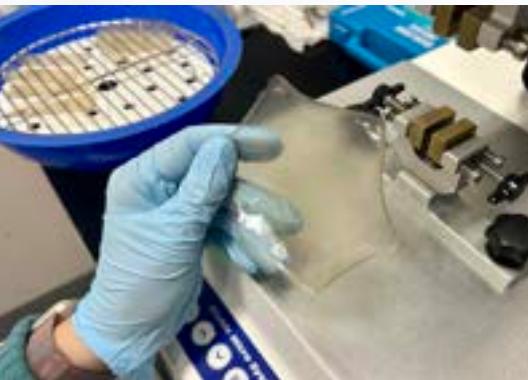
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Sustainability Research Highlights

Among the plethora of sustainability-related research at USask, here are a few notable examples of USask sustainability research building leadership and capacity over the past year:

Pulse Protein Packaging

Dr. Michael Nickerson (PhD) in the Department of Food and Bioproduct Sciences in the College of Agriculture and Bioresources has identified incredible potential for ["plastic" made from pulse proteins](#) in his work to find value-added crop ingredient uses. The "active" packaging being researched within his lab is set to replace petroleum-based plastic with a pulse protein-based film that incorporates food-safe antimicrobial agents to not only protect food but actually extend the shelf-life of products such as meat.



9 12

Indigenous Lenses on Food Security

Dr. Albert Ugochukwu (PhD), Erasmus Mundus scholar and Senior Policy Fellow at the Centre for the Study of Science and Innovation Policy (CSIP) in the Johnson Shoyama Graduate School of Public Policy (JSGS), has been developing a portfolio of research that brings together genomics, digital architecture, and technology, with a key focus on [enhancing our understanding of crop productivity and conservation through an Indigenous lens](#). His latest developments in this area involve examining the motivations, barriers, and opportunities for sharing of digital data in plant phenotyping.

2 9 10 15

Bioplastic Absorbents

At the Global Institute for Water Security (GIWS), Dr. Lee Wilson (PhD) has been creating a [bioplastic that functions as an absorbent](#) which can remove phosphate from water and redistribute it as agricultural fertilizer. The material is a pellet that contains cithosan (a marine polysaccharide), eggshells, and wheat straw, making it an excellent "closed loop" material in which its end products may fertilize its precursors.

2 6 9 12 14

Sustainability Researcher Highlight: Dr. Hassan Vatanparast (PhD)

Dr. Hassan Vatanparast (MD, PhD), professor in the School of Public Health and the College of Pharmacy and Nutrition, has consistently been a champion of sustainability research at USask. As a recipient of the 2023 Saskatchewan Health Research Foundation (SHRF) Career Achievement and 2024 USask Distinguished Researcher Awards, Dr. Vatanparast was celebrated for his impactful nutrition and public health research that has informed local, national, and international dietary recommendations, bone health and osteoporosis interventions, empowerment-focused Indigenous community health practices, and immigrant and refugee nutrition programming. His research results have been cited in major policy documents such as the World Health Organization's World Report on Health of Refugees and Migrants, and his work with others on the groundbreaking, 25-year-long Bone Mineral Accrual Study in Saskatchewan children, serves as the main line of evidence in the U.S. Institute of Medicine's recommendations on daily calcium intake for children and adolescents.



In addition to his research, Dr. Vatanparast has been recognized for his passion for supporting and mentoring the next generation of public health researchers. He has supervised more than 100 graduate, postdoctoral, and research students in his Nutritional Epidemiology Lab, with his students being described as "incredibly loyal" due to his ability to inspire, uplift, and create opportunities for them to grow and develop their research skills. In addition to his valuable work in the research community, Dr. Vatanparast has made an invaluable ally to his local communities as well. In December 2023, he was part of a community engagement event in Cowessess First Nation dedicated to identifying ways youth could become champions for change in the community, which has now led to being a finalist in the Public Health Agency of Canada Type 2 Diabetes Challenge along with his community partners. As part of the USask community, Dr. Vatanparast has lent his time and skills to the Office of Sustainability by leading a table on SDG 3: Good Health and Well-Being at June 2023's Together/Ensemble Symposium.

4 CAPITALIZE ON STRENGTHS

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Create Innovation Ecosystems

We work to develop hubs of innovation with the capacity to pilot and perfect technological innovations to solve all levels of sustainability challenges. Some of this work includes:

Farm2Kitchen Soup Mix

2 10 11 17

A collaboration of five partners (the USask College of Agriculture and Bioresources, the Global Institute for Food Security (GIFS), Saskatchewan Food Industry Development Centre Inc., the Regina Food Bank, and the Saskatoon Food Bank & Learning Centre) has produced an [affordable, easy-to-make and nourishing soup using crops grown in Saskatchewan](#). The dry mix, a result of a goal to produce therapeutic food products made primarily from pulses and cereals that could respond to moderate to acute malnutrition within high-risk communities, will be distributed by the two food bank partners to help fight food insecurity in Saskatoon and Regina.

Electric Vehicle Battery Research at CLS

7 9 13

The Spring 2024 federal budget gifted the Canadian Light Source (CLS) at USask \$83.5 million over three years to support research projects regarding electric vehicle (EV) battery supply chain. The research aims to capture the aging processes and improve the sustainability of EV batteries, work that will play an important role in the country's journey to reach net zero carbon emissions.



Federal Minister of Foreign Affairs Melanie Joly visits CLS in April, 2024 following a 3-year funding commitment.

Global Institute for Energy, Mines and Society

7 8 9 12 15 17

A memorandum of understanding signed by USask, Saskatchewan Polytechnic, and the University of Regina in December 2023 established a framework for collaboration on a new Saskatchewan-based institution called the [Global Institute for Energy, Mines and Society \(GIEMS\)](#). The Institute will provide a practical and effective way to collaborate on state-of-the-art and industry-needed research and innovation in the mining and energy sectors.

GIFS Carbon Life Cycle Analysis

2 9 13

The results of work that began at the Global Institute for Food Security (GIFS) in 2022 were published this year, examining the carbon footprint of agricultural production in Saskatchewan, Western Canada, and Canada while comparing them to some of our closest competitors across the world. The greenhouse gas emissions of five key Canadian crops—canola, durum and non-durum wheat, field peas, and lentils—to compare with the emissions of countries such as Australia, France, Germany, the United States, Russia, Ukraine, and Italy (depending on the crop). The results of the analysis show that widespread adoption of agricultural innovations by Canadian producers, particularly in Saskatchewan and Western Canada, have given the country a competitive advantage and the lowest carbon footprint of competitive jurisdictions.



4

CAPITALIZE ON STRENGTHS

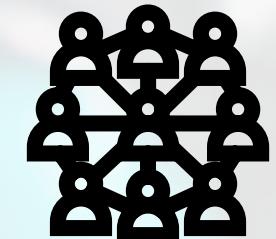
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Opus

USask's pre-accelerator startup incubator continued to expand in 2023/24, providing increased access to programming, mentors, advisors, infrastructure, and entrepreneurial training. With a focus on research-backed deep tech innovations with potential for proprietary IP, Opus is proving to be an integral part of USask's innovation landscape.

24**61**Startups
(12 new in 23/24)Mentees
(45 new in 23/24)**130+**Stakeholders Engaged
(40+ new in 23/24)**\$842,000+**

Funds Accessed



Opus has supported several successful founders over the past years, including the examples seen here.

8 9 11

Chiral Glitter

[ChiralGlitter](#) is a non-toxic, biodegradable glitter made with cellulose from eucalyptus trees for the beauty and food industries. With no microplastics in the product, ChiralGlitter offers a plant-based glitter that is more environmentally friendly and safer for humans. Co-founders Amin Babaeighazvini and Bishnu Acharya participated in the 2022 Opus pilot program and received extensive media coverage, as well as being featured on TrendHunter.com as one of the market trends to watch out for. They are currently in the Opus i2Market program and continue to build their venture as they work towards getting the product into the market, including opportunities in the EU where a glitter ban is in effect.

**8 9 12**

IntelliYeast

[IntelliYeast Laboratories](#) provides high quality, proprietary liquid yeast that optimizes performance and quality of products in the brewing industry. Having successfully completed the 2023 i2Build program, co-founders Christopher Eskiw and Nicole Shoaf are now members of the i2Market program at Opus. Opus has provided valuable founder training, supportive mentorship and helpful contacts giving them the insight they needed to move their technology into the market.

**8 9 12**

PathoScan

[PathoScan Technologies](#) offers portable pathogen test kits that enable farmers to quickly and easily test for a variety of crop diseases in the field. Co-founders Ethan Done and Tayab Soomro completed the i2Build 10-month cohort program at Opus in January 2024. As one of a handful of ventures selected to continue into the i2Market program, they continue to develop their business knowledge training while validating their product-market fit. Opus provided access to mentorship, professional services and connections that helped them receive funding to launch their startup.

2 8 9 15

WeCANHealth

WeCANHealth Innovations is developing small molecule therapeutics for multiple sclerosis (MS) that prevent nerve cell death and progression of the disease. WeCANHealth Founder and Saskatchewan MS Clinical Research Chair, Michael Levin, was part of Opus' first cohort that launched in 2022. Thanks to the critical lessons he learned in the program, he was able to reach a number of venture milestones such as incorporation and introductions to investors that help put him on the right pathway to mobilization.

3 8 9

4 CAPITALIZE ON STRENGTHS

USask is bringing together the campus community to create knowledges focused on designing and implementing innovative and workable solutions to sustainability challenges.

Forge and Lead Collaborations

USask's support of unique multi-community, multi-partner, and multi-sector collaborations is tackling the full spectrum of sustainability challenges, from idea germination to translation into real-life solutions. Work in 22/23 includes:

Crop Development Centre

The Crop Development Centre is a field crop research centre at the College of Agriculture and Bioresources that creates seed varieties focusing on food security, health, and sustainability for the planet. In early 2024, 29 crop science projects from researchers at the Centre [received more than \\$10 million in funding from the Governments of Canada and Saskatchewan and co-funding from industry partners](#). Funded projects include using drones and spectral imaging to predict the best crops for breeding, analyzing the affect of different crop rotations on GHGs released by soils, and creating efficient, climate-resilient, and high-yield chickpea and flax strains.

2 9
\$10 million
in funding across
29 projects

Panel Co-Chair on Arctic and Northern Research

Dr. Karla Jessen Williamson (PhD), associate professor in USask's College of Education, [co-chaired a panel on creating a more equitable and effective system for Arctic and Northern research in Canada](#). The expert panel, created by the Canadian Council of Academies, published its report findings in December 2023. Findings of the report include the critical need for researchers to address the needs and priorities identified by both Indigenous and non-Indigenous communities in the North, the importance of recognizing and respecting Indigenous rights and self-determination, and how to ethically engage with and learn from Indigenous knowledge systems.

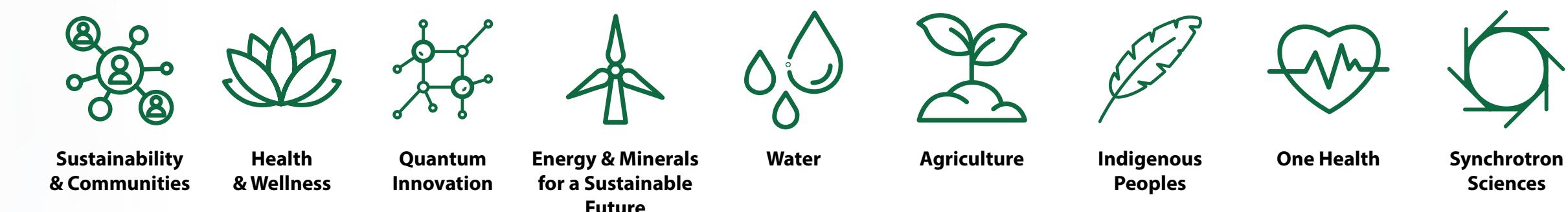
Dr. Karla Jessen Williamson (PhD)
Associate Professor, College of Education



10 16 17

Signature Research Area Update 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

USask's nine [Signature Research Areas](#) are areas of research and scholarship that bring the university distinct recognition and help to position it among the most distinguished universities in Canada and among the very best in the world. They are based on our output and achievement, enabled by our research capacity, investments, history, and sense of place. Each of the areas touches upon sustainability through multiple lenses and their contributions to the university's research profile have a consistent positive impact when it comes to reaching our sustainability goals.



Signature Research Area Highlight: Quantum Innovation

Dr. Steven Rayan (PhD), professor in the Department of Mathematics and Statistics at the College of Arts and Science, director of USask's Centre for Quantum Topology and its Applications (quanTA), and lead of USask's Quantum Innovation Signature Area of Research, announced in September 2023 that a close partnership with IBM Canada's Quantum Division and PINQ² (a digital transformation hub in Quebec) had been reached allowing USask researchers premier access to Quantum System One, IBM's latest-generation quantum computer. This will allow the university's researchers to develop quantum computing use cases around pressing real-world problems, including discovering the origins of certain chronic childhood diseases. Starting from March 2024, this dedicated access was funded by the federal government's PrairiesCan Regional Innovation Ecosystem initiative. An additional major partnership entered into by the area is an MoU with QPiAI, a quantum computing/AI firm based in Bangalore, India, with a special focus on topics such as quantum-enhanced agriculture.



Dr. Steven Rayan (PhD), Quantum Innovation Signature Research Area Lead

4

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Forge and Lead Collaborations

USask's support of unique multi-community, multi-partner, and multi-sector collaborations is tackling the full spectrum of sustainability challenges, from idea germination to translation into real-life solutions. Work in 22/23 includes:

TRANSECTS

4 17

The Transdisciplinary Education Collaboration for Transformations in Sustainability (TRANSECTS), an international Community of Practice and a transdisciplinary sustainability research training program, strengthened its partnerships and training portfolio in 2023-24. Three Program Institutes in South Africa, Germany, and Canada brought members together for collaborative learning, community-building, and reflection. The 2023 Transdisciplinary International Learning Lab (TILL) at the Schorfheide-Chorin Biosphere Reserve in Germany offered trainees the opportunity to enhance their professional, relational, and intercultural skills while applying transdisciplinary research in UNESCO Biosphere Regions/Reserves. TILL alumni launched the Student and Trainee Advisory Round Table (START) in August 2023, establishing a youth network of engaged trainees. TRANSECTS continues to share its work globally, including Dr. Eureta Rosenberg's (South Africa Co-Director) 2024 World Environmental Education Congress presentation. To learn more about TRANSECTS, visit the website or read the latest newsletter.

180 TILL Applicants

across 10 universities

56 TILL Alumni

from 18 countries

42 TRANSECTS Partners and 24 Partner Organizations

representing academia, Indigenous and rural communities, UNESCO BRs, governing agencies, international networks, organizations, and foundations



Canada



Germany



South Africa

Across **3 Hub Countries**, TRANSECTS is connecting trainees, practitioners, and scholars through pathways for training, professional development, networking, and mentorship.

Sylvia Fedoruk Canadian Centre for Nuclear Innovation 3 7 9 11

The Sylvia Fedoruk Canadian Centre for Nuclear Innovation was established in 2011 to help place Saskatchewan among global leaders of nuclear research, development and training. The Centre invests in partnerships with academia and industry for maximum societal and economic benefit while funding research projects in nuclear topics, supporting new faculty positions, operating a top cyclotron facility as a user-accessible resource, and providing advice on nuclear topics. In 2023-24, the Centre saw:



Research Junction

[Research Junction](#) is a collaboration between the City of Saskatoon and Research Acceleration and Strategic Initiatives to support the development of joint research projects that address contemporary urban issues for the benefit of Saskatoon residents. In 2023-24, three new projects were funded through the Research Junction Development Grant for a total of \$89,000, all co-led and co-designed by USask faculty and City staff.



Optimizing theatre resource sharing and creating a sustainable theatre production ecosystem



Designing preventative systems and policies to fight housing insecurity and homelessness



Tax policy and municipal revenue stream redesign and public communication strategies

1 4 8 9 11 17

\$500K

in total Research Junction grants with

12

City departments Colleges and Schools 7

5 CATALYZE SOCIAL CHANGE

USask continues to push for social change by promoting, engaging, and supporting shared knowledges, expertise, and experiences.

Engage in Local & Global Dialogue

USask continues to develop a shared understanding of both the challenges and solutions to global sustainability challenges by engaging in a diverse range of dialogues. Examples include:

USask in the World

The USask International Office hosts a "[USask in the World](#)" database which lays out all of the university's international relationships around the world. These relationships—divided into partnerships, stay opportunities, and networks—are presented on a world map to help easily visualize the university's extensive relationships across the world.

17
650
 international
 relationships across
59
 countries

International Networks and Partnerships

The University of Saskatchewan maintains memberships in a number of national and international networks and partnerships focused on advancing sustainability and sustainability education. These include:

- [Association for the Advancement of Sustainability in Higher Education](#) (AASHE)
- [Sustainable Development Solutions Network](#) (SDSN)
- [Sustainability Education Research Institute](#) (SERI)

SEPN Final Reports

The Sustainability and Education Policy Network's (SEPN) flagship project, SEPN-Canada, shared its final reports this year. This eight year endeavour hosted at USask hopes to help schools, universities, students, educators, and policymakers advance transformative approaches to sustainability in formal education in Canada and globally. The reports are made available for public review at [SEPN-Canada's webpage](#).

4 **17**

Climate Collaboratorium

Dr. Lori Bradford from the Ron and Jane Graham School of Professional Development in the College of Engineering and Dr. Graham Strickert from SENS are leading an [interdisciplinary project](#) aimed at expanding engagement in water-insecure communities. Titled "Climate Collaboratorium: Co-creation of Applied Theatre Decision Labs for Exploring Climate Change Adaptation and Mitigation", its unique applied theatre-based approach will develop strategies to develop solutions for water and climate-related challenges at the community level. By starting with mixed media workshops in water-insecure remote and Indigenous communities, the project will lead to a moving interactive production with the help of Carla Orosz, head of USask's Department of Drama, leading the design team.

6 **10** **13** **14** **15** **17**

Collaborative Conservation Research with Ukraine

Dr. Vladimir Kricsfalusi (PhD), associate professor in USask's School of Environment and Sustainability (SENS), is leading a [two-year project](#) between USask and the National Academy of Sciences of Ukraine's Institute of Ecology of the Carpathians (IEC) which aims to forecast the negative consequences of climate change within endangered ecosystems and to support future conservation efforts in both countries. Born of the close similarities between the Saskatchewan prairie and the Ukrainian steppe as well as the fen wetlands of both lands, this collaboration will be the first of its kind undertaken at an international scale between the North American and European continents.

13 **15** **17**

Cooperative Institute for Research to Operations in Hydrology

Dr. Martyn Clark (PhD) and Dr. John Pomeroy (PhD), both in the Department of Geography and Planning, comprise the Canadian contingent in an [unprecedented international collaboration](#) that aims to revolutionize flood predictions across North America. The collaboration, called the Cooperative Institute for Research to Operations in Hydrology (CIROH), brings together experts from academic institutions, non-profit organizations, government, and industry partners from the U.S. and Canada to develop next-generation water prediction capabilities. The new modelling aims to improve advance warning of floods, droughts and harmful water quality conditions while also helping administrative bodies to optimize water supply and irrigation, hydro power operations, reservoir management, and recreation.

14 **17**

5 CATALYZE SOCIAL CHANGE

USask continues to push for social change by promoting, engaging, and supporting shared knowledges, expertise, and experiences.

Actively Listen to All Voices

USask ensures that the voices in our learning and research environments are grounded in principles of equity, diversity, and inclusion. Projects of note in 23/24 are:

McEown Community Garden

The McEown Community Garden is an excellent example of the university's dedication to listening to and addressing the needs and concerns of the campus community. Initially started by a collective of students living in the McEown Park residences and formalized in 2015, the Garden is the largest and longest-standing community garden on campus, serving anywhere from 50-100 gardeners living in the residences at McEown Park, College Park, and Grad House. In the 2024 garden season, 61 gardeners participated in the initiative.

2 10 11 16



USSU Sustainability Committee

The University of Saskatchewan Students' Union (USSU) Sustainability Committee works each year to help the USSU progress as a leader in sustainable practices while actively contributing to the sustainable growth of our community. The Committee's 2023/24's highlight was helping the Planning Students' Association's annual MOMENTUM conference to achieve its sustainability goals through improved catering practices and increasing affordable access to students.

4 9

Office of Sustainability-led Events

The Office of Sustainability helped to organize events for the USask community in 23/24 to get people involved in and aware of sustainability around campus. Two South Saskatchewan River cleanups were organized with the help of the Meewasin Valley Authority and two silent discos were held in cooperation with the USSU to help collect food for donation to the USSU Food Centre.

17

Leverage Networks for Action

The many networks and partnerships between USask and the private sector, public sector, not-for-profits, and civil society here and abroad help to harness actions and opportunities for scalable social, political, and technological sustainability solutions. Examples include:

Universities Canada Advocacy

The University of Saskatchewan is a member of Universities Canada, a membership organization providing Canadian university presidents with a unified voice for higher education, research, and innovation. As part of this membership, we are working with Universities Canada on their [Canada's Universities Action for Net Zero Initiative](#) to measure and track the higher education sector's climate progress over time, serve as a hub for sharing best practices, advocate for the supports the sector needs to meet its targets and continue to address climate change more broadly, and collaborate locally, nationally, and internationally to align efforts and deepen our impact.

16 17

Regional Advocacy Memberships

The [Saskatchewan Waste Reduction Council](#) (SWRC) is dedicated to helping the people of Saskatchewan reduce waste. It is a non-governmental organization that leads in addressing the underlying causes of waste by identifying opportunities, creating connections, and promoting solutions for a waste-free Saskatchewan. The university acts as a sponsoring member of the Council and maintains two seats on its Board of Directors.

9 12 11 15 16 17

The [Saskatchewan Regional Centre of Expertise on Education for Sustainable Development](#) (SK RCE) is a voluntary network of organizations who are committed to creating a United Nations University designated Regional Centre of Expertise (RCE) on Education for Sustainable Development (ESD). Each of the 150+ RCEs around the world is a network of individuals, organizations and experts who are committed to using education as a tool for building a sustainable future. In 2023-24, USask was recognized with 2 awards at the SK RCE's annual recognition event in Yorkton, recognizing the inaugural cohort of the Sustainability Faculty Fellows and Brooke Klassen's integration of sustainability into the Edwards School of Business MBA program.

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2023-24 USASK GREENHOUSE GAS EMISSIONS INVENTORY

Each year the university publishes an inventory of its contributions to global GHG emissions.

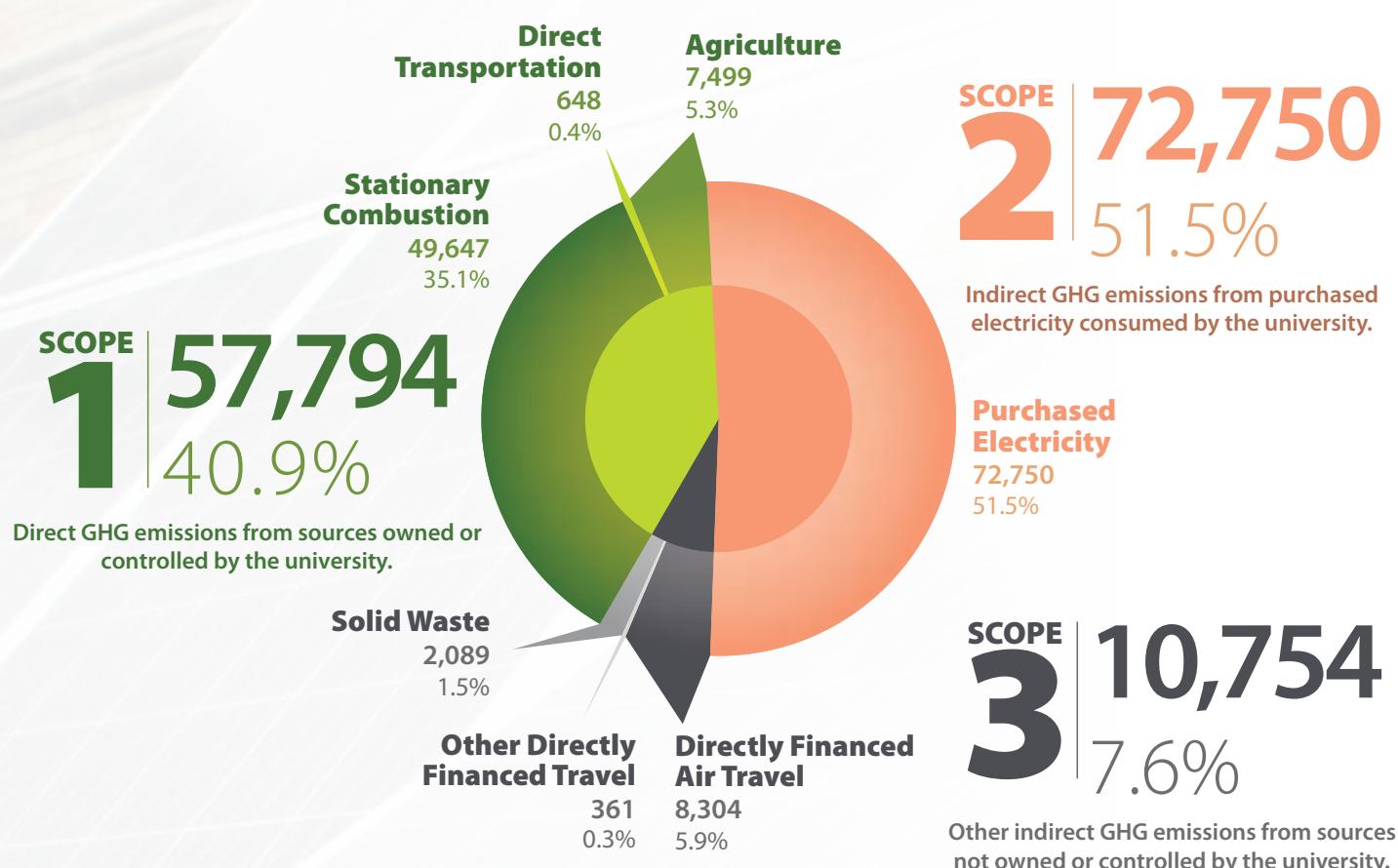
The university's overall 2023-24 GHG emissions decreased by 6% from last year, continuing the trend of reducing GHG emissions to achieve a 19% GHG reduction from 2010 baseline levels.

The reduced natural gas usage at USask's heating plant in 2023-24 was a result of many variables, including realization of benefits from the Optimizing Energy Efficiency project, decreased deferred maintenance and improved operations of buildings which received funds from the 2018 bond as well as a warmer winter, with fewer heating days. The net effect of all of these variables was a decrease in GHG emissions from on-campus stationary emissions sources. 2023-24 is now the first reporting year since 2015-16 where natural gas consumption was actually lower than our 2010 baseline which is a significant milestone. As well, our weather-normalized natural gas use intensity per square metre of the USask campus area has reduced by 18% since the baseline (while our building space has grown by 14% in the same time); this can be attributed to better building envelopes achieved through numerous capital projects that have been completed since 2010 and overall improved management of our heating systems across campus.

Our electrical consumption on campus increased slightly from last year, but overall Scope 2 emissions are down. This is a testament to SaskPower execution of its commitment to planned electrical grid decarbonization which continues to greatly benefit its customers, like USask. The university's photovoltaic solar arrays generated 40,746 kWh of electricity, avoiding 22 tonnes CO₂e if purchased from the provincial electrical grid.

While Scope 3 emissions are still lower than pre-COVID levels, air travel emissions increased 53% from last year's reporting. It will be important for staff, faculty, and administrators to consider their air travel going forward to ensure our Scope 3 emissions remain at reasonable levels. The Strategy has committed to exploring opportunities to offset travel emissions to help address these concerns and further exploration of this type of program will begin in 2024/25.

USask 2023-24 GHG Emissions By Scope (MT CO₂e)



Total 2023/2024 GHG Emissions:

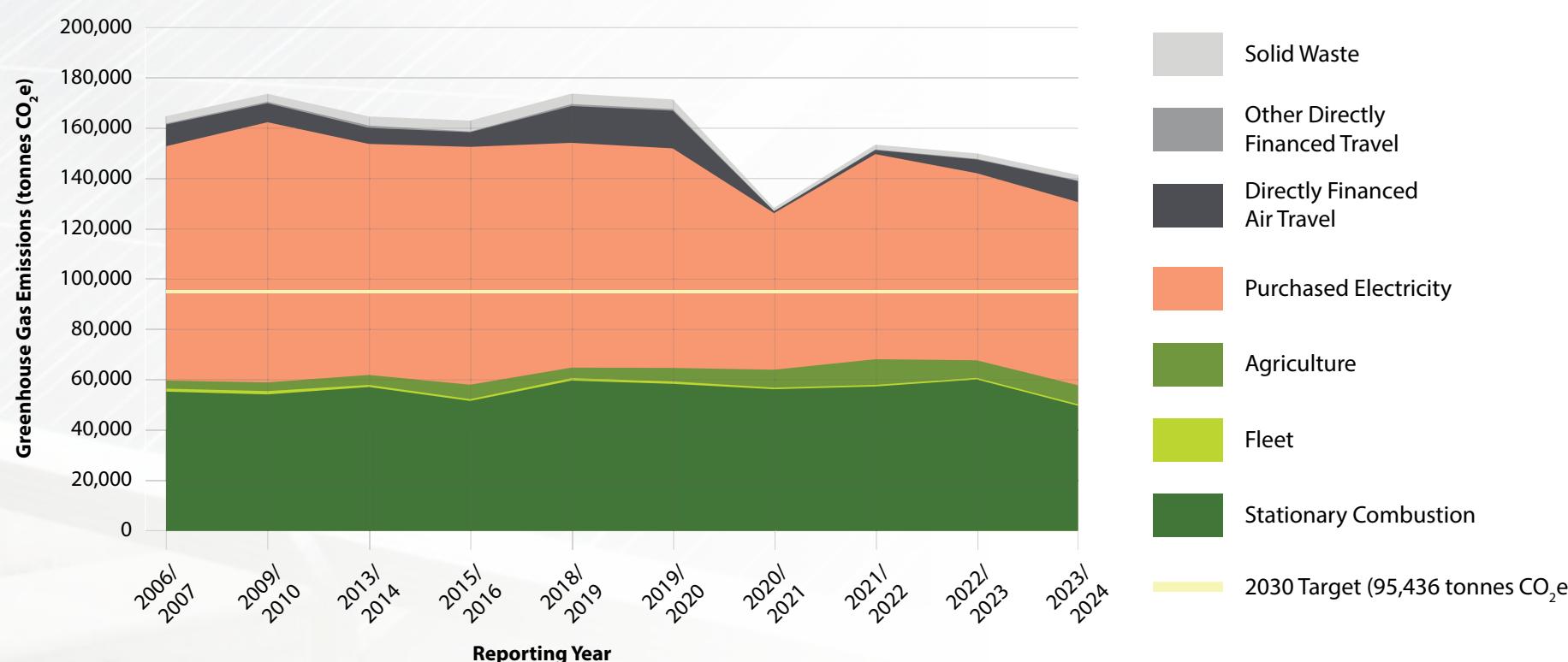
141,297
MT CO₂e

6% Reduction
from 2022/23

19% Reduction
from 2010 baseline

	GHG Emissions (MT CO ₂ e)	Percentage of Total 23/24 Emissions
Scope 1	57,794	40.9%
Stationary Combustion	49,647	35.1%
Agricultural Operations	7,499	5.3%
Fleet	648	0.4%
Scope 2	72,750	51.5%
Electricity	72,750	51.5%
Scope 3	10,754	7.6%
Directly Financed Air Travel	8,304	5.9%
Solid Waste	2,089	1.5%
Other Directly Financed Travel	361	0.3%

USask GHG Emissions Over Time



USask's GHG Reduction Goals

2030

**45% below
2010 levels**

2050

Net-Zero

