Integrated Energy Audit

City of Courtenay | 18 Sites
Courtenay, British Columbia

Project #: 2024472
Date: October 23, 2025
Version: 2.0

Prism ENGINEERING
Changing Systems for a Better World

City of Courtenay

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We are a consulting firm committed to helping organization achieve energy, climate, and asset renewal objectives by integrating engineering, energy management, and sustainability services.

1. Executive Summary

This report summarizes the findings for the Integrated Energy Audit (IEA) portfolio of buildings for the City of Courtenay conducted by Prism Engineering Limited (Prism). The purpose of this study is to give City of Courtenay an understanding of their buildings' energy use, emissions and utility costs, and energy management opportunities for those buildings. 18 of the City's buildings were selected for IEA studies based on criteria such as: small size, simple heating, cooling, and ventilation systems, and low emissions intensity (primarily due to being a fully electric site). All buildings have electricity accounts, five have natural gas accounts, and one building utilizes heating oil. A summary of the portfolio's 2024 energy and emissions are as follows[1]:

- Electricity consumption: 450 MWh
- Fuel consumption (natural gas and heating oil): 530 GJ
- Annual Utility Costs: $70k
- Greenhouse Gas Emissions: 32 tonnes of CO_2e

As part of the IEA program, measures for energy efficiency (EE), low carbon electrification (LCE), demand response (DR), and distributed generation (DG) were explored. The measures identified for the portfolio are:

- Lighting (EE): Upgrades to lighting types and controls.
- Controls Upgrades (EE, DR): Upgrades to existing controls for HVAC systems.
- EV Charger Demand Control (DR): Limiting charging times during peak hours.
- Heating System Efficiency Upgrade (EE): Upgrade electrical heating equipment to heat pump technology.
- Domestic Hot Water Electrification (LCE): Replace gas-fired domestic hot water (DHW) heaters with electric resistance or heat pump heaters.
- Heating System Electrification (LCE): Replace boilers, furnaces and infrared heaters for heat pumps or electric counterparts.
- Envelope (EE): Improve building thermal performance to decrease the heating load of a building.
- Solar Photovoltaics (DG): install Solar PV panels to generate electricity on-site and displace electricity consumption from the grid.

The estimated impact of these measures across the portfolio is an **88%** reduction in natural gas consumption, **100%** reduction in heating oil consumption, and **80%** reduction in electricity consumption based on 2024 usage for the portfolio. The savings result in **90%** reduction in GHG emissions, from an estimated 32 to 3 tonnes of CO_2e per year.

[1] Includes utility data for City of Courtenay IEA portfolio buildings, and modelled energy consumption, cost, and emissions for Rental House – Tarling.

A summary of the identified measures is included in Section 6, Results for Identified Measures. Individual building reports are included in APPENDIX B.

2. Background and Methodology

2.1 Contact Information

Client and consultant contact pertinent to this project are located in APPENDIX A.

2.2 Objectives

The key objective of these BC Hydro Integrated Energy Audits (IEA) is to identify and analyze opportunities to improve inefficient systems, reduce Scope 1 and 2 emissions and operating costs by exploring a range of opportunities related to:

- Energy Efficiency (EE) – Optimize the energy use to reduce energy consumption and peak demand.
- Low Carbon Electrification (LCE) – Switch from fossil fuels to clean electricity and reduce greenhouse gas emissions.
- Demand Response (DR) – Reduce or shift energy use on the customer side, during specified dates and times, to provide flexible demand.
- Distributed Generation (DG) – Generate electricity using renewable sources to partly (or fully) offset on-site electricity needs.

This high-level study meets the following objectives:

- To develop a working model of the equipment and energy related systems in the building, including building operation and use;
- To review and analyze the energy use history and obtain a breakdown by end use to be used as a baseline from which savings could be measured;
- Identify opportunities that would result in efficiency improvements and savings related to EE, LCE, DR, and DG; and
- To provide a business case analysis summary of each measure.

2.3 Energy Study and Analysis Methodology

The following outlines the methodology that we have applied to conduct this project:

Documentation Review and Site Investigation

A review of the available technical information was conducted to gain an understanding of the existing systems and identify the existing equipment. This included a review of building condition assessments and mechanical equipment lists where available.

Site visits were conducted by Prism in April 2025 to tour all buildings to obtain familiarization and an understanding of the existing systems. We met with City of Courtenay representatives, Jeanniene Tazzioli and Reggie Mercado. They provided additional insight into the history and operation of the building; their assistance is appreciated.

Energy Analysis Methodology

The energy analysis was carried out based on the following methodology:

- An audit of the building equipment was carried out including physical equipment counts, nameplate readings, and measurements to determine the equipment load in kilowatts (kW);
- The hours of operation were determined for all equipment from the system schedules, hardware settings, building operators' experience, and site observations. The hours and load information was combined to determine the consumption in kilowatt-hours (kWh) or gigajoules (GJ);
- The energy use calculated above was reconciled to the actual metered consumption; and
- The impact of weather data was reviewed and models for the building's energy use were determined for heating and cooling.

End-Use Breakdown

The audited equipment loads and hours of operation were used to determine the breakdown of the total energy use.

Lighting Audit and Analysis

The lighting review includes a walk-through audit of the facilities, analysis of retrofit alternatives, and a summary of recommendations.

Electrical Equipment Analysis

The electrical systems analysis includes a review of the system capacity based on main breaker size and load factor calculations for estimated peak demands. This analysis was conducted for buildings where electrification (LCE) measures have been identified and are expected to increase building electricity demand.

Mechanical Audit and Analysis

The mechanical review included a walk-through audit of the facilities' heating, cooling and ventilation systems and controls, an analysis of retrofit alternatives, and a summary of recommendations.

Measure Selection Criteria

Each measure proposed for implementation on this project has been selected based on its viability, as measured against the following criteria:

- costs and savings within overall payback guidelines;
- appropriateness for tasks performed in the space;
- cost to retrofit the existing system compared to the cost of replacement; and
- consistency of application (areas of similar function are consistent).

We recommend that all mechanical retrofit equipment be permanently installed and anticipate the new equipment will last 10 years or more.

Savings Methodology

Savings estimates are based on engineering calculations and are not guaranteed. The impact of building changes, use changes, new equipment, and weather need to be considered when evaluating savings.

Cost Estimation Methodology

Costs are estimated installed costs and include materials and labour. They do not include PST or GST.

Costs can vary according to market factors and contingencies should be applied for obtaining budget approval. It is our intent to provide accurate pricing; however, the pricing provided should be used as estimates only and not fixed prices. In some cases, the measures were reviewed with contractors and suppliers before finalizing cost estimates. Prism Engineering does not guarantee pricing.

3. Building and System Descriptions

The buildings identified in Table 1 are included in this study and are described according to the City of Courtenay's facility asset list.

Table 1: Summary of Buildings Audited

Building Name	Building Type	Address	Area (ft^2)	Energy Type
Woodcote Park	Recreation	1281 17th St	890	Electricity
Standard Park Washroom	Recreation	1450 Cliffe Ave	45	Electricity
Downtown Public Washroom	Washroom	6th St & England Ave	30	Electricity
Bill Moore Park	Recreation	2375 Kilpatric Ave	7,415	Electricity
Courtenay Lawn Bowling Club	Recreation	2375 Kilpatrick Ave	3,280	Electricity
Martin Park	Recreation	2045 Choquette Rd	435	Electricity
Simms Park	Recreation	50 5th St	2,111	Electricity
Valleyview Park	Recreation	1701 Lerwick Rd	3,950	Electricity
Courtenay Civic Cemetery and Crematorium	Government	4768 Island Hwy	1,160	Electricity, Natural Gas
Wolf Lake Aggregate	Warehouse	1109 Comox Rd	4,900	Electricity
Trades Building and Storage (Carpenter Shop)	Public Works	721 Grant Ave	5,060	Electricity, Natural Gas
Chamber of Commerce and Train	Office and Display	2040 Cliffe Ave	3,200	Electricity
Fire Training Centre	Firehall	220 Waters Pl	5,170	Electricity, Natural Gas
Rental House - 210 Anderton Ave	Vacant Home	210 Anderton Ave	2,150	Electricity, Natural Gas
Rental House - Tarling	Leased Home	2390 Lake Trail Rd	1,055	Electricity, Heating Oil, Wood Fireplace
Cooperatives Building	Government	685 A&B Cliffe Ave	2,995	Electricity
Telus Works Yard (Office and Storage)	Training Room and Storage	1090A-B Piercy Ave	1,055	Electricity
Marina Building and Cafe	Café and Washroom	100 20th Street	1,050	Electricity

Additional information about the buildings, including their lighting, heating, cooling, and ventilation systems, are included in individual reports, provided in APPENDIX B.

For buildings that are expected to have an increased electrical load from measures identified, an electrical system description and analysis of the building's spare electrical capacity, is also included in individual building reports, provided in APPENDIX B.

4. Portfolio Energy Performance

4.1 Utility Rates

Energy cost savings were calculated using BC Hydro's Opportunity Register. The published electricity and natural gas rates for the accounts applicable to the portfolio of buildings are shown below.

Electricity

Electricity is provided by BC Hydro through accounts at various rates across the portfolio. Rates applicable to the portfolio are summarized in Table 2.

Table 2: Rates used for Electricity Savings Estimates (Not including PST)

Rate Code	Rate Name	In Effect	Demand ($/kW)	Consumption ($/kWh)
1101	Residential Service – Tiered Rate	April 2025	-	First 675 kWh: $0.1172 Additional kWh: $0.1408
1151	Residential Service – Flat Rate	April 2025	-	$0.1263
1300	Small General Service	April 2025	-	$0.1335
1500	Medium General Service	April 2025	$5.76	$0.1031

Natural Gas

Five buildings in the City's portfolio consume natural gas. The Natural gas rate applicable to each of those sites are presented in Table 3. Published natural gas utility rates are presented in Table 4.

Table 3: Buildings with Natural Gas Accounts

Building	NG Rate
Courtenay Civic Cemetery	2- Small Commercial
Fire Training Centre	2- Small Commercial
Rental House – 210 Anderton Ave	1- Residential
Trades Building and Storage	2- Small Commercial
Valley View Park	2- Small Commercial

Table 4: Rates used for Gas Savings Estimates (Not including PST)

Utility	Vendor	Rate	In Effect	Consumption ($/GJ)
Natural Gas	Fortis BC	1	April 2025	$11.103
Natural Gas	Fortis BC	2	April 2025	$8.795

Heating Oil

Heating oil is delivered to Rental House – Tarling for an oil furnace. For utility cost savings analysis, a price of $30 per GJ of heating oil was used.

4.2 Energy Use and Cost Summary

Prism's Utility Management and Analysis (PUMA) software was used for the analysis[3]. Note that GST or PST is not included in any cost calculations or billed amounts. Total fuel use and costs for 2024 are shown in Table 5.

Table 5: 2024 Fuel Use

		2024
Electricity	Use (kWh)	450,430
	Cost ($)	$61,503
Gas	Use (GJ)	458
	Use (ekWh)	127,257
	Cost ($)	$7,263
Oil	Use (GJ)	71
	Use (ekWh)	19,722
	Cost ($)	$2,130
Total	Use (ekWh)	597,410
	Cost ($)	$70,895

The figures below show the energy use and cost breakdowns by energy source.

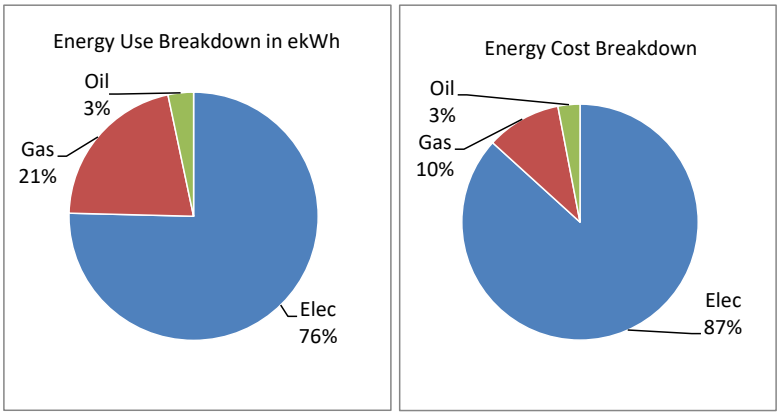

Figure 1: Energy Use and Cost Breakdown by Energy Source for the IEA Portfolio – 2024 Data

[3] PUMA was used for the analysis of utility data for IEA portfolio buildings. Energy and costs for Rental House – Tarling were modelled separately and are included in energy and costs presented in this section.

4.3 Greenhouse Gas Emissions Summary

Greenhouse Gas Emissions Breakdown

In calculating greenhouse gas emissions, both direct and indirect reductions are included. The emissions factors are provided in the following table. Note that the electricity emissions factor changes from year to year depending on the amount of electricity sourced from fuel fired plants versus hydro electric.

Note that as of January 2025, all FortisBC natural gas customers have two percent of their gas use designated as Renewable Natural Gas (RNG), known as RNG blend[4].

Table 6: Emission Factors per Source

Energy Source	Emission Factor	Reference
Electricity	0.0000099 tonnes/kWh	B.C.'s 2024 Grid Intensity Factors[5]
Natural Gas	0.0498643 tonnes eCO_2/GJ	2020 BC Best Practices Methodology for Quantifying GHG Emissions[6]
Renewable Natural Gas	0.0002932 tonnes eCO_2/GJ	
2% RNG FortisBC Blend (default)	0.0478955 tonnes eCO_2/GJ	Calculated emission factor (98% Natural Gas, 2% RNG)
Heating Oil	0.07328273 tonnes eCO_2/GJ	National Inventory Report (Table A6.1-5)[7]

The chart below shows the contribution of each energy source to the portfolio's greenhouse gas emissions.

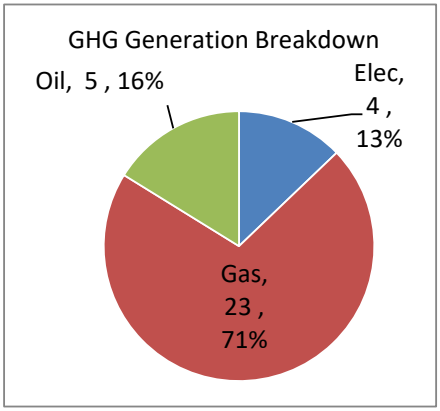

Figure 2: GHG Emissions by Energy Source – 2024 Data

[4] https://www.fortisbc.com/about-us/climate-leadership/providing-renewable-and-low-carbon-energy

[5] https://www2.gov.bc.ca/gov/content/environment/climate-change/industry/reporting/quantify/electricity

[6] https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2020-pso-methodology.pdf

[7] https://www.canada.ca/en/environment-climate-change/emission-factors-reference-values.html

Together, the greenhouse gas emissions associated with the buildings included in this study's portfolio account for 7% of all City of Courtenay building emissions (see Figure 3).

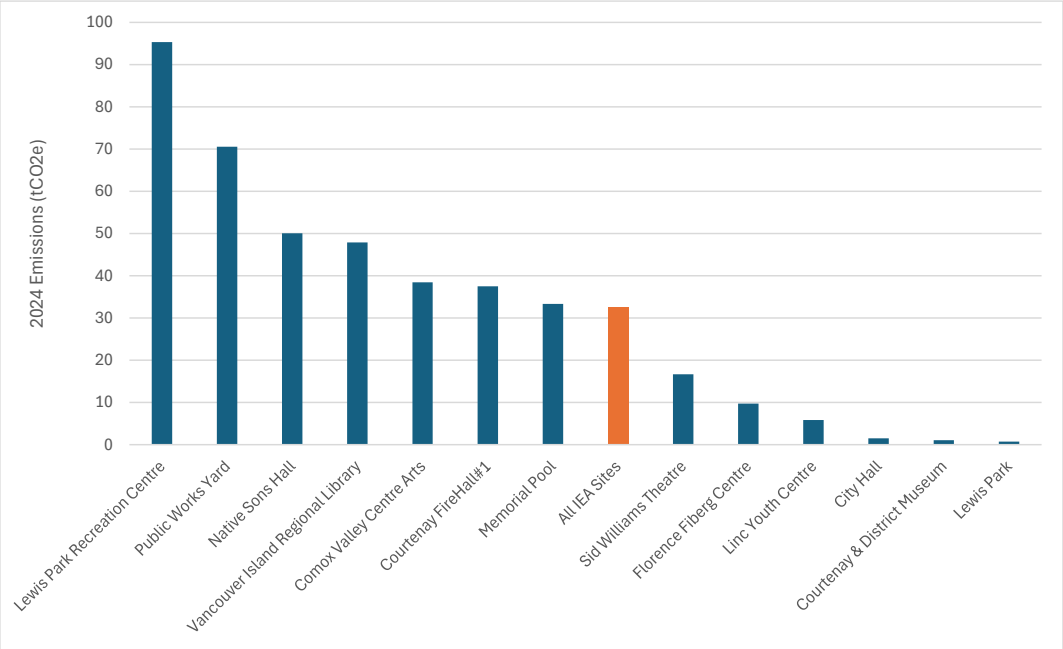

Figure 3: Emission Comparison for IEA Portfolio Buildings and Other City Buildings

4.4 Facility Comparison

Figure 4 below presents the Building Energy Performance Index (BEPI) in ekWh per square foot as well as the Greenhouse Gas Emissions Intensity in kilograms of CO_2 per square foot for each of the buildings in the portfolio.

Figure 5 below presents the Building Energy Cost Index (BECI) in CAD per square foot for each of the buildings in the portfolio.

Note that in the graphs below, for Downtown Public Washroom, estimated EV Charger electricity use has been excluded to represent energy performance of the building.

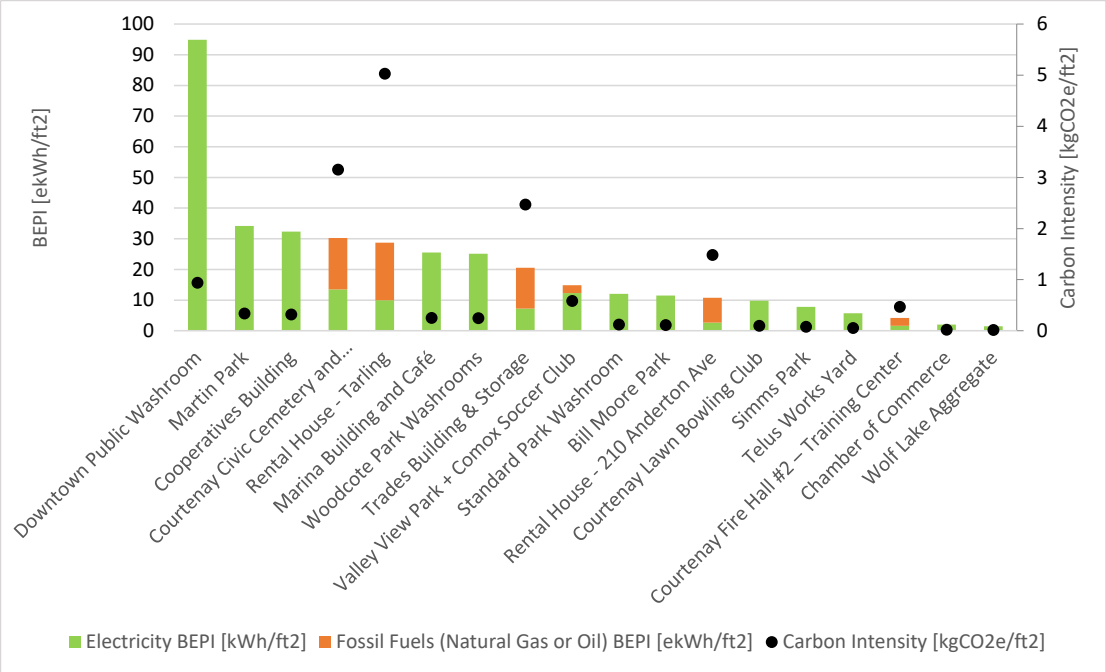

Figure 4: Building Energy Performance Index and Carbon Intensity for Buildings in IEA Portfolio

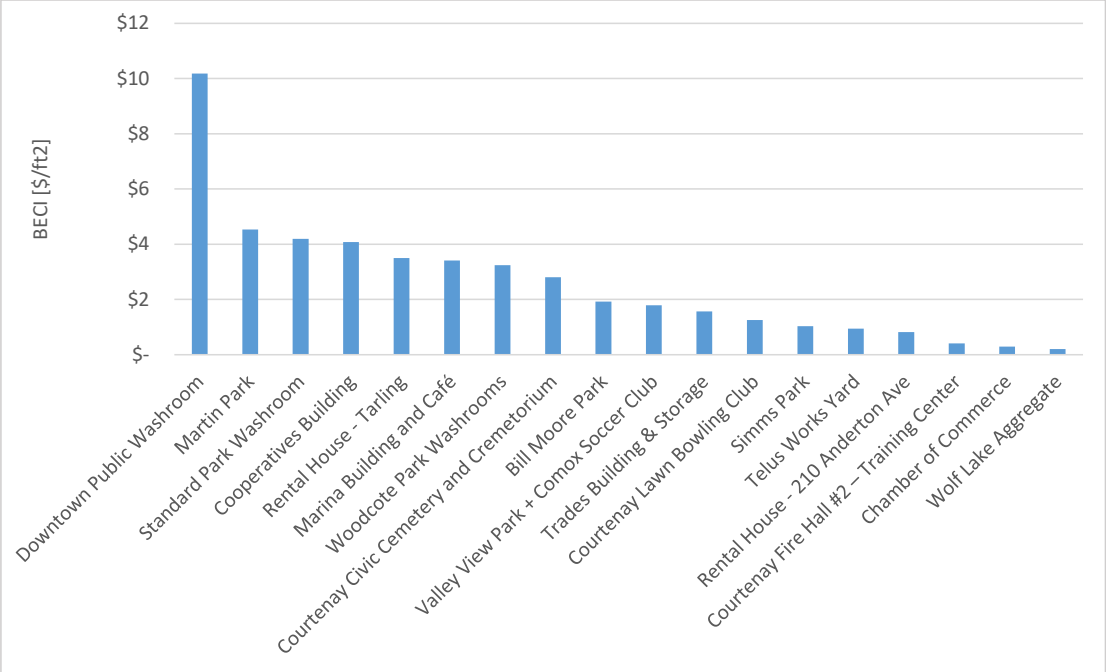

Figure 5: Building Energy Cost Index for Buildings in IEA Portfolio

5. Summary of Portfolio Identified Measures

The following section provides a general description of the types of measures identified across the 18 buildings included in this study. Where applicable, additional comments—such as site-specific assumptions, implementation considerations, or other relevant notes—are included in the individual building energy audit reports.

5.1 Lighting

The City's building portfolio has been partially converted to LED lighting. Lighting is not a significant source of GHG emissions; however, converting the remaining lights to high efficiency LEDs remains an opportunity to achieve energy savings and "free up" electrical capacity. Additionally, implementing lighting control strategies such as occupancy sensors for indoor lighting or photocells for outdoor lighting can achieve both electricity and demand savings.

5.2 Controls Upgrades

Energy and emissions savings can be achieved by improving the control strategies of existing equipment. Most buildings in this portfolio have limited control systems. Upgrading controls allows for implementation of energy reducing strategies, such as enable equipment scheduling and temperature setbacks, optimize equipment sequencing and integration and improve maintenance and comfort due to equipment failure trouble shooting. Control upgrades recommended include:

- Programmable thermostats to add scheduling and setback opportunities to existing heating systems.
- Push buttons to control radiant heating in large workshop areas.

5.3 EV Charger Demand Control

The electrical meter feeding Downtown Public Washroom also feeds a Level 2, dual head electric vehicle (EV) charger. The charger is for public use and has 2 plugs available that share 6.6 kW of power. Turning off the power to EV chargers (or limiting the power), whether through an automatic, networked response, or through manually turning them off, is a form of demand response, and can be applied during BC Hydro peak demand hours. If this is done within the BC Hydro Peak Saver program (see Section 7 for program details), the City may be able to earn credits at a rate of $50 per average kW saved.

5.4 Heating System Efficiency Upgrade

Most electric heating for the City's portfolio occurs with electric resistance baseboard heaters. While simple and reliable, baseboards are amongst the most energy-intensive options for electric space heating. Replacing the heating provided by existing baseboards with heat pumps would increase the efficiency of the equipment due to heat pumps' coefficient of performance (COP) of 2.5 to 3. A non-energy benefit of these measures is providing cooling to the buildings.

5.5 Domestic Hot Water Electrification

Domestic hot water is heated by both gas and electric resistance heaters in the City's portfolio. For the buildings with gas-fired heaters, electric resistance heaters are considered as replacements. Electric resistance heaters produce DHW with relatively low emissions, whilst increasing efficiency and maintaining DHW delivery rates.

5.6 Heating System Electrification

Workshops and garages areas utilize gas-fired equipment such as infrared radiant heating tubes or unit heaters. To reduce GHG emissions, two main options are presented in the audits: split-system air source heat pumps (ASHPs) and electric infrared unit heaters. In the rental houses, a boiler (Rental House – 210 Anderton) and a furnace (Rental House – Tarling) are used for heating. Options to electrify include heat pump and electric resistance technologies.

5.7 Envelope

Envelope upgrade projects reduce the overall energy consumption of the building by reducing the impact of outdoor conditions on the indoor environment. Envelope thermal performance is important to the building's overall energy performance and can provide co-benefits of improved climate resilience and occupant comfort.

5.8 Solar Photovoltaics

Roof-mounted solar photovoltaics (solar PV) was analyzed for the City's portfolio. A solar PV system displaces the electricity that would otherwise be purchased from the grid and thus results in lower electrical bills. Given BC's relatively clean (low GHG emissions intensity) electricity supply, solar PV provides limited GHG reduction potential.

6. Results for Identified Measures

The table below highlights the measures identified across the sites for the City's portfolio. The table presents measure type (described in Section 5), measure descriptions, as well as the energy, emissions, and financial impact of each measure.

Note that in the table below, electricity cost savings do not include credits available through the BC Hydro Commercial Peak Saver Program (except for the Downtown Public Washroom EV charger demand control measure). The program offers $50 credit per average kW reduced[8].

[8] https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/power-smart/business/programs/demand-response-for-business-customer-manual.pdf

Site	No.	Measure Type	Measure Description	Electricity Savings (kWh/yr)	Customer Demand Savings (kW)	BC Hydro Demand Savings (kW)	Fuel Savings (GJ/yr)	Implementation Cost Estimate ($)	Electricity Cost Savings ($/yr)	Demand Cost Savings ($/yr)	Fuel Cost Savings ($/ yr)	Total Cost Savings ($/yr)	Payback (yrs)	GHG Reduction (tonne CO_2-e/yr)
Valley View Park & Comox Soccer Club	1	Controls Upgrades	Programmable thermostats for space heating setback control	6,300	6	10	0	$3,000	$852	N/A	N/A	$852	3.5	0.1
	2	DHW Electrification	Gas-fired DHW to electric resistance heater	-6,600	-15	N/A	33	$6,700	-$892	N/A	$290	-$602	N/A	1.6
	3	Solar PV	Solar PV on roof	50,480	N/A	N/A	N/A	$126,200	$6,825	N/A	N/A	$6,825	18.5	0.6
Courtenay Civic Cemetery	1	Lighting	Existing lighting to LED	750	0	N/A	N/A	$300	$101	N/A	N/A	$101	3.0	0.0
	2	Heating System Electrification	Existing natural gas heater to ASHP	-3,891	-2	N/A	70	$10,100	-$526	N/A	$1,174	$648	15.6	3.5
	3	Controls Upgrades	Lock garage thermostat at 16 deg C	1,000	0	N/A	N/A	$250	$135	N/A	N/A	$135	1.9	0.0
	4	Solar PV	Solar PV on roof	17,000	N/A	N/A	N/A	$42,400	$2,298	N/A	N/A	$2,298	18.5	0.2
Trades Building & Storage	1	Lighting	Existing interior fluorescent to LED	9,360	6	N/A	0	$1,500	$1,265	N/A	N/A	$1,265	1.2	0.1
	2	Lighting	Existing exterior fluorescent lighting to LED	1,360	2	N/A	0	$1,100	$184	N/A	N/A	$184	6.0	0.0
	3	Controls Upgrades	Pushbutton & setback for existing IR heaters	N/A	N/A	N/A	180	$5,000	N/A	N/A	$1,583	$1,583	3.2	9.0
	4	Heating System Electrification	Option 1: Existing IR heaters to ASHP	-4,400	-3	N/A	60	$25,000	-$595	N/A	$528	-$67	N/A	2.9
	5	Heating System Electrification	Option 2: Existing IR heaters to electric	-13,100	-10	N/A	60	$15,000	-$1,771	N/A	$528	-$1,243	N/A	
	6	Solar PV	Solar PV on roof	43,600	N/A	N/A	N/A	$109,000	$5,895	N/A	N/A	$5,895	18.5	0.5
Rental House - 210	1	Heating System Electrification	Option 1: existing gas-fired boiler to electric boiler	-14,100	-6	N/A	63	$10,500	-$1,800	N/A	$699	-$1,101	N/A	3.0

Site	No.	Measure Type	Measure Description	Electricity Savings (kWh/yr)	Customer Demand Savings (kW)	BC Hydro Demand Savings (kW)	Fuel Savings (GJ/yr)	Implementation Cost Estimate ($)	Electricity Cost Savings ($/yr)	Demand Cost Savings ($/yr)	Fuel Cost Savings ($/ yr)	Total Cost Savings ($/yr)	Payback (yrs)	GHG Reduction (tonne CO_2-e/yr)
Anderton Ave	2	Heating System Electrification	Option 2: Install split system for space heating	-4,600	-2	N/A	63	$21,000	-$600	N/A	$699	$99	212.1	
Rental House - Tarling	1	Lighting	Fluorescent to LED	365	0	N/A	0	$300	$50	N/A	N/A	$50	6.0	0.0
	2	Lighting	Incandescent to LED	105	0	N/A	0	$30	$10	N/A	N/A	$10	3.0	0.0
	3	Envelope	Batt insulation for floor	N/A	N/A	N/A	42	$60,000	N/A	N/A	$1,394	$1,394	43.0	3.1
	4	Envelope	Spray insulation for exterior walls	N/A	N/A	N/A	8	$179,000	N/A	N/A	$249	$249	718.9	0.5
	5	Envelope	Single to double pane windows	N/A	N/A	N/A	11	$102,000	N/A	N/A	$349	$349	292.3	0.7
	6	Heating System Electrification	Dual fuel heat pump for heating	-726	-6	N/A	11	$34,355	-$90	N/A	$373	$283	121.4	0.8
	7	Solar PV	Solar PV on roof	9,980	N/A	N/A	N/A	$25,000	$1,260	N/A	N/A	$1,260	19.8	0.1
Bill Moore Park	1	Heating System Efficiency Upgrade	Split system and programmable thermostats for Fieldhouse 2nd floor	19,500	7	N/A	N/A	$10,500	$2,036	$490	N/A	$2,526	4.2	0.2
	2	Lighting	Fluorescent lights to LED	330	1	N/A	N/A	$1,000	$34	$35	N/A	$69	14.5	0.0
	3	Lighting	Overhead light LED replacements	14,600	60	N/A	N/A	$300,000	$1,524	$4,198	N/A	$5,722	52.4	0.2
	4	Solar PV	Solar PV on field house, concession, batting cage	38,700	N/A	N/A	N/A	$100,000	$4,040	N/A	N/A	$4,040	24.8	0.4
Woodcote Park Washrooms	1	Lighting	Photocell controls for outdoor lighting	250	N/A	N/A	N/A	$800	$34	N/A	N/A	$34	23.5	0.0
	2	Envelope	Install exhaust fans to reduce wasted heat energy	5,933	3	N/A	N/A	$1,000	$802	N/A	N/A	$802	1.2	0.1

Site	No.	Measure Type	Measure Description	Electricity Savings (kWh/yr)	Customer Demand Savings (kW)	BC Hydro Demand Savings (kW)	Fuel Savings (GJ/yr)	Implementation Cost Estimate ($)	Electricity Cost Savings ($/yr)	Demand Cost Savings ($/yr)	Fuel Cost Savings ($/ yr)	Total Cost Savings ($/yr)	Payback (yrs)	GHG Reduction (tonne CO_2-e/yr)
	3	Controls Upgrades	Programmable thermostat for space heating setback	4,756	N/A	6	N/A	$400	$643	N/A	N/A	$643	0.6	0.1
	4	Solar PV	Solar PV in roof	11,400	N/A	N/A	N/A	$28,600	$1,541	N/A	N/A	$1,541	18.6	0.1
Standard Park Washroom	1	Lighting	Interior lighting to LED	30	0	N/A	N/A	$60	$4	N/A	N/A	$4	15.0	0.0
	2	Solar PV	Solar PV on roof	510	N/A	N/A	N/A	$1,300	$69	N/A	N/A	$69	18.8	0.0
Downtown Public Washroom	1	EV Charger Demand Control	EV charger demand control	0	N/A	6	N/A	$2,000	$330	N/A	N/A	$330	6.1	0.0
Martin Park	1	Controls Upgrades	Setback control for space heating	3,350	N/A	1	N/A	$300	$453	N/A	N/A	$453	0.7	0.0
Courtenay Lawn Bowling Club	1	Controls Upgrades	Control ventilation system to occupied hours	24,000	5	N/A	N/A	$2,000	$3,245	N/A	N/A	$3,245	0.6	0.3
	2	Heating System Efficiency Upgrade	Split system for common area and programmable controls	7,100	2	N/A	N/A	$10,500	$960	N/A	N/A	$960	10.9	0.1
	3	Solar PV	Solar PV on roof	1,100	N/A	N/A	N/A	$2,800	$149	N/A	N/A	$149	18.8	0.0
Wolf Lake Aggregate	1	Controls Upgrades	Programmable thermostats for space heating setback control	700	N/A	2	N/A	$500	$95	N/A	N/A	$95	5.3	0.0
	2	Solar PV	Solar PV on roof	6,270	N/A	N/A	N/A	$15,700	$848	N/A	N/A	$848	18.5	0.1
Simms Park	1	Lighting	Existing parking lot lighting to LED	2,000	0	N/A	N/A	$450	$270	N/A	N/A	$270	1.7	0.0
	2	Controls Upgrades	Programmable thermostat for setback control	3,994	N/A	3	N/A	$500	$540	N/A	N/A	$540	0.9	0.0
Chamber of Commerce +	1	Lighting	Existing exterior fluorescent lighting to LED	1,200	0	N/A	N/A	$50	$162	N/A	N/A	$162	0.3	0.0

Site	No.	Measure Type	Measure Description	Electricity Savings (kWh/yr)	Customer Demand Savings (kW)	BC Hydro Demand Savings (kW)	Fuel Savings (GJ/yr)	Implementation Cost Estimate ($)	Electricity Cost Savings ($/yr)	Demand Cost Savings ($/yr)	Fuel Cost Savings ($/ yr)	Total Cost Savings ($/yr)	Payback (yrs)	GHG Reduction (tonne CO_2-e/yr)
Logging Railway Co	2	Lighting	Existing interior fluorescent lighting to LED	1,400	1	N/A	N/A	$800	$189	N/A	N/A	$189	4.2	0.0
	3	Heating System Efficiency Upgrade	Existing baseboard heating to ASHP	5,100	5	N/A	N/A	$10,500	$690	N/A	N/A	$690	15.2	0.1
	4	Solar PV	Solar PV on roof	8,390	N/A	N/A	N/A	$21,000	$1,134	N/A	N/A	$1,134	18.5	0.1
Fire Hall Training Centre	1	Lighting	Existing lighting to LED	45	2	N/A	N/A	$300	$6	N/A	N/A	$6	50.0	0.0
	2	Lighting	Switch off exterior lighting	8,530	2	N/A	N/A	$0	$1,153	N/A	N/A	$1,153	0.0	0.1
Telus Works Yard	1	Controls Upgrades	Unoccupied temperature setback	1,600	0	N/A	N/A	$300	$216	N/A	N/A	$216	1.4	0.0
	2	Solar PV	Solar PV on roof	4,100	N/A	N/A	N/A	$10,300	$554	N/A	N/A	$554	18.6	0.0
Cooperatives Building	1	Controls Upgrades	Setback control for electric space heaters	10,300	N/A	9	N/A	$2,000	$1,393	N/A	N/A	$1,393	1.4	0.1
	2	Controls Upgrades	Setback control for DHW	N/A	N/A	3	N/A	$500	N/A	N/A	N/A	$0	N/A	0.0
	3	Solar PV	Solar PV on roof	50,000	N/A	N/A	N/A	$130,000	$6,760	N/A	N/A	$6,760	19.2	0.6
Marina Building & Café	1	Heating System Efficiency Upgrade	Install Split System for Café Heating	7,800	1	N/A	N/A	$10,000	$1,000	N/A	N/A	$1,000	10.0	0.1
	2	Solar PV	Solar PV on roof	21,000	0	0	N/A	$52,500	$2,800	N/A	N/A	$2,800	20.0	0.2
Total[9]				**365,900**	**64**	**40**	**477**	**$1,448,400**	**$47,495**	**$4,700**	**$6,673**	**$58,868**		**30.0**

[9] Totals exclude Rental House – 210 Anderton Ave, Measure 2, and Trades Building and Storage, Measure 1. These are alternative options to other measures presented in the table above.

7. Implementation and Next Steps

As part of the implementation process, BC Hydro offers funding for different types of measures. A brief description of those next steps is shown in Table 7 below. Applicable programs for the City's portfolio have been added to the table; programs available for industrial customers have been omitted. It is important to note that the incentives offered are subject to change, and available incentives should be confirmed with a BC Hydro Key Account Manager at the time of implementation.

Table 7: Incentives for Identified Measures

Initiative Type	BC Hydro Program	Program Details	Source
Demand Response	Commercial Incentive: Peak Saver	Earn money back ($50 per kW reduced) for reducing electricity usage during demand response events (brief times of high demand on BC Hydro's system).	www.bchydro.com/large-demand-response
	Commercial Incentive: Peak Rewards	Enroll smart devices to be remotely controlled by BC Hydro during periods of high demand.	https://www.bchydro.com/peak-rewards
Distributed Generation	Custom Study	Generate electricity on-site and earn credits for future electricity use or payment from BC Hydro at the end of the year.	www.bchydro.com/self-generation
Energy Efficiency	Energy Study	Fund up to 100% of a feasibility study to find energy efficiency, low carbon electrification and demand response opportunities through an in-depth analysis of options and costs.	www.bchydro.com/feasibility-study
	Commercial Incentive: BESI	Purchase lighting upgrades and/or add-on upgrades for HVAC.	www.bchydro.com/besi
	Commercial Incentive: Custom	Get funding for energy efficiency (2 to 5 ¢ per kWh per year of savings), low carbon electrification (case by	www.bchydro.com/custom-project-incentives

Initiative Type	BC Hydro Program	Program Details	Source
		case basis) and/or demand response upgrades ($50 to $75).	
Low Carbon Electrification	CleanBC Custom/Lite Study*	Provides funding to study and implement opportunities based on technology and GHG emission savings	www.betterbuildingsbc.ca/cleanbc-custom-program
	Commercial Incentive: CleanBC Express*	Supports small electrification measure implementation.	www.betterbuildingsbc.ca/cleanbc-commercial-express-program

*CleanBC Funding is paused as of September 2025 until further notice.

8. Appendices

Appendix	Description
Appendix A	Contact Information
Appendix B	Individual Building Reports

Appendix A: Contact Information

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Appendix B: Individual Building Reports