



2024/2025 – STRATEGIC ENERGY MANAGEMENT PLAN REPORT

Abbotsford, Canada Education Park (Chilliwack) and
Aerospace Campuses

University of the Fraser Valley
33844 King Road,
Abbotsford, BC, V2S 7M8

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Prepared by:

Doran Hoge – Director Energy and Sustainability

Parisa Mohammadi – Energy Manager

Alicia Nightingale – Energy and Climate Coordinator

Senior Management Support:

Jackie Hogan

VP Administration

Jackie Hogan

Digitally signed by Jackie Hogan
Date: 2025.06.16 15:41:39
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Ingi El-Hadi

AVP, Campus Planning & Facilities Management

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Executive Summary

UFV's energy management program tracks energy consumption and promotes energy conservation measures at 21 core buildings across UFV's Abbotsford and Chilliwack (Canadian Education Park) campuses, and Aerospace building located at the Abbotsford Airport. UFV creates annual Strategic Energy Management Plan (SEMP) reports to highlight the results of UFV's effective energy management efforts, demonstrate UFV's commitment to energy conservation and environmental sustainability, outline planned future actions aimed at increasing energy efficiency, and draw attention to trends in energy consumption.

This 2024 SEM (Final) covers the full 2024 calendar year and builds on the 2024 SEM (Part 1) that was completed to be the bridge between the 2023 SEM and the final 2024 SEM while waiting for final energy consumption data to come in and for 2024 projects to wrap up. Moving forward it is expected that the SEM will always be reported in May, highlighting the previous calendar year, helping to align with other reporting expectations that UFV has.

In 2024 UFV prioritized planning and studies with a focus on energy and climate resilience. Additionally, projects were implemented that are expected to have a direct result in decreasing UFV's GHG emissions and energy consumption. It is estimated that 290.8 CO₂e, 5849 GJ of methane gas and 187,190 kwh of electricity will be reduced annually from these projects. \$1,339,113 was spent on electricity and methane for the 88,642 square meters of campus space.

Improvements include lighting upgrades that have increased efficiency and provided high quality lighting; mechanical upgrades that have increased reliability, efficiency, and effectiveness in maintaining occupant comfort; and behavioural change campaigns that have cultivated a culture of energy awareness, sense of community and understanding of sustainability.

Areas around the province and in the Fraser Valley continued to see concerning climate related events and impacts including atmospheric rivers, flooding, debris flows, cold snaps, extreme heat, and wildfires. Fortunately, in the Fraser Valley, climate events in 2024 were not as devastating as those in recent years. However, they still highlight the need for UFV to increase its energy and weather resilience to protect the health and wellbeing of students, staff and faculty on campus and avoid service outages.

Land Acknowledgement

Long before Canada was formed, the Stó:lō (people of the river) occupied the land on which UFV's campuses are located. Stó:lō Tém:éxw (Stó:lō Land), has been cared for deeply and responsibly by Stó:lō people for thousands of years, and their stewardship continues today. Over the last few hundred years, colonization and Western ideologies have had significant impacts on Stó:lō Peoples' land, culture, and way of life.

As we work towards making UFV a more sustainable institution, we recognize the importance of learning from and reflecting on Indigenous ways of knowing. UFV supports Indigenous learners and seeks to incorporate indigenous ways of knowing into all its activities.



Figure 1 - Wild Salmon in the Fraser River

Introduction

This Strategic Energy Management Plan (SEMP) report supports the commitment of the University of the Fraser Valley (UFV) to energy efficiency and conservation by providing a framework for reducing energy consumption and its associated environmental impact. This SEMP report reviews how UFV's energy management goals fit within UFV's larger commitments and how initiatives undertaken within the 2024 calendar year are helping to achieve UFV's energy and GHG emissions reduction goals.

Energy management enables UFV to identify, plan and take actions to achieve its operational, financial and sustainability goals. By implementing the actions detailed in this SEMP, UFV is demonstrating leadership, innovation, responsibility, and accountability for the resources it uses. Furthermore, through a dedicated Director, Manager and Coordinator of Energy and Environmental Sustainability, UFV is demonstrating its commitment to:

- Reduce operating costs through energy conservation and efficiency
- Reduce greenhouse gas emissions, which of global importance to avoid catastrophic climate change
- Reduce exposure to volatile energy costs and cost escalations
- Demonstrate effective and responsible management of resources
- Minimize its environmental impact
- Reduce reliance on the province's energy infrastructure
- Promote our successes and share best lessons learned with the public and other universities for mutual benefit
- Educate those who will shape the future of our community, province, and country on the importance of managing the resources responsibly



Figure 2 – Gas Absorption Heat Pumps installed at the UFV Trades and Technology Centre

Commitments

Organization Goals

UFV's mission is to "engage learners, transform lives and build community" and has a vision for UFV to "be known as a gathering place for learners, leaders, and seekers." Strategic energy management contributes to providing spaces in which these university-wide goals can take place.

Strategic energy management at UFV involves intentional planning and project implementation that reduces operating costs through lower energy consumption. Energy management fosters a more sustainable campus environment by decreasing carbon emissions and promoting renewable energy sources. Energy-efficient practices and technologies can serve as learning opportunities for students, preparing future leaders with skills to integrate environmentally sustainable approaches into their careers.

Sustainability Commitments

In recent years UFV has made commitments to include sustainability as an institutional priority:

- UFV has included Sustainability in its Strategic Plan, to "Develop meaningful community partnerships and action-oriented projects that support social innovation, economic development, and environmental sustainability."
- A sustainability policy was enacted in October of 2023 to bring focus to sustainability in operations, academics, evaluation, and community outreach.
- UFV is a signatory on the UN Sustainable Development Goals Accord and is a member university of the UN Academic Impact Initiative. Both indicate that UFV works to align itself with United Nations goals, which include adopting affordable and clean energy practices, promoting good health and well-being, and minimizing impact to life on land and water.
- UFV participates in Sustainability Tracking, Assessment, & Rating System (STARS), a program of the Association for the Advancement of Sustainability in Higher Education (AASHE), which assigns UFV a sustainability rating based on various aspects of the institution. In 2023 UFV received a Silver Rating and hopes to raise this rating to a Gold or Platinum Rating.
- In 2019 UFV showed its renewed commitment to increasing energy efficiency and reducing GHG emission by signing a Letter of Commitment to Energy Management (Appendix A). The letter highlights the overall importance of improving energy efficiency to UFV to reduce, environmental impacts and energy costs, respond to climate change, and responsibly manage resources.

Carbon Emissions

As a public sector institution, UFV is required to report on greenhouse gas emissions under the Climate Change Accountability Act. The scope of emissions reported annually includes building energy (owned and leased by UFV), fleet, and paper related emissions. Additionally, as of the 2024 reporting year, refrigerant use is also included. Carbon offsets are purchased by UFV to achieve carbon neutrality. A Climate Change Accountability Report (CCAR) is prepared by UFV each year outlining the efforts planned and being undertaken to reduce carbon emissions. Since 2009 when UFV's first CCAR report was published, emissions have been reduced by 32%.

The provincially set targets UFV is aligning with are 40% emissions reductions below 2007 levels by 2030, 60% by 2040, and 80% by 2050. The province also has an interim target to reduce emissions by 16% by 2025. There are additional targets for public sector institutions through the CleanBC program to achieve a 50% reduction from buildings and 40% reduction from Fleet by 2030. The Energy and Climate Resiliency Plan UFV has been engaged with clear outlines for how the building targets can be met, and the fleet plan outlines how the fleet related targets can be met.

Shown in Figure 3, the largest source of emissions at UFV is associated with building energy. Therefore, many of the energy projects outlined in this SEMP are crucial to meeting the greenhouse gas reduction goals. The total emissions for 2024 were 2,714 tonnes CO₂equivalent (CO₂e).

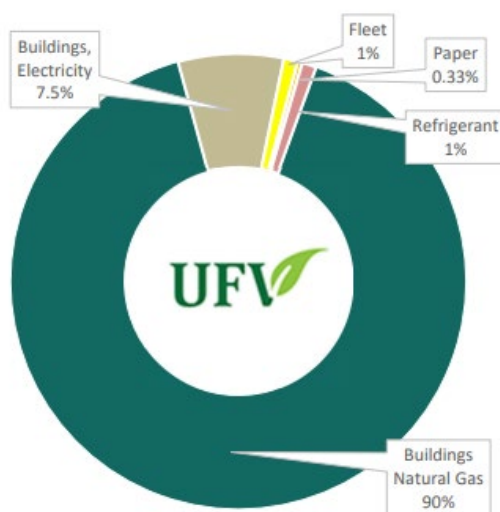


Figure 3: Greenhouse Gas Emissions Distribution at UFV in 2024

Future Commitments

UFV is currently working to develop new mid and short-term targets through the development of an Energy and Climate Resilience Plan that focuses on energy and greenhouse gas emission reductions that align with Clean BC and UFV's strategic and sustainability commitments. Once complete, UFV will work to advance projects that work to attain these goals. Work on the Energy and Climate Resilience Pathway commenced in 2023 with planning wrapping up in early 2025. The Energy and Climate Resilience Pathway includes an audit of the core buildings in UFV's portfolio to create a long-term strategy for project prioritization and planning. Subsequent SEMP's will reflect on the progress along the preferred pathway identified in the Energy and Climate Resilience Pathway.

Stakeholder Engagement

UFV is a higher education institution. 16,000 students and 1800 university staff and faculty make up the main stakeholders for projects completed at UFV. In addition, there are often members of the public, visitors from other universities, and external contractors working at the University that need to be considered.

Generally, each project carried out requires a unique approach to stakeholder engagement. In matters related to energy management and climate resilience, UFV staff are committed to engaging members of the broader university community. This engagement includes collaboration with Campus Operations, Capital Projects, the Research Office, the academic community (faculty and students), Information Technology (IT), Ancillary Services, Student Housing, and the wider campus community. With the recent completion of UFV's Energy and Climate Resilience Plan, there is now an opportunity to foster deeper and more sustained engagement across the university. To support this goal, UFV's Energy and Climate staff intend to re-activate an Energy and Climate Change Committee. This committee will serve as an ongoing forum to encourage dialogue, promote shared ownership of UFV's energy and climate goals, and help advance

the implementation of the plan. It will provide a structure for bringing diverse voices to the table and supporting UFV's continued progress as a resilient and sustainable institution.

Additional planning for stakeholder engagement has been developed as part of the development of UFV's Energy and Climate Resilience Pathway. The communications portion of the plan identified key interest holders, their impact area, a division of responsibilities, and the decision-making metrics and information that should be developed for each project that will best inform the stakeholders.



UFV Profile

UFV is a leading post-secondary institution in BC, which has contributed education and economic development of the Fraser Valley over the last 50 years. The University was founded as Fraser Valley College (FVC) in 1974, became the University College of the Fraser Valley (UCFV) in 1991, and gained university status in 2008. Currently, UFV has campuses in Abbotsford, Chilliwack, and Mission, a regional centre in Hope and a presence in Chandigarh, India.

Buildings

Most staff and students working in UFV's buildings are located at the Abbotsford and the Chilliwack campuses (Canada Education Park). These campuses plus the Aerospace Centre make up the scope of this report: 21 core buildings making up 88,642m² of space as summarized in Table 3. In 2024 two major construction projects broke ground, a new 6-story student residence building, and a large expansion to the current dining hall. These projects are currently using energy during their construction and will add to UFV's overall energy load. The new buildings are being built using energy efficiency standards.

Table 1: Building Descriptions

Campus	Building	Originally Built	Area (m ²)	Description/Use
Aerospace	H4	1974	2,620	Aerospace Training Centre
Abbotsford	FH	1975	251	Friesen House (Presidents Residence)
	ABB - A	1983	9,000	Classrooms, laboratories, administration
	ABB - B	1983	8,543	Classrooms, administration, cafeteria, logistics
	ABB - C	1983	4,892	Classrooms, administration
	ABB - D	1997	5,740	Classrooms, print services, logistics department
	ABB - E	2002	3,797	Gymnasium
	ABB - F	1994	516	Administration
	ABB - G	1995	5,687	Library, administration
	ABB - H	2006	8,104	Baker house (student residences), campus bookstore
	ABB - K	2008	2,209	Classrooms
	ABB - T	2006	353	Student Union Building, administration, banquet hall
	ABB - S	2014	4,358	Athletics Administration
Canada Education Park-Chilliwack (CEP)	CEP - A	1971	14,000	Classrooms, administration, logistics
	CEP - H (ACE)	2012	1,944	Agriculture Centre of Excellence, greenhouses, livestock pens
	CEP - TTC	2007	9,904	Trades and Technology Centre, shops, classrooms, administration, cafeteria
	CEP - V	1971	892	Classrooms, administration
	CEP - W	1971	1,438	Print Services, Warehousing
	CEP - Q		338	Agriculture Lab
	CEP - R		1,658	Athletics, health sciences
	CEP - S		2,397	Heavy Duty Mechanical

UFV's building portfolio has changed over the years as the university has grown. Changes during the last decade include the sale of the Chilliwack North Campus in 2019, leasing out CEP Building N, and the purchase and renovation of a former pub and conference facility (now Building K in Abbotsford).

As UFV's portfolio of buildings increases, energy consumption is expected to increase proportionally. Also, the degree to which energy use fluctuates is influenced by factors including weather, operating schedules, system efficiencies, and how occupants interact with the building/space. For example, inefficient buildings such as Chilliwack North had higher energy intensities than those of classrooms and offices found within the newer Building K. Throughout this report, different approaches to analyzing energy efficiency will be presented, highlighting key variables, and providing context for the challenges in monitoring overall energy consumption patterns in a changing portfolio.

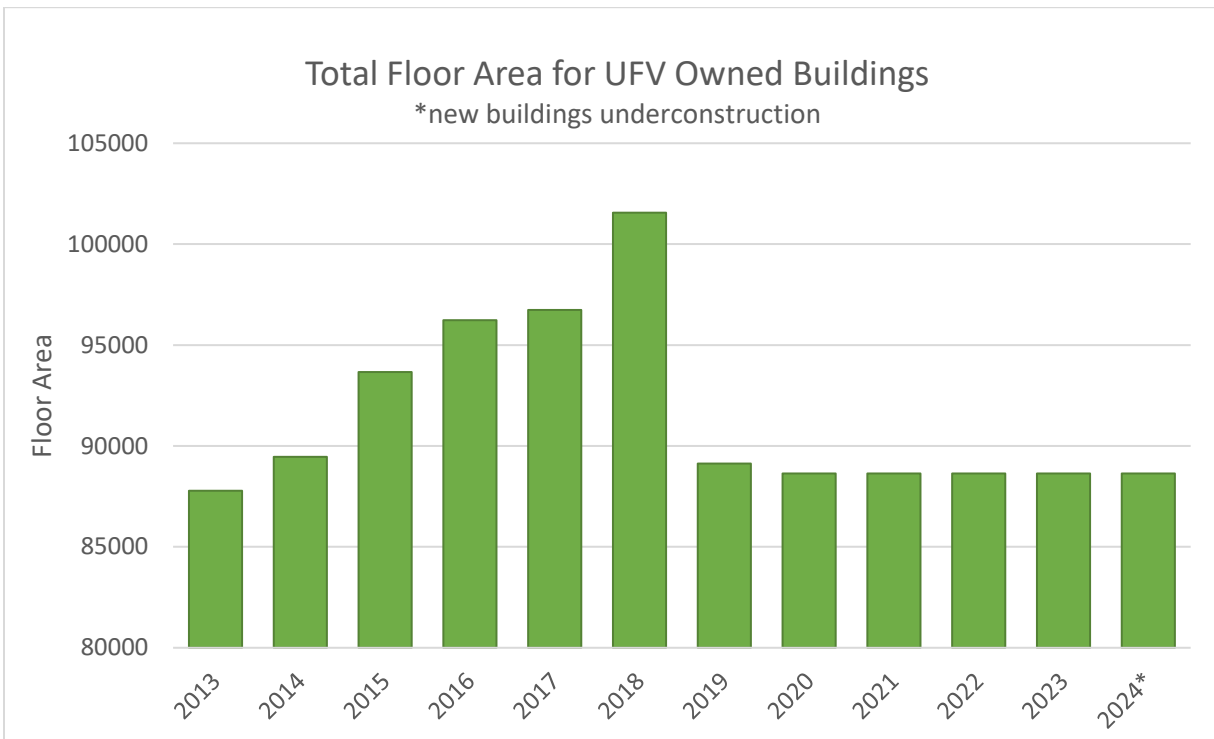


Figure 4: Gross Floor Area Changes Over a 10 Year Period

Energy Management Structure at UFV

Energy management at the University of the Fraser Valley (UFV) is led by the UFV Energy Manager, who works under the guidance of UFV's Director of Energy and Sustainability Management. The Energy Manager is responsible for driving UFV's efforts to reduce energy consumption, improve operational efficiency, and advance the university's greenhouse gas (GHG) reduction and climate resilience goals. Key responsibilities include monitoring and analyzing energy use across UFV's campuses, identifying and implementing energy conservation measures, managing energy efficiency projects, and supporting the transition to low-carbon and renewable energy sources. The Energy Manager also leads the development of strategies to optimize building performance, oversees energy audits, and works closely with Facilities Management, Capital Projects, IT, and other campus partners to integrate energy considerations into planning and operations. In addition, the Energy Manager plays a vital role in engaging the campus community through education, awareness, and behavior change initiatives that promote a culture of energy conservation and sustainability at UFV.

While coordination of energy management activities is ongoing, Energy Management Assessments (EMAs) take place to periodically discuss and clarify key energy management priorities. The EMAs are a structured evaluation of how well UFV is managing its energy use. It examines current practices, systems, policies, and performance to identify strengths, gaps, and opportunities for improvement. The assessment typically covers areas such as energy data management, operational controls, staff engagement, strategic planning, project delivery, and alignment with best practices and standards (such as ISO 50001). For UFV, conducting an EMA provides several key benefits. It gives the university a clear understanding of how effectively energy is being managed across its campuses and helps prioritize actions to improve efficiency, reduce greenhouse gas emissions, and lower operating costs. The assessment also supports the development of long-term, strategic energy management plans and ensures that energy considerations are integrated into capital planning, facilities management, and campus operations. In addition, it provides a framework for continuous improvement, helping UFV strengthen its capacity to achieve its sustainability goals and comply with evolving provincial

and federal requirements. The 2024 EMA session occurred in November 2024 with results of the discussion provided to UFV at the end of the year. The EMA is found in the Appendix the end of this report. Key aspects include how the Energy and Climate Resiliency plan will be leveraged, discussions of implementing ISO50001 a framework that can be used to systematically manage energy, and continuous support of executive levels within the university.

Opportunities and Challenges with Energy Management

Many factors influence energy management and projects creating both opportunities and challenges at UFV. Some of the challenges that have risen include:

- Staffing changes
- A constantly changing student body
- A student body that is made up of people of diverse backgrounds, such as international students, who may not be familiar with energy efficiency practices in Canada
- High capital costs requiring large investments
- Limited budget for energy projects and upgrades
- Insufficient data on energy use due to outdated or non-networked metering systems
- Aging buildings and infrastructure with low energy efficiency
- Limited capacity for integrating renewable energy systems
- Difficulty retrofitting existing buildings for modern energy standards
- Volatility in energy prices impacting budget predictability
- Limited metering to inform consumption patterns and inform decision-making
- Increasingly unpredictable climate conditions throughout the year

UFV has taken actions to address these challenges, including:

- Development of an Energy and Climate Resilience Pathway
- A recently completed metering gap analysis
- Collaboration with different departments in the university to conduct education and outreach regarding energy management
- Discussions with other Canadian universities about potential energy funds through streams like a revolving energy fund, or a travel emission offset fund
- Studies including university-wide Solar Feasibility Assessments, Fleet Management Planning, Abbotsford District Energy Feasibility
- UFV's older buildings have many opportunities for energy savings
- Monetizing carbon emissions reductions through programs that generate and sell carbon credits
- Educating faculty, staff, and students about energy conservation and its benefits.
- Using the campus as a living lab for energy research and innovation projects.
- Enhancing the university's reputation and attracting environmentally conscious students and faculty.

Utility Consumption and Costs

UFV uses methane gas and electricity for its energy needs on campus. Table 5 depicts the consumption of electricity and methane gas usage, overall floor space, and the estimated costs associated with each energy source for 2024. One important aspect of energy management that cannot be influenced by operations is the cost rate. As customers of BC Hydro for electricity, and FortisBC and Shell Energy North America for methane gas, our influence does not extend into their rate structure process. Therefore, the success or failure of any energy management program must not be solely based upon costs.

Table 2: Energy Consumption and Cost Total 2024

Location		Electricity		Methane gas			Energy Total	
Campus	m ²	kWh	\$	GJ	ekWh	\$	ekWh	\$
Abbotsford	53,450	6,220,454	582,512	21,253	5,903,650	214,207	12,124,105	796,719
Aerospace	2,620	140,074	15,849	1,172	325,747	14,265	465,822	30,115
CEP	32,572	3,432,095	323,663	15,995	4,443,094	188,614	7,875,190	512,278
UFV Total	88,642	9,792,625	922,026	38,421	10,672,493	417,087	20,465,119	1,339,113

Energy use significantly correlates to outdoor air temperature and weather conditions. Regionally, there are significantly more days that require heating (Heating Degree Days) than cooling (Cooling Degree Days) to keep occupants comfortable while teaching, learning, and working. Factoring in weather considerations allows for a more comparable basis for year-to-year energy consumption. This is called weather normalization. Figure 5, Figure 6, and Figure 7, show



the normalized energy consumption for UFV’s campuses from 2014-2024.

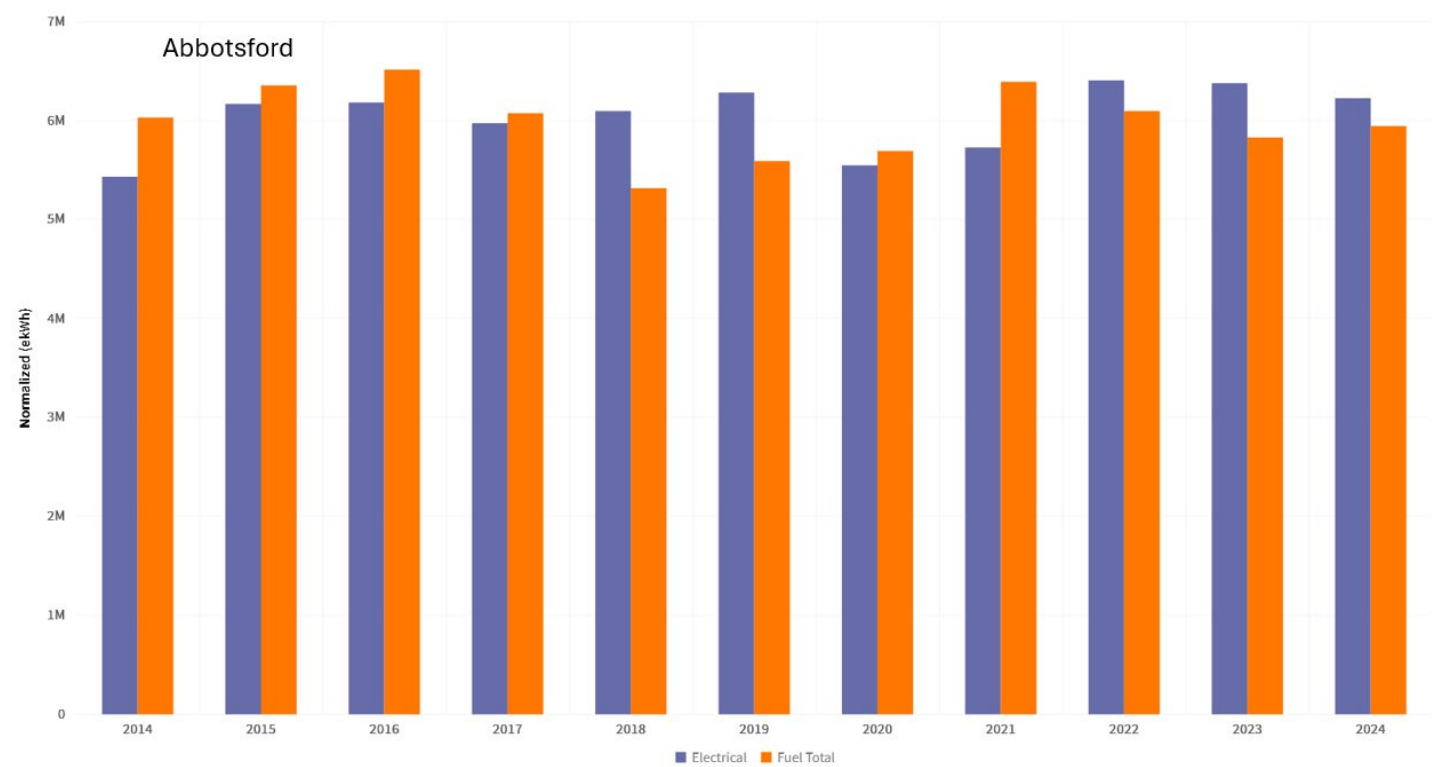


Figure 5:10-Year Energy Consumption at UFV's Abbotsford Campus Normalized for Weather

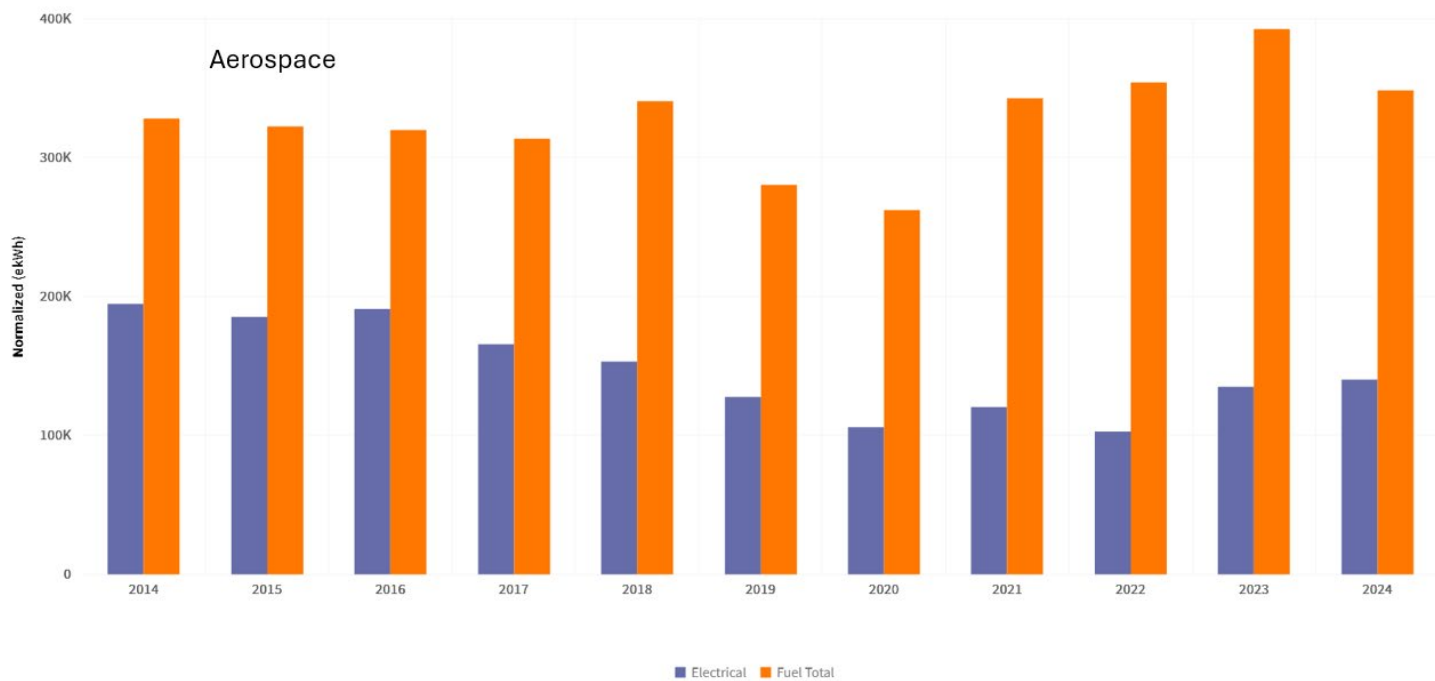


Figure 6: 10-Year Energy Consumption at UFV's Aerospace Campus Normalized for Weather

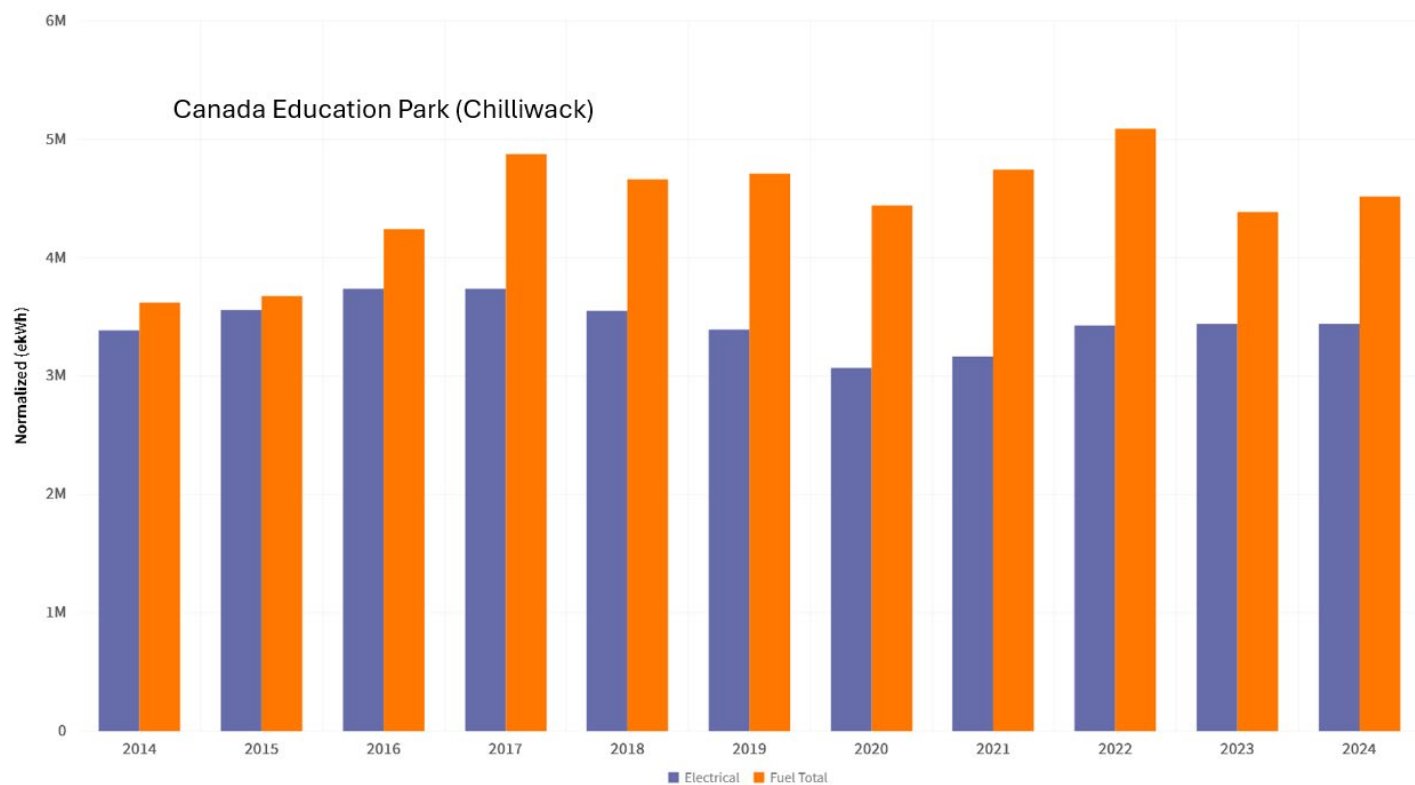


Figure 7: 10-Year Energy Consumption at UFV's Canadian Education Park (Chilliwack) Campus Normalized for Weather

Generally, as energy management works to reduce energy consumption there should a downward trend as the years increase showing that energy conservation measures are working. However, there may be events that affect these trends from occurring that are outside of UFV’s control. For instance, in the year 2020 during the COVID-19 Pandemic there will be a notably less energy consumption compared to the years previous and following this year. Using the charts above help to determine if energy reduction goals are being met. The energy management team is encouraged that consumption rates in the last few years have seen no increases and are often shown to be reduced.

Another way to understand at energy consumption is by using a metric referred to BEPI (building energy performance index) also known in industry as EUI (energy use intensity). This is a measure of energy use per square meter and can be helpful in identifying priority areas of a campus to focus new energy projects on based on which have a higher energy intensity.

Figure 8 below shows the EUI across UFV’s portfolio of buildings. There are a few things to note about this figure.

- 1. There is an electricity meter associated with Lot 7 at the CEP (Chilliwack) campus that is not displayed in this figure.
- 2. There are many buildings that are not on their own meter, instead sharing a meter between buildings, so these are estimates.
- 3. The new student housing building that is under construction is also not included in this figure, however, electricity being used during construction is being pulled from the same areas that share an electricity meter with Buildings F and G, therefore there may be higher than normal BEPI scores for these buildings.

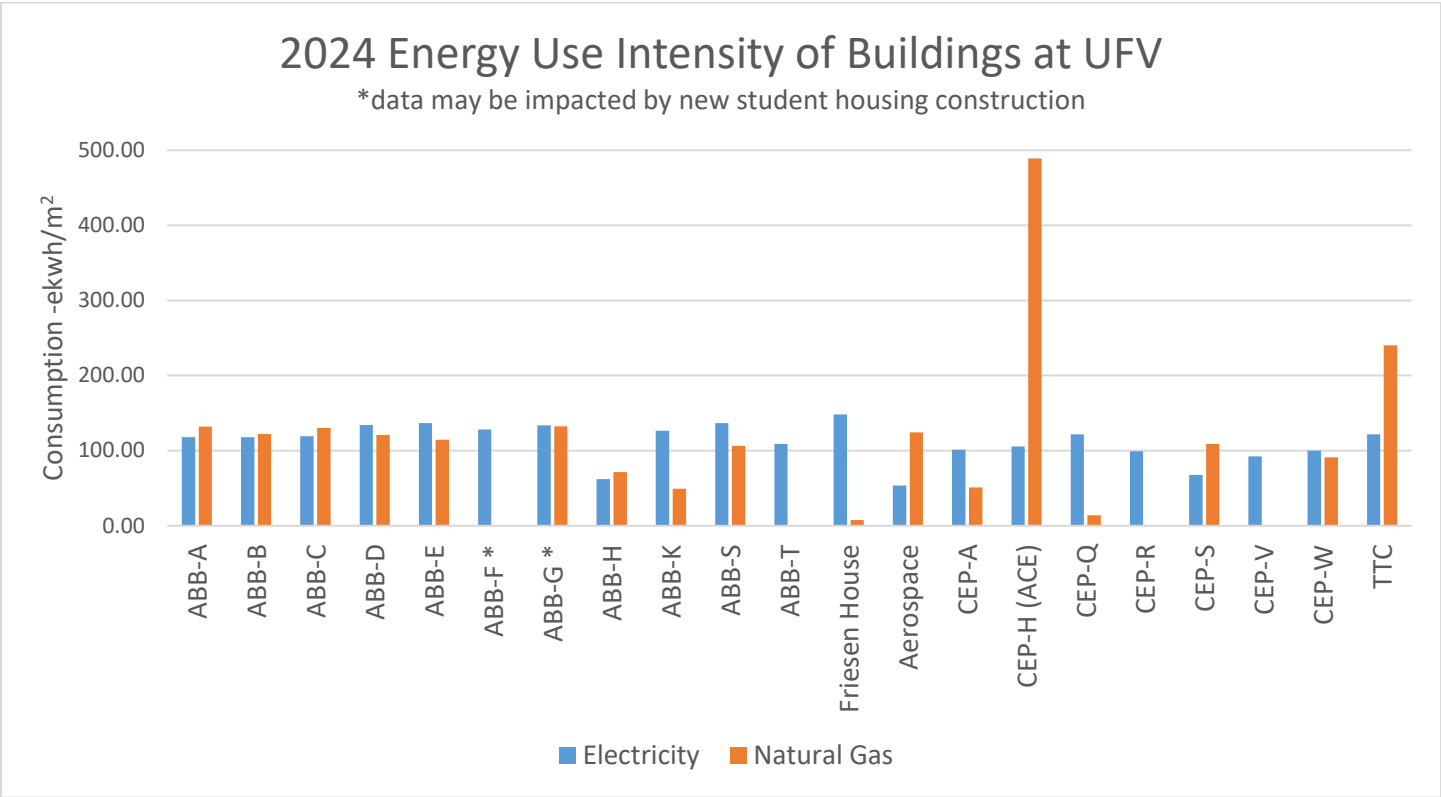


Figure 8: Energy Use Intensity of Buildings at UFV for electricity and methane gas consumption 2024

It is also important to consider the use type of buildings when comparing them. For instance, the Trades and Technology Centre (TTC) hosts courses such as Culinary Arts, and Welding that are by nature more energy intensive than the other courses offered at other UFV buildings.

Cumulative savings can be modelled over time, based on baseline data. The increase in savings over time is considered to be successful energy management in action.

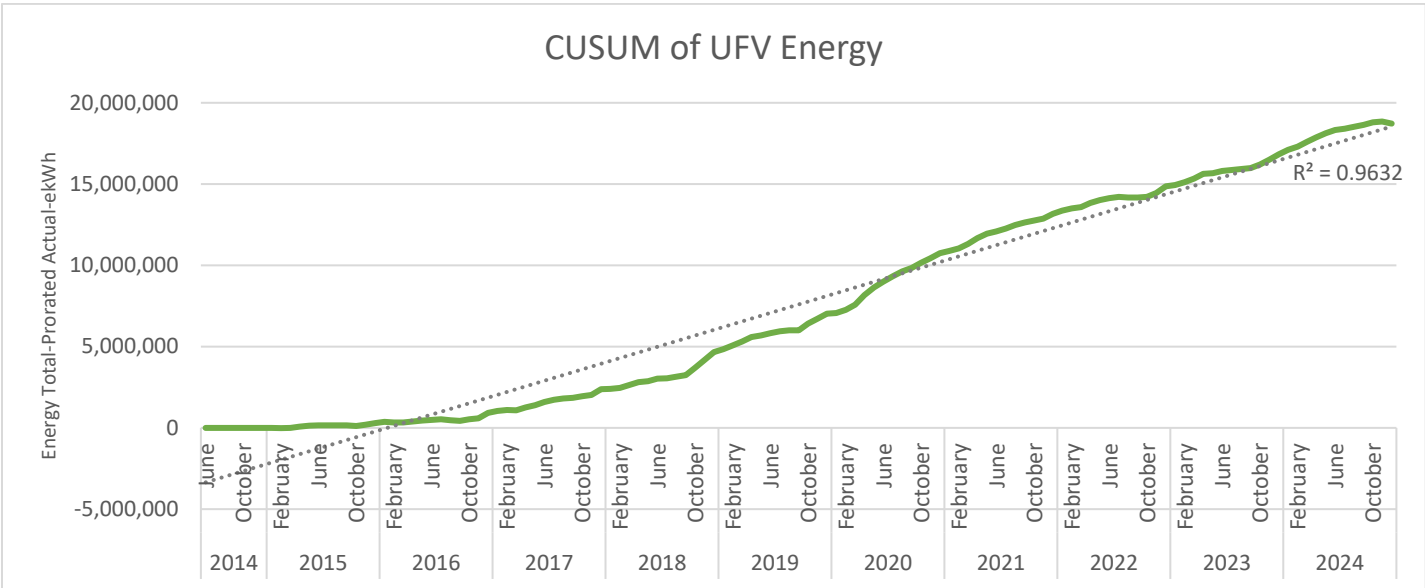


Figure 9: Cumulative Energy Savings over a 10-year period

Benchmarking

Energy Star Portfolio Manager (ESPM) is a benchmarking tool originally created by the US Environmental Protection Agency and is now a part of Natural Resources Canada's benchmarking programs and tools. It is used to help collect utility use data that can be used to compare against historic data for the property, as well as data for similar building types that other organizations have added. It can factor in weather impacts and easily combine different energy sources from a multitude of meters.

In the fall of 2023, UFV has started using ESPM to collect utility data for all the buildings for the Aerospace, Abbotsford, and Canadian Education Park Campuses.

UFV also signed on to Building Benchmark BC (BBBC) for their 2024 reporting year. BBBC takes data that is tracked in ESPM to use in its reports to compare buildings of different types within BC. Moving forward this will help UFV to keep track of how it's campuses lines up amongst its peers. Currently UFV campuses tend to be placed towards more emissions and energy intense in comparison to our peers however with lots of new projects coming up we are hopeful to see improvements in future reports.



2024 Projects Updates and Approved 2025 Projects

These projects are underway or have been completed at the writing of this report. They include all energy related projects, including those funded by external sources. Note that BC Hydro refers to projects that do not receive BC Hydro incentive funding as Program Enabled Savings which are included in this list. Note that where decarbonization projects are occurring that switch equipment from methane gas to electricity, there is an expected electricity increase. That said, we aim to make our buildings more grid-friendly through strategies like demand response, which help reduce or shift electricity use during peak demand periods.

Projects are prioritized based on the following, as well as based on available funding and recommendations from the Energy and Climate Resilience Plan.

- High energy intensity to achieve the greatest energy savings and ghg emission reductions.
- Focus on buildings with aging or end-of-life equipment, where upgrades can be aligned with capital renewal plans to optimize investment.
- Input from building operators who are familiar with operational challenges and opportunities for efficiency improvements.
- Buildings experiencing frequent comfort complaints (e.g., temperature fluctuations, poor air quality) that could impact occupant satisfaction and productivity.
- Areas where significant upgrades or renovations are set to occur

Where there are no plans for major upgrades in the near term, in the next year UFV will the focus is on recommissions (RCx), retro commissioning (Retro-Cx) and continuous optimization (Cop).

Energy Efficiency Project Details

Project	Campus	Funding Support	Incentive Amount	Total Cost	Estimated Energy and GHG Savings Annually
Energy and Climate Resilience Pathway	Abbotsford/ Chilliwack	BC Hydro-Integrated Energy Audit	BC Hydro	\$107,840	\$168,780
<i>Status: UFV campuses have been audited through this exercise and final workshops and modelling are underway to help UFV come up with a pathway for addressing climate change. The project expected to be complete by early 2025.</i>					N/A
Gas Absorption Heat Pump	Chilliwack/ TTC	GAHP- Early Adopter Offer GAHP- Contribution Agreement	Fortis BC	\$575,000	\$575,000
					860 GJ

<i>Status: The GAHPs are installed and now operational, helping UFV to cut down on methane gas use related to space and water heating. There was a successful launch event that brought learning opportunities to those in the industry and an award received from Fortis BC for UFV's involvement on this project.</i>						37 Tonnes CO2e.
HRC/ Interconnecting A, B, D	Abbotsford/ A, B, D	BC Hydro Incentive Fund Agreement and Custom Efficiency Program- Commercial	BC Hydro and Fortis BC	\$118,851 (BCH) 178,276 (Fortis) +\$12,000 Bonus	\$1,750,000	3153 GJ Methane gas
<i>Status: This project will capture waste heat from computer servers and connect the heating and cooling systems of Buildings A, B, and D to increase efficiency. The engineering design was completed, and the tendering process is currently in progress.</i>						152 Tonnes CO2e.
Metering Gap Analysis and Recommendations	Abbotsford/ Chilliwack	Energy Efficiency Feasibility Study	BC Hydro	\$6,900	\$13,800	N/A
<i>Status: Analysis is complete and is currently being used to develop an implementation plan for additional meters.</i>						
Replacing Rooftop Units	Abbotsford A	BC Hydro Incentive Fund Agreement and Carbon Neutral Capital Project Program	BC Hydro and BC Ministry	\$221,645	\$435,705	1836 GJ Methane gas 99 Tonnes CO2e.
<i>Status: Preparation have been made to have a new dual fuel heat pump installed for Building A, helping to reduce the methane gas use and greenhouse gas emissions on campus. Install is expected to be completed early 2025.</i>						
Campus LED Lighting Retrofits	Abbotsford	Energy Efficiency	BC Hydro	\$64,600	\$567,280	187190kw h 2.8 Tonnes CO2e.
<i>Status: LED lighting and lighting control have replaced old, inefficient styles of lights through Buildings E and D, G during 2024 and additional LED retrofits were planned for early 2025.</i>						
Building Energy Studies	All Campuses	RAP	Fortis BC	\$16,500		N/A
<i>Status: Building Audits were completed early in 2024 with reports generated to identify energy conservation measures that align with Fortis BC incentive offers.</i>						
Campus Fleet Plan	All Campuses	EV Ready Fleet Plan	BC Hydro	\$8,000	\$16,000	N/A
<i>Status: UFV worked with a consultant to assess UFV's current fleet and charging infrastructure to determine opportunities for electrification. The study results are now being used to engage with additional stakeholders around the university.</i>						

Campus-wide solar assessment	All Campuses	Feasibility Study	BC Hydro	\$55,000	\$55,000	N/A
<i>Status: UFV has selected a consultant to help determine new opportunities for solar installations on campus. The project kicked off in late 2024 and will be completed in 2025.</i>						
District Energy Feasibility Study	Abbotsford Campus	TBD	TBD	TBD	\$300,000	N/A
<i>Status: UFV will complete a DE feasibility study in 2025 to inform energy management direction and decision making. Preparations were made in 2024 to begin the process of hiring a consultant for this work.</i>						
ISO50001 Implementation	All Campuses	Certification	NRCAN	\$200,000	\$267,000	N/A
<i>Status: UFV has received funding to align energy management strategies with the ISO50001 Standard. Work to get UFV into compliance will involve a gap analysis in early 2025 and implementation steps completed in 2025 and 2026.</i>						
Lighting Audits	All Campuses	TBD	TBD	TBD	TBD	N/A
<i>Status: A contractor has been hired to do an inventory of all UFV lighting fixtures and will make recommendations on how UFV can make lighting more energy efficient while meeting occupancy comfort and safety standards.</i>						

Behavior Change

UFV is part of the Energy Wise Network, a collaborative group made up of Education, Government, Hospitality, Municipalities, and more. This network has helped UFV host various behavior change initiatives in the past and has supported the continued development of a Sustainable Office Certification program started in 2023. The Network provides campaign tool kits, professional coaching hours, webinars, and networking opportunities.

Through the Sustainable Office Certification program various departments received a sustainability audit and a list of actions they could take to boost a sustainability score. Various sustainability practices, including ways to reduce energy consumption, determines their score and a final designation of bronze, silver, gold or platinum. The plan is to continue this program year after year where offices can try to improve upon their original designation.

Like the Sustainable Office Certification, the Sustainable Event Certification encourages good practices of sustainability on campus, including energy conservation. When events are held at UFV they can apply to get a bronze, silver, or gold designation. 2024 was the third year this program ran.

In addition to these initiatives, UFV's Office of Sustainability share tips and resources for sustainability practices including energy conservation in Monthly Newsletters, on social media, and on the UFV website which underwent a large update in 2024 (<https://www.ufv.ca/sustainable-ufv/>). The new sustainability webpage is designed to showcase the university's ongoing energy and sustainability projects. This dynamic platform highlights initiatives such as renewable energy integration, energy efficiency upgrades, and sustainable campus practices, offering an in-depth look at how UFV is advancing its commitment to environmental stewardship. The webpage also serves as a valuable resource for students, staff, and community members interested in learning more about sustainability efforts on campus, providing updates, resources, and opportunities to get involved in advancing sustainability campus.

Electric Vehicle Charging

As more people switch to electric vehicles, the expansion of EV charging stations on campus is an important step in providing essential transportation infrastructure to students, employees, and the public. The stations are also a part of a

broader effort to reduce greenhouse gas emissions and promote leadership in sustainable practices across all areas of the university.

UFV currently owns and maintains nine Level 2 stations and one DC fast charge station available for public use between the Abbotsford, Canada Education Park (Chilliwack), and Aerospace campuses. The chargers can charge up to 19 vehicles simultaneously. In 2024 updates to charging infrastructure included installation of a fleet specific charger and the replacements of old/damaged chargers. In partnership with BC Hydro UFV will install an additional 8 EV stations on it's Abbotsford and Chilliwack campuses over the summer of 2025.

Conclusion

The University of the Fraser Valley's commitment to reducing energy consumption and GHG emissions through intentional strategic energy management is operational necessity. By implementing the actions described in this Strategic Energy Management Plan we aim, to reduce our GHG emissions, and operational costs, conserve energy and contribute to a sustainable future.

This SEMP aligns with UFV's values of environmental stewardship, social responsibility, and academic excellence. Moreover, our proactive approach to energy management demonstrates leadership and accountability, inspiring our students, staff, and the wider community to engage in sustainable practices.

UFV remains dedicated to creating a healthier, more sustainable environment for current and future generations. This strategic endeavor ensures that the University of the Fraser Valley remains at the forefront of sustainable development, paving the way for a greener, more resilient future.

Appendix A – Energy Management Letter of Commitment

*Letter of Commitment to Energy Management
October 12, 2019*



The University of the Fraser Valley's Strategic Plan outlines key strategic directions, including: to be a "leader of social, cultural, economic, and environmentally-responsible development in the Fraser Valley" and to be "innovative, entrepreneurial, and accountable in achieving our goals". A major component of our environmental responsibility as an organization is to effectively manage the energy we consume. Natural gas provides us with heat and hot water in our buildings. Electricity provides us with lighting and cooling and runs our computers and other equipment. While the use of energy is intrinsic to our operation as a university, as leaders in our communities we must also be innovative and accountable for minimizing the environmental impact and greenhouse gas emissions that result.

At the University of the Fraser Valley we are committed to energy efficiency and conservation. This commitment is deeply engrained. In 1999 we joined Natural Resources Canada's Energy Innovator Program. In 2002 an energy study was conducted to find ways in which energy consumption could be reduced at that time. In 2005, after the measures identified in the study were implemented, we succeeded in reducing our annual greenhouse gas emission intensity by 11%. In the summer of 2010, with the support of BC hydro, we hired a dedicated Energy Manager for the Abbotsford Campus and Aerospace Centre resulting in a further 10% energy reduction during the first 3 years. In 2016 we re-affirmed our dedication to environmental stewardship in the Fraser Valley by hiring a new Energy Manager tasked with addressing energy efficiency, rapidly escalating utility costs, and reducing the environmental impact of university operations. To reinforce our commitment to energy efficiency and conservation and to link our commitment to outcomes, we are developing a new version of the Strategic Energy Management Plan (SEMP). The SEMP will provide us with the framework and direction required to further reduce our energy consumption and meet reduction targets.

I am proud of our commitment to energy efficiency and conservation, knowing we are not only providing a benefit to the environment, but also to our community. Further, by providing a means of generating a more sustainable university we are also improving our economic bottom-line – a win-win situation. I encourage all members of the campus community to provide support for our commitment, as the benefits extend to each and every one of us.

A handwritten signature in dark ink, appearing to read "Jackie Hogan". The signature is fluid and stylized, with a large loop at the end.

*Jackie Hogan,
Chief Financial Officer and Vice President Administration
University of the Fraser Valley*

Appendix B - 2024 EMA Action Plan Details

Action Plan			
Topic	Action	Due Date	Notes
Plan			
Policy/Charter & Goals	Finalize the Energy and Climate Resilience Pathway to form a clear framework/course for energy and climate resilience work.	Early 2025	
	Distribute the new policy through established communication channels, such as newsletters and team meetings, and have energy team members actively promote the policy to ensure understanding and awareness across the organization.	2025	An official energy policy will be formed as ISO50001 implementation takes place. Disseminating info about the energy and climate resiliency plans and targets will occur as information is finalized
Planning & Budgeting	Regularly update the opportunity register with new and ongoing projects to ensure accurate prioritization and alignment with goals. Use this as a strategic tool to identify and address areas for improvement as better data becomes available.	Ongoing	
Do			
Employee Engagement	Conduct a Sustainable Literacy Assessment to measure employee understanding of sustainability practices and engagement initiatives. If results fall below expectations, develop corrective actions to strengthen future programs.	2025	The sustainable office certification and OoS events are opportunities where this could be implemented
	Once sufficient data is available, consider competitions such as energy reduction contests that leverage real-time dashboards to display energy usage and actively engage employees in reduction efforts.	2025	Part of this task will be to look into different types of screen displays and software we would use (tableau).
Procurement & Partnering	Continue integrating procurement processes to align with BC Net to create a high-level sustainability procurement policy accessible to all BC Net members.	End of 2025	The procurement team is working with BCNET to work on an approach
	Once the BC Net policy is finalized, tailor it to meet the specific sustainability and operational needs of UFV, ensuring alignment with institutional priorities.	End of 2025	The procurement team is working with BCNET to work on an approach
Check			
Data Collection & Management	Address metering gaps by implementing submetering at key points to improve the availability of building-level data.	2025	A workplan is being developed and UFV is engaging with a consultant to determine possible next steps forward. This will also align with ISO50001 implementation.
	Once granular data is available, use the upgraded DDC system to analyze trends, flag equipment and utility inefficiencies such as water overconsumption.	Dependent on the above item	Once the above task is completed schedule a meeting with Ainsworth to discuss this approach and efforts will be made to align funding opportunities with training/education opportunities.
Performance, Measurement & Reporting	Once submetering is improved, set up dashboards to enable clear visualization and tracking of energy performance metrics.	Dependent on the above tasks	
Act			
Third Party Certification & Recognition	Research third-party certifications such as LEED, WELL and ISO 50001 to evaluate their feasibility and potential benefits for enhancing UFV's sustainability credentials.	2025&2026	This will be addressed through design standards (in progress) and ISO 50001 compliance which will be completed during 2025/2026 with the support of NRCAN funding

Overall effectiveness	Improve the organization's data collection processes to ensure comprehensive tracking, facilitating better reporting and decision-making.	2024 & 2025	Expand the project tracking spreadsheet to one Masterfile to best keep track of overall project costs, and energy savings/GHG's. Project management software-Notion will be investigated for use.
	Complete the Energy and Climate Resilience Pathway to establish a robust and actionable roadmap for advancing UFV's energy and climate goals.	Early 2025	