

Providence Health Care



Providence
Health Care
How you want to be treated.

2023 Public Sector Organization (PSO)

CLIMATE CHANGE ACCOUNTABILITY REPORT



Providence
Health Care
How you want to be treated.

Carbon Neutral

Executive Summary



Fiona Dalton, President & Chief Executive Officer

I am pleased to present the 14th annual Climate Change Accountability Report, which highlights the actions that Providence Health Care (PHC) has taken to reduce its carbon emissions, enhance low-carbon resilience and environmental sustainability, and the plans underway to reach our climate goals. Climate change is a serious threat to human health and the urgency to focus on sustainability and build climate resilience is clear.

Stewardship is one of our key organizational values and throughout our long history of providing compassionate and innovative care, teaching and research, we have been responsible and accountable stewards. For us, that includes taking personal responsibility for the carbon footprint produced by our operations and facilities.

In 2023, PHC reported a carbon emissions footprint of 9,100 tonnes of carbon dioxide equivalent (tCO₂e), which was offset at a total cost of \$277,500. This represents a 21 percent decrease in carbon emissions compared to the Climate Change Accountability Act (CCAR) baseline year of 2007.

Throughout 2023, under the leadership of Facilities Management, PHC implemented and activated numerous energy efficiency and greenhouse gas reduction initiatives across our key facilities. In recognition of the substantial carbon reductions achieved through these projects, PHC received over \$1.9M of incentive payments from our utility partners and Clean BC to support the capital investment. In addition, we received nearly \$1M of funding from the governments Carbon Neutral Capital Program (CNCP) to specifically support a major retrofit project at St. Paul's Hospital. This project alone, will enable us to transition away from an inefficient district energy steam system to our internal boiler system, potentially reducing emissions by a further 1,500 tCO₂e.

PHC has also advanced many climate risk and environmental sustainability actions in 2023. Highlights would include integrating climate resilience principles into ongoing major capital projects and conducting a portfolio-level climate hazard exposure assessments for nine PHC facilities to identify areas of vulnerability and prioritize resilience efforts. The newly formed Environmental Stewardship team has been very active exploring and implementing a broad variety of sustainability initiatives, such as plant power events at Holy Family Hospital and St. Paul's Hospital promoting plant rich diets.

Sustainability is a foundational principle of Our Mission: Forward Strategic Plan and PHC goal is to reduce the environmental impacts of our health system. With that said, I want to acknowledge Providence Health Care staff, medical staff, volunteers and partners for the work they have done to help reduce PHC's carbon emissions footprint. We will continue to collaborate and make meaningful steps towards to transform our health system, so it is not only resilient to current and future climate threats, but also environmentally and socially sustainable.



A handwritten signature in black ink that reads 'Fiona Dalton'.

Date: May 31, 2024

Fiona Dalton
President & Chief Executive Officer
Providence Health Care



Our Emissions Profile

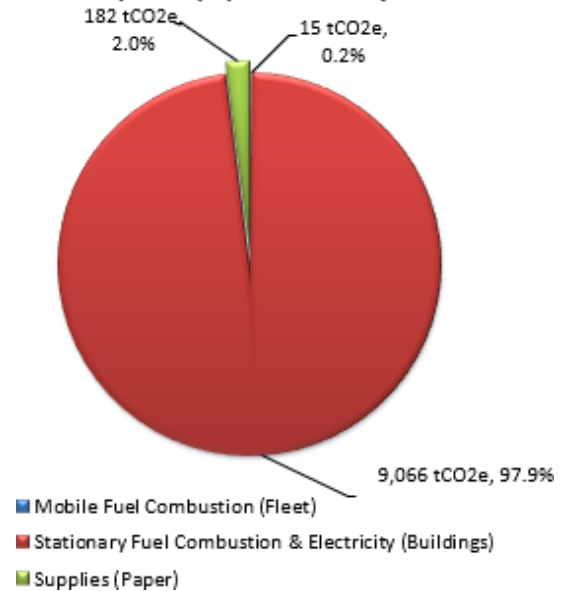
2023 Greenhouse Gas (GHG) Emissions Breakdown and Offsets Applied to become Carbon Neutral

PHC reports its organizational carbon footprint based on guidance provided by B.C.'s Climate Change Accountability Act (CCAA), Carbon Neutral Government Regulation (CNGR) and the Climate Action Secretariat (CAS).

The CAS developed reporting guidance based on the Greenhouse Gas Protocol Corporate Standard. According to these guidelines, PHC's carbon footprint is comprised of six different greenhouse gases, which are converted into a common metric of tonnes of carbon dioxide equivalent (tCO₂e). In scope carbon emissions are grouped in three main categories:

1. Stationary Fuel Combustion
2. Mobile Fuel Combustion
3. Supplies (Paper Consumption)

2023 Providence Health Care's Greenhouse Gas (In-Scope) Emissions by Source



In 2023, PHC's carbon emissions offset was 9,100 tonnes of carbon dioxide equivalent (tCO₂e). That represents a 21 per cent decrease in PHC's carbon emissions offset since 2007 (base year for the legislated Climate Change Accountability Act).

Almost 98 per cent of PHC's in-scope emissions are attributed to the building portfolio, and over 60 per cent of those emissions are associated with steam consumption.

To become carbon neutral in 2023, PHC will purchase carbon offsets at a total cost of \$227,500 from the Ministry of Environment and Climate Change Strategy. This amount is calculated based on PHC's 2023 carbon footprint offset of 9,100 tCO₂e, at \$25/ tonne CO₂e plus GST.

Providence Health Care 2023 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2023	
Total BioCO ₂	162
Total Emissions (tCO ₂ e)	9,262
Total Offsets (tCO ₂ e)	9,100
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	9,100
Offset Investment (\$)	227,500

Notes for above table (provided by the Climate Action Secretariat):

- i. *[Note, BioCO₂ is included in Total Emissions but not Total Offsets. For K-12 and post-secondary organizations, and BC Transit, Total Offsets will not equal Total Emissions minus Total BioCO₂ because offset-exempt emissions for buses are included within Total Emissions.]*
- ii. *Emissions and offset investment amounts will be validated by CAS prior to distributing invoices.*
- iii. *You must round "Grand Total Offsets to be Retired" to a whole number (no decimal places) before multiplying by \$25 (e.g., 43.2 = 43, 43.5 = 44).]*

Retirement of Offsets

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Providence Health Care is responsible for arranging for the retirement of the offsets obligation reported above for the 2023 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

Changes to Providence Health Care Portfolio

PHC's usable facility space has increased by 4.8 per cent since the 2007 base reporting year, which is largely due to such additions as Honoria Conway, and an increase in leased spaces. PHC has controlled increases in facility space to accommodate increased staff by seeking opportunities to optimize existing-space use while maintaining safety and efficiency.

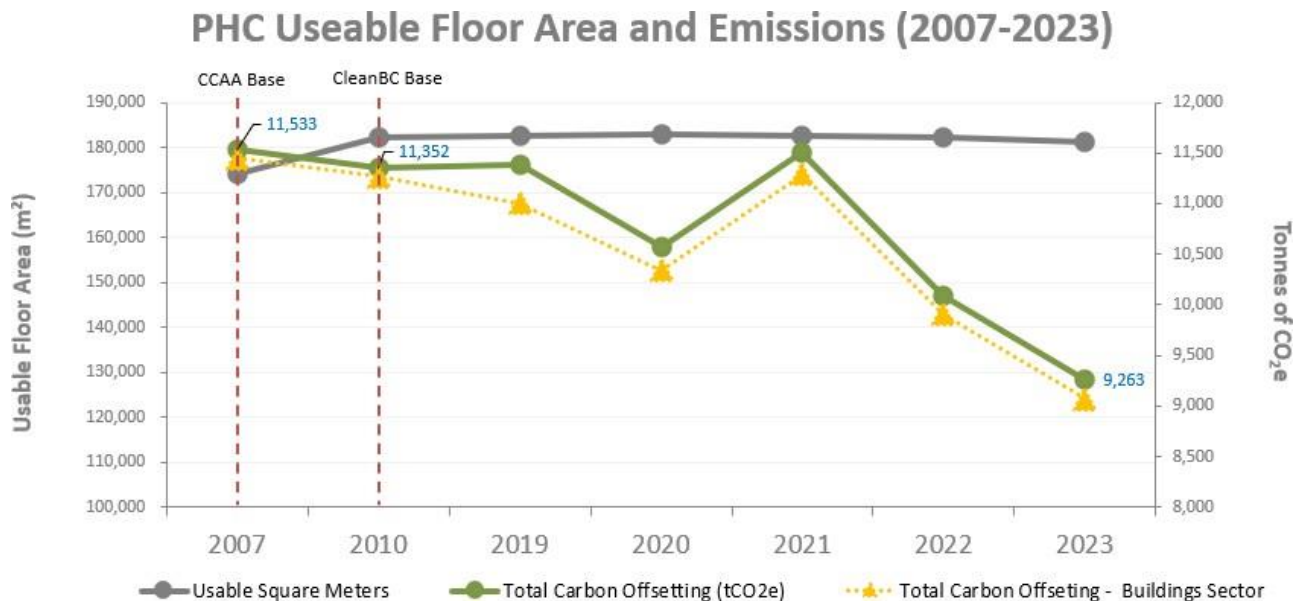
BUILDINGS, FTE AND WEATHER	2007	2010	2019	2020	2021	2022	2023
Distinct PHC buildings	n/a	35	45	44	45	45	41
% Owned	n/a	94%	89%	89%	89%	89%	90%
% Leased	n/a	6%	11%	11%	11%	11%	10%
Usable square meters ¹	174,002	182,161	182,713	182,914	182,550	182,301	181,106
Full-time employee equivalents ²	4,038	4,208	5,062	5,188	5,443	5,595	6,113
Weather (summarized in Heating Degree Days) ³	2,870	2,621	2,844	2,759	2,875	2,936	2,636

Notes for above table:

¹ Usable area excludes roof tops, interstitial spaces, and parking areas.

² Full-Time Employee data was provided by Health Employers Association of B.C. Full-Time Employee data include all designated groups reported in HSCIS and exclude affiliate employers and BCEHS employees. Full-Time Employee calculations are based on 1950 annual hours.

³ Heating Degree Days (HDD's) are based on YVR Airport data from Environment Canada and are intended to reflect the demand for heating. Although PHC's facilities are located across B.C., the majority of buildings are in the metro Vancouver area, so HDD's for Vancouver were used.



Since 2007, PHC's carbon emissions have decreased despite increases in both usable floor area and staff. As of 2023, emissions per full-time equivalent (1,489 kgCO₂e/FTE) have decreased by 48 per cent, and emissions per unit of floor area (50 kgCO₂e/m²) have decreased 24 per cent since 2007. The carbon emissions reported are not adjusted for

changes in weather. Heating Degree Days (HDDs) is a metric designed to reflect the demand for energy required to heat a building. Emissions per HDD is a metric intended to summarize overall efficiency of delivering heating. PHC's 2023 emissions per HDD (3,452 kgCO₂e/HDD) is 14 per cent less than the baseline year. It should be noted that as this report is prepared in response to CCAA, 2007 has been used as the base year in our progress calculations. However, for measuring our progress towards CleanBC targets applicable to public sector buildings emissions reduction, 2010 shall be used as the base year.

Our Carbon Footprint (tCO₂e)		2007	2010	2019	2020	2021	2022	2023
Mobile fuel combustion (fleet & other mobile equipment)		15	15	50	22	14	14	15
Stationary fuel combustion & Electricity (Buildings)		11,448	11,266	11,007	10,340	11,287	10,280	9,066
Supplies (Paper)		70	70	324	202	201	165	182
Total carbon emissions (tCO₂e)		11,533	11,352	11,380	10,570	11,502	10,512	9,263
Total BioCO ₂ emissions (no offsets required) ^{1,2}		-1	-1	N/A	-6	-4	-52.8	-162
Total carbon emissions for offsetting (tCO ₂ e)		11,532	11,351	11,380	10,564	11,497	10,459	9,100
Adjustments / Corrections ³		0	0	0	-606	0	0	0
Total Carbon Emissions - for offsetting after adjustments (tCO₂e)		11,532	11,351	11,380	9,958	11,497	10,459	9,100

\$	Purchased Carbon Offsets	\$288,300	\$283,775	\$284,500	\$248,950	\$287,425	\$261,475	\$227,500
	Purchased Carbon Offsets +GST	\$302,715	\$297,964	\$298,725	\$261,398	\$301,796	\$274,459	238,875

KPI's	Emissions per full-time employee (kgCO ₂ e/FTE)	2,856	2,697	2,248	1,919	2,112	1,869	1,489
	Emissions per facility space (kgCO ₂ e/m ²)	66	62	62	54	63	57	50
	Emissions per heating degree day (kgCO ₂ e/HDD)	4,018	4,331	4,001	3,609	3,999	3,562	3,452

Notes for above table:

¹ As outlined in the Carbon Neutral Government Regulation of the Climate Change Accountability Act, some emissions do not require offsets.

² It was estimated that Fugitive Emissions from cooling equipment comprise less than 0.01 per cent of PHC's total emissions and for this reason, emissions from this source have been deemed out-of-scope and have not been included in our total greenhouse gas emissions profile.

³An adjustment of -606 tCO₂e was applied in 2020 based of an adjustment from 2019.

Part 1: Legislative Reporting Requirements

Declaration Statement

This Climate Change Accountability Report for the period January 1, 2023 to December 31, 2023 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2024 and beyond.

By June 30, 2024, Providence Health Care's final 2023 Climate Change Accountability Report will be posted to our website at bcgreencare.ca. Final Climate Change Accountability Reports will also be posted on the BC Government CNG [website](#) by June 30, 2023 to meet legislative requirements.

Actions taken to Minimize Emissions

Stationary Sources (Buildings):

- **Continuous Optimization:** PHC completed the investigation and implementation phase of BC Hydro's Continuous Optimization (C.Op.) Program at Mount Saint Joseph Hospital. Moving forward, PHC plans to complete the recommendations of the C.Op. at MSJ, this includes the ventilation control of kitchen and control valves installation for radiators.
- **Waste Heat Recovery and Energy Upgrades:** PHC fully completed and commissioned major heat recovery projects at several sites, including St. Paul's Hospital, Mount Saint Joseph Hospital, Langara, Holy Family Hospital, Youville and Brock Fahrni. The heat recovery project at Brock Fahrni is one of the most successful projects and this site now is a near zero emission building. This site also subscribed for Renewable Natural Gas. Our plan for future is to complete a Measurement and Verification process for these facilities to enable continuous monitoring of the performance of the installed technologies.
- **Emission Reduction Projects at St. Paul Hospital:** The PHC Energy and Carbon Management team completed two significant projects at St. Paul's Hospital in 2023, with incentive support from Fortis BC and Clean BC and utilization of the Carbon Neutral Capital Program (CNCP). Both projects included the installation of new efficient hot water boiler plant to replace old district steam system. The emission reduction is estimated at 1,500 tCO₂e per year, which is approximately 24% of the overall emission of St Paul's.
- **Solar PV panels at Mount Saint Joseph Hospital:** A solar PV system was installed on the Mount Saint Joseph Hospital roof in 2022, which can generate up to 50 kW electricity for continuous use for the building electrical systems. In 2023 an extension was added to the solar panels resulting in total capacity of 65 kW of renewable energy.
- **Leadership and Innovation:** The Energy and Environmental Sustainability team continues to promote energy conservation, GHG emissions reduction and other aspects of environmental sustainability through the GreenCare¹ network and the Green+Leaders community. GreenCare is a network that unites efforts across B.C. health-care organizations to advance our health care system toward environmentally sustainable and resilient care for the health of people, place and planet. Green+Leaders² is a community of health care staff engaged in advancing sustainability practices within the health system. Green+Leaders are change agents who encourage environmentally sustainable behavior, improve existing processes, and help create an overall culture of environmental health and wellness. Every year, they make a significant contribution to the improvement of Providence's environmental performance.
- **Future plans:** The PHC Energy and Carbon Management team have several projects and initiatives in the planning phase, such as the electrification upgrade at Mount Saint Joseph Hospital, which will convert the facility into a near to zero emission building. In addition, comprehensive feasibility studies are underway to explore new opportunities in energy efficiency in all PHC core sites.

¹ <https://bcgreencare.ca/take-action/>

² Green+Leaders are health-care staff engaged in advancing sustainability practices within the health system.



Mobile Sources (Fleet and other vehicles):

- PHC Facilities Management staff, in partnership with colleagues in the lower mainland health organizations, have been actively engaged in a regional steering setting committee to develop an Electric Vehicle Framework. This framework will support a collaborative approach for implementation of charging stations and will be released in 2024.
- Providence continues to partner with Provincial Health Services Authority and Vancouver Coastal Health to provide a shuttle service between sites. Shuttle Ridership was 21,503 in 2023, an 19% increase from 2022.
- Public transportation increased by 6%, according to staff self-reports in the annual GreenCare survey. Increased transit use was supported by the transit discount program that increased the staff subsidy on transit to 50% in 2023.
- PHC was awarded the Transit Friendly Employer certification in November 2023. The Transit-Friendly Employer is a certification program offered by TransLink and recognizes leading organizations for making employee travel easy, affordable, and climate friendly.

Supplies (Paper Consumption):

- Currently the majority of all paper purchases are virgin paper made from trees. The health organizations are starting a provincial effort to switch from virgin copy paper to a more sustainable paper type, Sugar Sheet. Sugar Sheet paper is a certified carbon neutral paper made from agricultural waste. It is estimated that by switching paper purchases to Sugar Sheet, the health organizations can reduce carbon emissions from paper by 80%.



Part 2: Public Sector Climate Leadership

Actions Taken to Enhance Climate Resilience and Sustainability

Climate Risk Management

Climate risk and resilience actions taken by Providence in 2023 include:

- Updated the Climate Resilience Guidelines for BC Health Facility Planning & Design to Version 2.0, ensuring alignment with new provincial releases and incorporating valuable lessons learned.
- Integrated climate resilience principles into ongoing major capital projects, offering guidance and assistance to project teams and consultants, including those for the New St. Paul's Hospital and St. Vincent's Heather Long-Term Care.
- Conducted a portfolio-level climate hazard exposure assessment for nine PHC facilities to identify areas of vulnerability and prioritize resilience efforts.
- Developed a resilient design report card to track and communicate climate resilience measures and achievements for new construction projects, which is being piloted through the St. Vincent's Heather project.
- Installed a solar photovoltaic system on the roof of Mount Saint Joseph Hospital, improving resilience of the energy system while reducing greenhouse gas emissions.
- Through partnership with facilities staff, public health teams, and Health Emergency Management BC (HEMBC), coordinated seasonal readiness planning activities for communications and actions before, during, and after extreme weather events.
- Through HEMBC, developed the (Inter- and Intra-Health Authority Relocation (IIHAR) toolkit to enhance the resilience and responsiveness of health services in British Columbia during climate-related emergencies. This toolkit proved effective during the 2023 wildfire season by facilitating complex evacuations and ensuring continuity of care.
- Through collaboration with health agencies across the province, participated in the BC Health Effects of Anomalous Temperatures Coordinating Committee (BC HEAT Committee) to support planning and response efforts related to the public health impacts of significant heat events in British Columbia.
- Collaborated with the Canadian Standards Association (CSA) to integrate climate risk considerations into the CSA Z8000 Canadian Healthcare Standard.



Other Sustainability Initiatives

Environmental sustainability actions taken by Providence in 2023 included:

- Providence continues to support workplace leadership opportunities that motivate and empower staff to take action. In 2023, 6 new staff registered for the Green+Leaders program, bringing the total number of Green+Leaders at Providence to 62 since 2011. Five orientation sessions offered in 2023 for new Green+Leaders to start their journey in environmental sustainability & healthcare.
- The Green+ Leaders Recognition Event brought together over 100 sustainability advocates from BC health authorities, including 10 Green+Leaders from Providence. The event featured workshops on change management and the circular economy, along with networking opportunities and sharing success stories, leaving participants inspired to advance their journey towards sustainable health care.
- One Green+Leader was granted the educational opportunity to participate in the Zero Waste Conference.
- Providence staff are also active members of the GreenCare network, receiving news, health organization updates, and participating in learning events.
- In 2023, 53 PHC staff and medical staff are registered members of the GreenCare network and receive planetary health news, organizational updates, opportunities to get involved, and access to resources. 2023 highlights include a full year of communications through 7 GreenCare newsletters as well as the creation of a new GreenCare Lunch & Learn working group, co-founded with health care staff across the province, to guide awareness and education events for inter-institutional learning across BC health organizations.
- Four Lunch & Learns offered on topics such as 'Creating Your Sustainable Workplace Plan' and 'Infection Prevention and Sustainability: A Myth busting conversation,' celebrating sustainability projects across BC health organizations and spreading tried and tested practices that have incorporated a sustainability approach to health care provision.



- In alignment and active collaboration with the PHC communications team, GreenCare and Green+Leaders resources and stories are also shared via Providence's internal communication channels. These efforts continue to advance sustainability practices and celebrate PHC staff successes. In 2023, PHC Communications shared 35 stories about individual and team action for workplace sustainability, impactful projects and regional collaborations.
- The GreenCare website is a hub of resources, stories of success, events and inspiration centered on engaging PHC and other B.C. health care staff with environmental sustainability and resilience in the workplace. The *Our Resources* section of the website presents a variety of reports, case studies and toolkits. We have observed increased engagement and actions taken by users once on the site and receive daily inquiries about environmental sustainability topics related to health care provision. The website provides PHC staff with tools and resources to make environmental improvements at their worksite and contribute to health and wellness in several areas. In 2023, we averaged 1,525 users a month.

- With support from Tony Munster, Executive Director, PHC continues to have an active Environmental Stewardship team, led by Green+Leaders and staff at various sites. There are four working groups on this team: Measurement & Evaluation, Communication & Education, Waste Reduction, Food, who explore and implement a broad variety of sustainability initiatives. New in 2023 were 2 Plant Power events at Holy Family Hospital and St. Paul's Hospital promoting plant rich diets and busting food myths.
- Funding secured for a Planetary Health Lead role, to start in 2024.
- Health care will always produce some waste. The vision is zero avoidable and unnecessary waste in all areas of health care. In order to move toward the vision of zero avoidable and unnecessary waste, we look to the guiding principle of a circular economy, in which we do not rely on extraction of raw resources, but first use what already exists. Examples of how we are working towards this in PHC include:
 - o Secured a new resource in a dedicated waste coordinator role. This individual is responsible for development and evaluation of waste management programs within PHC, with respect to improving environmental awareness and stewardship, with the goal of reducing the environmental impact of PHC activities. Through the development and implementation of new and innovative systems and processes, PHC is committed to moving the needle on minimizing our environmental footprint.
 - o PHC has formed a partnership with the Binners' Project at St. Paul's Hospital, part of continuing efforts to build community capacity and drive positive sustainability initiatives. The Binners' Project aims to foster social and economic inclusion and build strong community resilience and networks. The group is a dynamic coalition of waste-pickers, supported by a dedicated team, committed to enhancing their economic prospects and alleviating the stigma associated with their role as informal recyclable collectors.
 - o Launch of the Glove Smart Pilot. This project is a collaboration between the Waste Working Group and the Cardiac Surgery Intensive Care Unit (CSICU), it uses a quality improvement approach to decrease inappropriate use of non-sterile gloves, which had increased consumption post Covid-19. From the end of June 2023, an educational campaign was rolled out among CSICU clinical staff members, which has resulted so far in 41% reduction of non-surgical glove use and a shift in compliance to appropriate use. This project is being scaled up to other areas in PHC.
 - o PHC facilities comply with a standardized recycling program³, which includes mixed containers, mixed paper, organic waste and batteries. Depending on collection logistics, some sites may also participate in recycling programs for expanded polystyrene, pallet wrap, printer cartridges, and mattresses, scrap metal, lighting and other materials. Acute care facilities have a target of reaching 40% waste diversion by 2030 and non-acute care facilities have a target of 60%.
- In 2023, the Energy and Environmental Sustainability team continued working toward updating the design guidelines for health care new construction and major retrofits. The new guidelines are called Low Carbon Resilience and Environmental Sustainability (LCRES) Guidelines for Health-care New Construction and aims to:
 - o Provide a set of recommendations to inform the detailed design phase of new and replacement construction for acute and long-term care facilities.
 - o Inform all members of a project team in the development of project components specific to the Statement of Requirements and the Low Carbon Resilience and Environmental Sustainability Scope of Work
 - o Enable the highest standard of human and environmental health within healthcare facilities.
- The PHC Energy Management team launched an innovative Waste-to-Energy project in partnership with the UBC Bioenergy department in 2022. This work continued in 2023 with the objective to collect food waste from PHC facilities and to convert into fuel (biogas) and fertilizer – thus preventing waste addition to landfills and making use of the byproduct of this conversion.

³ In 2022, recycling bins were returned to patient care areas post a pause during the pandemic. While recycling is back to full capacity in long term care sites in 2023, some acute care sites are still not back to pre-2020 service levels.

Success Story

St. Paul's Hospital Achieves Energy Efficiency Milestone with Steam Conversion Project

Vancouver's St. Paul's Hospital has undertaken a critical energy-saving initiative, known as the SPH Steam Conversion Phase 2 project. Spearheaded by the Providence Health Care (PHC) Energy team, this project aims to dramatically decrease the hospital's energy consumption by transitioning from district steam to natural gas.

This shift towards a more efficient and sustainable energy source that not only greatly lowers emissions but also yields significant financial savings. It reduces greenhouse gas (GHG) emissions by 611 tonnes of CO₂ equivalent and steam consumption by 28,000 gigajoules per year, which lowers operating costs by \$400,000 annually.

According to Mahnaz Mahzari, Energy Specialist at PHC, "St. Paul's has the highest energy consumption and GHG emissions among all PHC facilities and operates 24/7." In a district steam system, a central facility generates steam, usually through the combustion of fossil fuels or other energy sources, and then distributes it to various facilities for domestic hot water, sterilization processes and other industrial applications.

With a new St. Paul's Hospital under construction, any energy upgrades in the current site must yield benefits before the hospital relocates in the next five years. Finding energy savings in a facility with a limited remaining lifespan was an ambitious endeavour—but one that reflects Providence's dedication to sustainability across its building portfolio. Additionally, the project team secured funding from FortisBC, their utility partner, and the BC Ministry of Health through the Carbon Neutral Capital Program, which helped to make the project feasible in an older building.

The installation of three gas boilers and the piping connections were completed in November 2023, but the work began with an energy study at St. Paul's in 2022. The PHC Energy team collaborated with consultants BES to conduct the study.



New gas boilers at St. Paul's Hospital

At the implementation stage, the project planning team, contractors and PHC Energy team met weekly to ensure success. Despite a tight timeline and the logistical hurdles of moving oversized boilers into the mechanical room and connecting hundreds of metres of piping and ducting in an old, crowded boiler room, the team was able to reach key milestones on schedule.

This project embodies technical challenges, financial benefits and sustainability objectives. It was rewarding for everyone involved to contribute to our community's well-being," says Project Manager Sony Bae.

While some organizations may have elected to leave the steam system as is, the switch to gas boilers is perfectly aligned with PHC's strategic vision. The success of this critical project underscores the health organization's capacity to deliver on their commitment to planetary health, even in its oldest and most complicated facilities.