

# Interior Health Authority 2022-2023 Strategic Energy Management Plan







# Interior Health

*This strategy lays out a solid plan to meet our long-term greenhouse gas emissions reduction targets, while minimizing costs for infrastructure replacement and energy utilities. Co-benefits include improved indoor air quality and increased resiliency to a changing climate. In order to achieve our objectives, the amount of funding, resources, and collaboration with key stakeholders needs to increase substantially, starting now. Effective energy management, targeting emissions reduction, and working together with our partners to achieve co-benefits, is core to Interior Health's overall strategic priorities.*

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*Interior Health would like to recognize and acknowledge the traditional, ancestral, and unceded territory of the seven Interior Region First Nations where we live, learn, collaborate and work together. It is with humility that we continue to strengthen our relationships with First Nation, Métis, and Inuit peoples of the interior.*



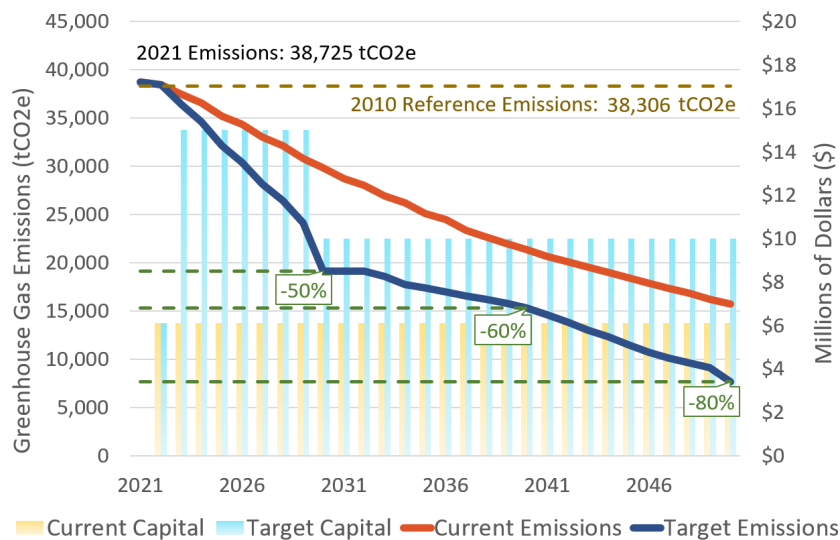
## Executive Summary

This strategic plan provides a situational analysis of current and past energy performance for Interior Health’s portfolio of buildings, outlines actions to control energy costs and reduce greenhouse gas (GHG) emissions, and includes a commitment to work toward alignment with B.C.’s long-term climate goals through 2050. Alignment of this strategic plan with infrastructure renewal plans for existing buildings, delivery of co-benefits such as improved air quality (i.e. humidity levels, ventilation rates affecting carbon-dioxide levels, air filtration), thermal comfort, and increased climate resilience for existing infrastructure are also important considerations.

Effective energy management, targeting GHG emissions reduction, and working together with stakeholders is core to the vision, mission, values, goals, and strategic priorities for Interior Health. This occurs at every level of our organization, from top management to clinical operations and patient care, and is directly affected by facility management & operations staff and the actions of building occupants. Regular consultations occur with the provincial government, BC Hydro, FortisBC, other energy providers, and the communities we serve (such as participating with local communities working on their own climate action plans).

The Province provides financial support and incentives to help meet energy and emissions targets, with incentive programs administered by BC Hydro and FortisBC. Targets set by our utility partners for Interior Health this year are to reduce our energy consumption by 1.5% overall, and they are offering over \$350,000 in incentives to help achieve this goal. While the total floor area for Interior Health’s portfolio of buildings has increased nearly 24% since 2010, the energy used per unit of floor area (energy-use-intensity) has decreased by 8% overall.

The approved capital budget for energy management this year is \$5 million, as well as another \$643,000 for other projects and initiatives, plus salaries and benefits for energy management staff. Capital budgets support larger Carbon Neutral Capital Program (CNCP) projects aimed at reducing building emissions, and include funding from the Ministry of Health and Regional Hospital Districts.



There is still a long way to go in order to meet B.C.’s target for public sector buildings of a 50% reduction by 2030, requiring further emissions reductions of 20,000 tCO2e.

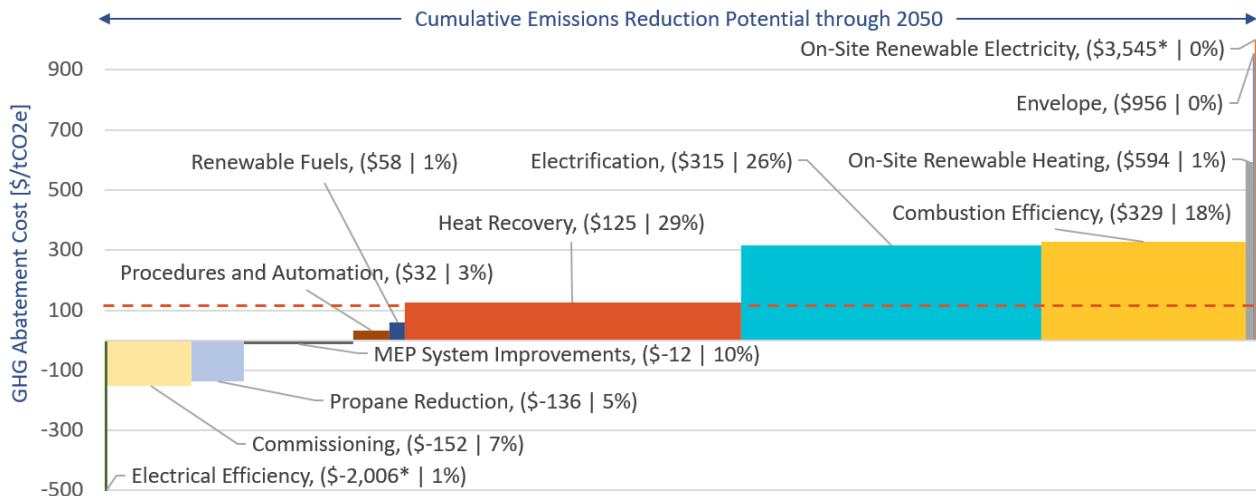
While significant progress has already been made toward this goal, it will become increasingly challenging to further reduce emissions in the future, as some of the best opportunities are exhausted.

By 2050, emissions are to be reduced by 80%. With the current capital budget allotment for CNCP projects, Interior Health will not meet the provincial targets for emissions reduction, as depicted by the **Current Emissions** line in the figure on the previous page.

By 2025, we will fall short of the target by ~6,000 tCO<sub>2</sub>e unless more money is available. Approximately \$15 million will be required per year, beginning in fiscal year 2023-24 in order to meet the targets, and that funding level will need to be maintained annually through fiscal year 2029-30.

Year	Projected Energy Use Intensity [kWh/m <sup>2</sup> ]	Projected Electricity Ratio [%]	Projected Emissions [tCO <sub>2</sub> e]	Target Emissions [tCO <sub>2</sub> e]	Gap from Target Pathway [tCO <sub>2</sub> e]
2021	487	40%	38,725	-	-
2022	483	40%	38,125	36,550	1,575
2023	478	41%	37,425	34,375	3,050
2024	473	41%	36,725	32,201	4,524
2025	468	42%	36,000	30,026	5,974

The figure below explains our planned approach to carbon emissions reduction moving forward, and is showing a Greenhouse Gas Abatement chart. The vertical axis of the chart shows the cost in \$ per tCO<sub>2</sub>e to abate (i.e. reduce or avoid) one tonne of GHG emissions over the lifetime of a measure, for twelve common types of measures used to reduce energy and emissions in buildings. The cost is expressed in terms of its Net Present Value in today’s dollars, and can be negative (savings) or positive (costs). The horizontal axis of the chart shows the potential of each type of measure for meeting our emissions reduction targets, expressed in percent (%) of cumulative emissions reduction between now and 2050.



Three objectives and key results are fundamental to meeting provincial targets for emissions reduction, while ensuring the financial sustainability of operations: i) Reduce the average energy-use-intensity in our buildings by 30%; ii) Switch heating sources from fossil fuels to electricity such that 60% of overall energy use is from clean electricity sources; and iii) Improve the financial performance of energy projects such that all projects are break-even or better; by 2030.



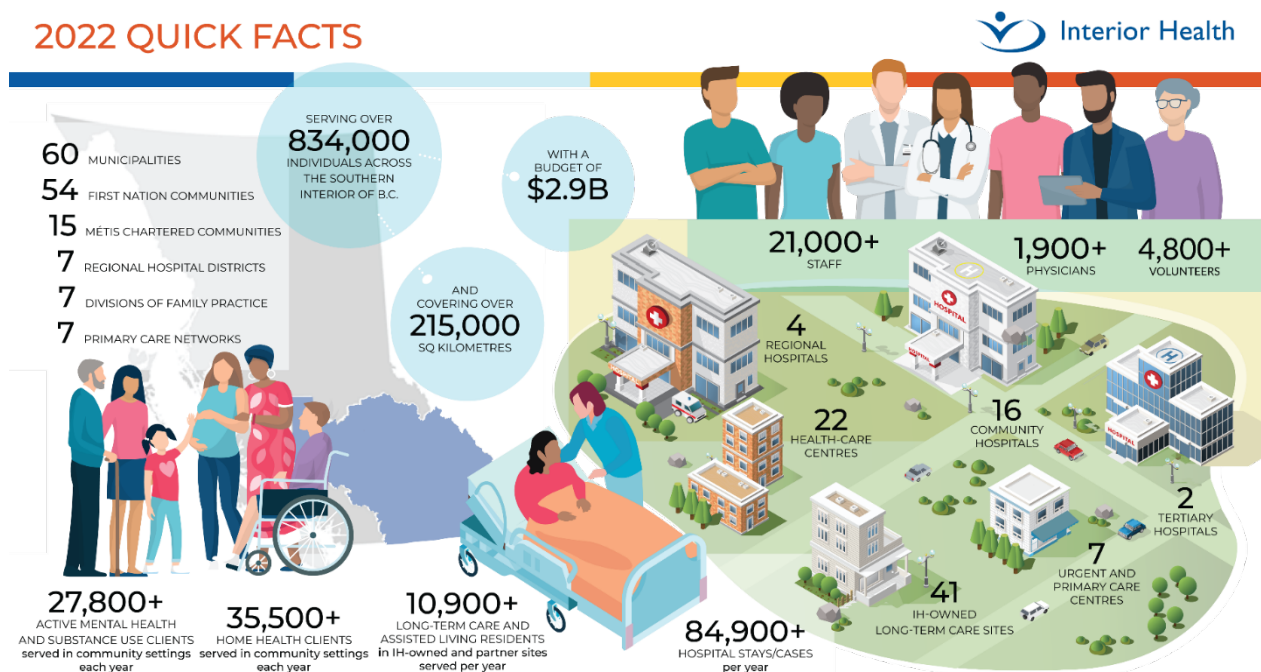
## Contents

<b>1.</b>	<b>Introduction and Commitment .....</b>	<b>1</b>
1.1.	Provincial Mandate .....	1
1.2.	Interior Health’s Commitment .....	3
1.3.	Organizational Structure .....	3
<b>2.</b>	<b>Situational Analysis .....</b>	<b>4</b>
2.1.	Stakeholders.....	5
2.2.	Building Portfolio, Energy, and Emissions .....	5
2.3.	Energy Management Budget and Project Funding .....	9
2.4.	Project Prioritization .....	10
<b>3.</b>	<b>Taking Action .....</b>	<b>11</b>
3.1.	Energy Studies.....	13
3.2.	Operating Projects .....	13
3.3.	Carbon Neutral Capital Program (CNCP) Projects .....	14
<b>4.</b>	<b>SEM Review and Conclusions .....</b>	<b>16</b>
4.1.	Energy Management Assessments .....	17
4.2.	Aligning with Provincial Mandate .....	18
	<b>Appendix A – Organizational Chart .....</b>	<b>I</b>
	<b>Appendix B – Stakeholder Engagement Plan .....</b>	<b>II</b>
	<b>Appendix C – Energy Use and Carbon Intensities .....</b>	<b>III</b>
	<b>Appendix D – Project Plan Metrics .....</b>	<b>V</b>
	<b>References .....</b>	<b>VII</b>

## 1. Introduction and Commitment

This Strategic Energy Management Plan (SEMP) lays out the vision for the next 3 to 5 years across our building portfolio, and identifies goals and objectives to be achieved in the future. Energy management involves the application of engineering and economic principles to control energy costs and associated greenhouse gas (GHG) emissions while providing needed services in buildings and across the organization. Energy savings can be realized through energy conservation, improving energy efficiency, changing patterns of energy use, or by shifting to other sources of energy. Following best practices for operation and maintenance, engaging with building occupants about energy conservation, and investing in new and innovative technologies to improve energy performance and reduce the consumption of fossil fuels, results in lower energy costs and emissions.

Energy management projects, initiatives, and engagement align with Interior Health’s strategic priorities including Population Health, taking action on Climate Change, contributing to Financial Sustainability, and balancing capital investment with long-term performance<sup>1</sup>. Interior Health prioritizes investments that help manage energy costs and reduce emissions, while at the same time renew aging infrastructure and achieve other co-benefits such as improved indoor air quality and thermal comfort for building occupants. Refer to **Figure 1** below for some Quick Facts about Interior Health.



**Figure 1: Quick Facts about Interior Health**

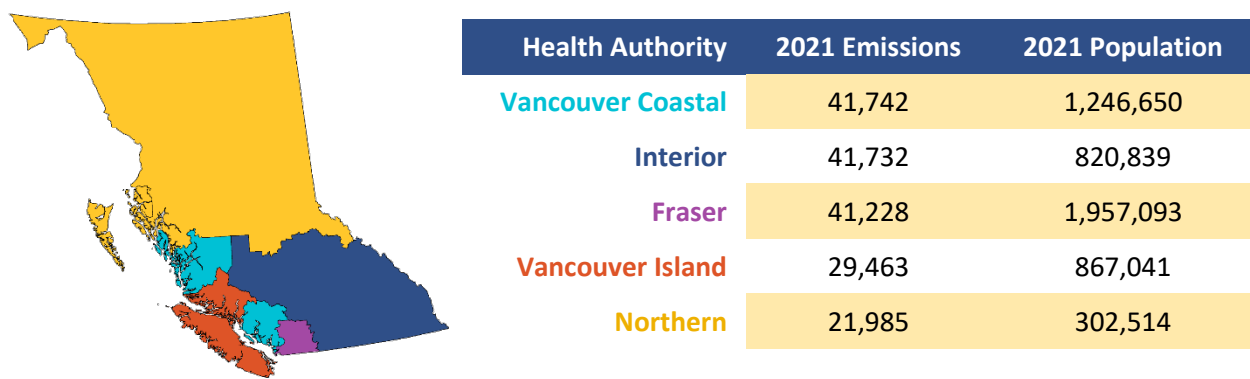
### 1.1. Provincial Mandate

As a public sector organization (PSO) and one of the five regional health authorities in British Columbia (B.C.), the provincial government mandates us through various legislative and regulatory requirements to achieve specific performance metrics including service delivery levels, public health outcomes, and to align with a building emissions reduction target of 50% by the year 2030, from 2007 levels.

Since 2010, B.C. has achieved carbon neutral operations across health authorities, school districts, post-secondary institutions, crown corporations, and the provincial government. PSO's report to the government their annual GHG emissions related to Stationary Emissions, Mobile Emissions, and Office Paper.<sup>ii</sup> Every year Interior Health pays to the provincial government \$25 per tonne of carbon-dioxide equivalent emissions, which is then applied for through the Carbon Neutral Capital Program (CNCP) to get back and use to fund projects that achieve emissions reduction.

This SEMP lays out a plan to cut Stationary Emissions. Plans to reduce Mobile and Office Paper emissions are being led by others in the organization. Electrification of Interior Health's fleet vehicles, as well as any public charging stations installed at and supplied from Interior Health's facilities, will add further to building energy use and emissions related to electric vehicle charging.

For the 2021 reporting year (the most recent data available), B.C.'s PSOs generated 737,017 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) from their operations. Since 2010, public sector emissions from buildings have decreased by 14%. Buildings account for about 10% of the province's GHG emissions, and about 95% of Interior Health's reported emissions. Therefore decarbonizing our buildings through energy conservation measures can go a long way toward helping Interior Health and the Province achieve their GHG emissions reduction targets. **Figure 2** lists the five regional health authorities along with their 2021 emissions (in tCO<sub>2</sub>e), ranked from highest to lowest emissions.<sup>iii</sup>



**Figure 2: B.C. Regional Health Authorities**

While the B.C. public sector is making progress in reducing emissions, further action is needed to achieve the CleanBC 2030 public sector emission reduction target of 50% reduction from public buildings compared to 2010 levels. The CleanBC Roadmap to 2030 includes the following new measures:

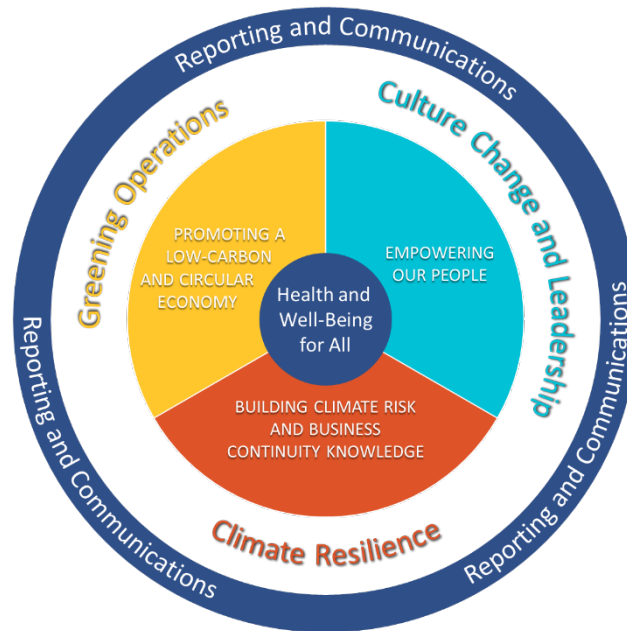
- Beginning in 2023, B.C.'s carbon tax will meet or exceed federal carbon price requirements
- Implementation of a 100% Clean Electricity Delivery Standard for the BC Hydro grid
- Implementation of a greenhouse gas (GHG) cap for natural gas utilities – limiting emissions from the gas used to heat our buildings – will encourage new investment in low-carbon technologies and fuels (including renewable natural gas and hydrogen) and energy efficiency
- By 2030, all new buildings to be zero carbon, and all new space and water heating equipment will meet the highest standards for efficiency (at least 100% efficient)<sup>iv</sup>

## 1.2. Interior Health’s Commitment

Interior Health is committed to being accountable to the public we serve. Caring is at the heart of who we are. For over twenty years, we’ve been working and partnering for the health and wellbeing of everyone in the B.C. Interior - over 834,000 people. So we can all enjoy a healthier tomorrow.

Interior Health’s Environmental Sustainability Policy is to take proactive steps to reduce the organization’s ecological footprint by implementing a Triple Bottom Line approach to decision making. This means that economic, environmental, and social factors are all considered. This includes taking action by transforming operations to ensure they are sustainable and mindful of the environment<sup>1</sup>.

Figure 3: Environmental Sustainability Infographic



Interior Health has annual energy targets set by contracts with utility partners BC Hydro and FortisBC. For the current contract year, these are shown in **Table 1**. Achieving these targets will result in an energy reduction of 5,368,000 kilowatt-hours, 93% of which is a reduction of natural gas, and 7% is electricity. This represents a reduction of approximately 1.5% of Interior Health’s total annual energy consumption.

Table 1: FY2022/23 Utility Energy and Incentive Goals

BC Hydro		FortisBC	
Electricity Conservation	500,000 kWh	Electricity Conservation	168,000 kWh
Low Carbon Electrification	300,000 kWh	Natural Gas Conservation	18,000 GJ (5,000,000 kWh)
N/A		Electricity Incentive Goal	\$30,000
N/A		Natural Gas Incentive Goal	\$326,000

kWh = kilowatt-hour; GJ = gigajoule; 1 GJ = 277.78 kWh

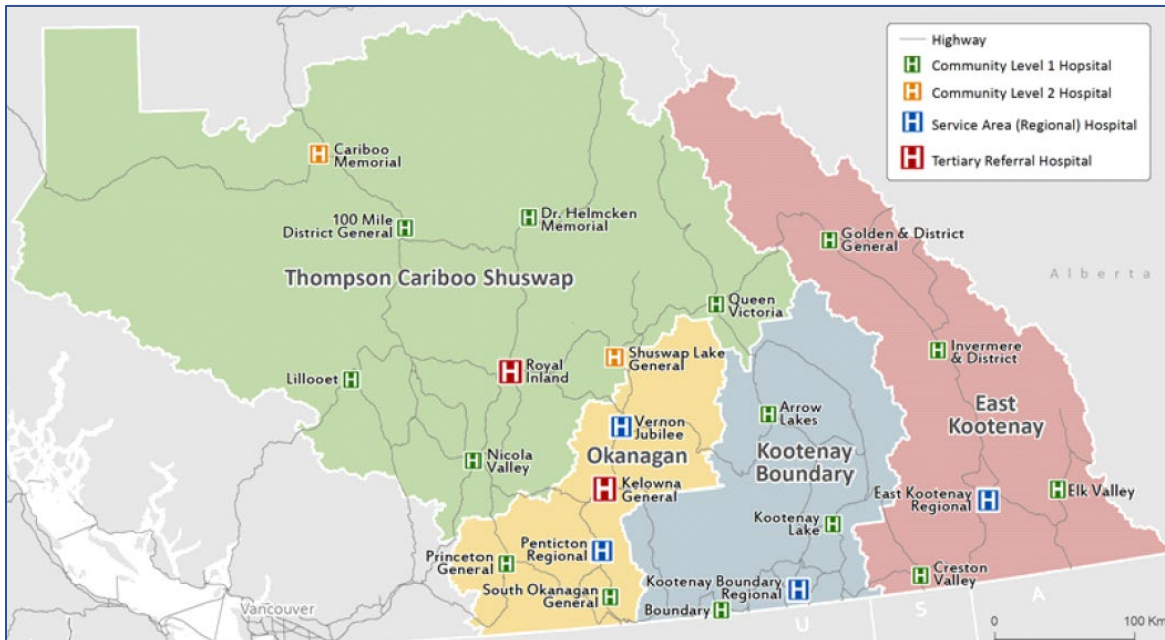
## 1.3. Organizational Structure

The Energy Management Team reports to the Director of Plant Services within the Facilities Management and Operations (FMO) department, and works closely with Plant Managers, P3 Operations, Environmental Sustainability, Parking & Fleet Services, and Commercial Operations teams, to deliver results across Interior Health. Capital Finance, the Chief Project Officer and Capital Project Managers, help to plan and deliver energy management and emissions reduction projects. Refer to **Appendix A – Organizational Chart** for more information.



The Energy Management Team includes four positions: an Energy Coordinator (partially funded by BC Hydro); an Energy Specialist and Thermal Energy Manager (both partially funded by FortisBC); and an Energy Analyst (fully funded by Interior Health).

Interior Health's service area is divided into four regions as shown in **Figure 4**. Facilities within each region are operated by a Plant Manager with a team of supervisors, power engineers and tradespersons. Hospitals in Kamloops, Kelowna, Penticton, and Vernon are operated through a Public-Private-Partnership (P3) arrangement, with a private partner providing services. P3 hospitals are overseen by a team of Interior Health managers and technical leads, working closely with the private operators.



**Figure 4: Interior Health Regions**

## 2. Situational Analysis

An in depth understanding of our stakeholders, our facilities' energy-consuming systems, and opportunities for energy/emissions avoidance are fundamental to developing a successful SEMP. Comprehending our current portfolio of buildings is a foundation for this understanding. Historical data helps us understand the significance and success of our actions. Future projections provide direction with expectations for resource requirements, operating costs, and investment.

Aggressive provincial emissions reduction targets, a wide geographic region, an aging portfolio of buildings, and limited operational and capital funding within a rapidly escalating market are all challenges that must be considered. Furthermore, healthcare systems and operations that enable Interior Health patient care efforts are inherently energy and carbon intensive.

Interior Health endeavors to work together with our stakeholders to find innovative solutions that enable us to advance from our current pathway to a target pathway that aligns with provincial commitments. A key step to achieve this alignment was developing a long-term greenhouse gas emissions model and associated report<sup>v</sup> that provides Energy Management program guidance by:

- Defining and evaluating pathways such as Deep Retrofits, Electrification, and Renewables
- Defining categories of Energy Conservation Measures (ECMs) and potential emissions reduction
- Referencing Interior Health projects, estimates, and studies to quantify ECM performance
- Generating an optimized pathway that informs what ECM categories should be invested in and when, to align with provincial commitments with the most favorable economic performance

### 2.1. Stakeholders

Key stakeholders to be involved in strategic energy management planning are those having a significant impact on, or a vested interest in the success of the SEMP (refer to *Provincial Mandate* and *Interior Health’s Commitment* in Sections 1.1 and 1.2 respectively). Refer to *Appendix B – Stakeholder Engagement Plan* for a detailed list of internal and external stakeholders, engagement strategies and communications mediums, as well as the frequency that each strategy is put into practice.

**Internal stakeholders** know the strengths and weaknesses of the organization, understand what can hinder success, and have first-hand knowledge of what it takes to deliver. Effective energy management occurs at every level of our organization, from top management to clinical operations and patient care, and is directly affected by facility management & operations staff and the actions of building occupants.

**External stakeholders’** opinions and insights are especially valuable in the early stages of planning when they can add their perspective to the understanding of the operating environment, as well as to the organization’s future. Regular consultations occur with the provincial government, BC Hydro, FortisBC, other energy providers, and there are often engagement opportunities with the communities we serve.

### 2.2. Building Portfolio, Energy, and Emissions

Historical data, an in depth understanding of our current portfolio of buildings, and modelling of future projections of energy use, emissions, and utility costs inform strategic energy management decisions, and ultimately determine positive project outcomes. Interior Health reports annually on energy consumption and greenhouse gas emissions from 230 facilities of various types.

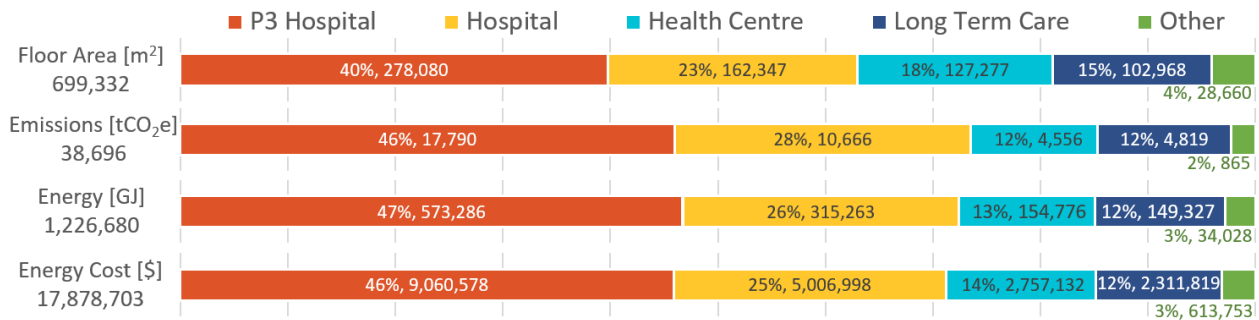
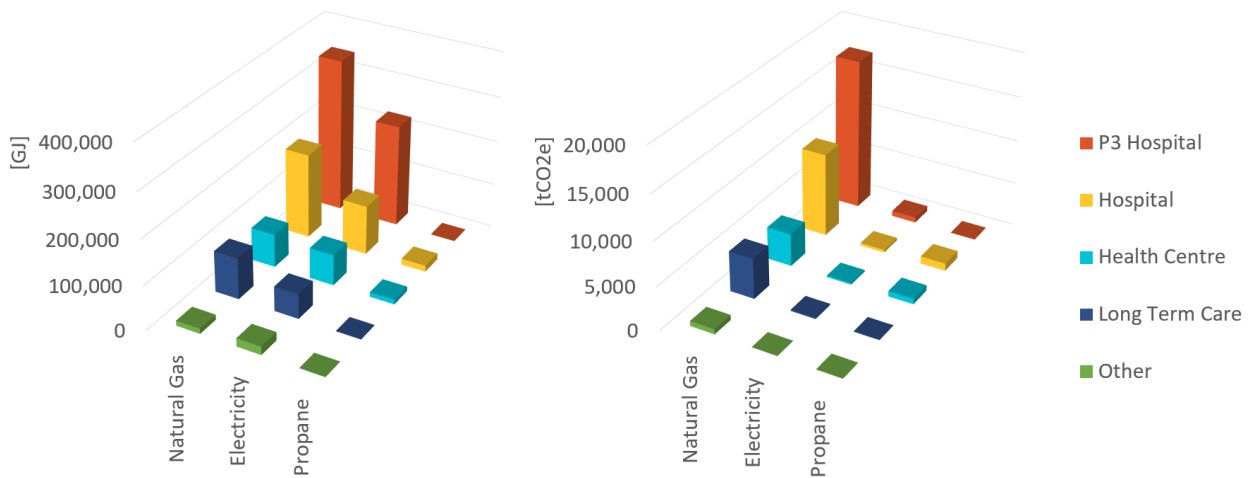


Figure 5: 2021 Performance Metrics by Facility Type

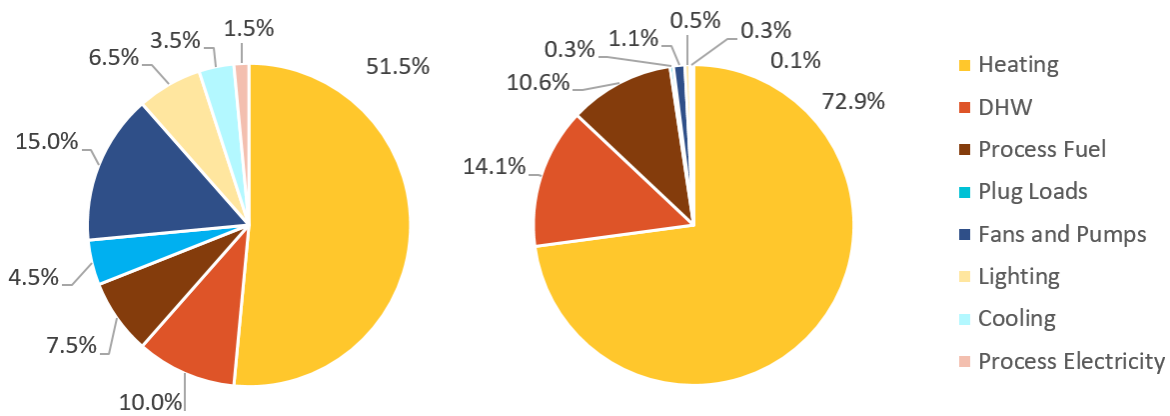
Departments responsible for the operation of energy consuming systems and/or related coordination include Plant Services, P3 Operations, and Commercial Operations; leased facilities account for 9% of floor area, 4% of building emissions, 5% of building energy use, and 6% of building energy costs.

A key motivator for improving energy performance is reducing greenhouse gas (GHG) emissions from our large portfolio of buildings, which results in approximately 95% of Interior Health’s total reported emissions. As shown in **Figure 6**, the dominant source of GHG emissions is natural gas, particularly from hospitals. Emissions from our vehicle fleet and office paper together account for the remaining 5%.



**Figure 6: 2021 Energy Use (Left) and Emissions (Right) by Facility Type and Consumption Category**

Electricity powers plug-loads, lighting, and mechanical systems, costing \$0.09 per kWh (\$25.95 per GJ), and is very clean at just 2.694 kgCO<sub>2</sub>e/GJ. Natural gas is the primary heating fuel for the majority of our facilities at \$9.72 per GJ, and is emissions intensive at 49.87 kgCO<sub>2</sub>e/GJ. Propane is a common alternative heating fuel where natural gas service is not available; the fuel is expensive at \$28.40 per GJ and more emissions intensive at 61.15 kgCO<sub>2</sub>e/GJ. **Figure 7** shows energy and emissions distribution for typical facility; the charts do not align with our portfolio average, which is skewed by our large P3 Hospitals.

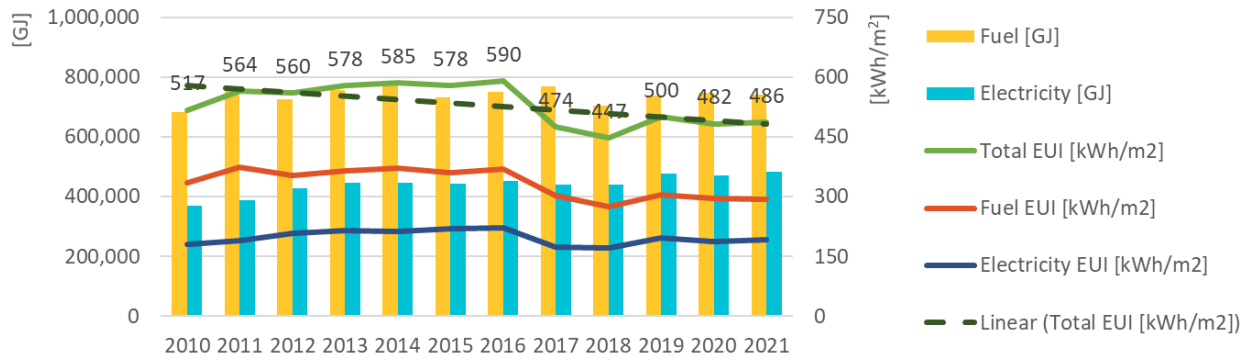


**Figure 7: Energy Use (Left) and Emissions (Right) by End Use**

Building energy and emissions performance can be compared by calculating the energy use intensity (EUI) and carbon intensity (CI). In this context, ‘Carbon’ refers to greenhouse gas emissions, which are typically expressed as ‘carbon-dioxide equivalent’ emissions. EUI is the amount of annual energy used per unit of building floor area served; generally, lower numbers are better. Similarly, CI is emissions per



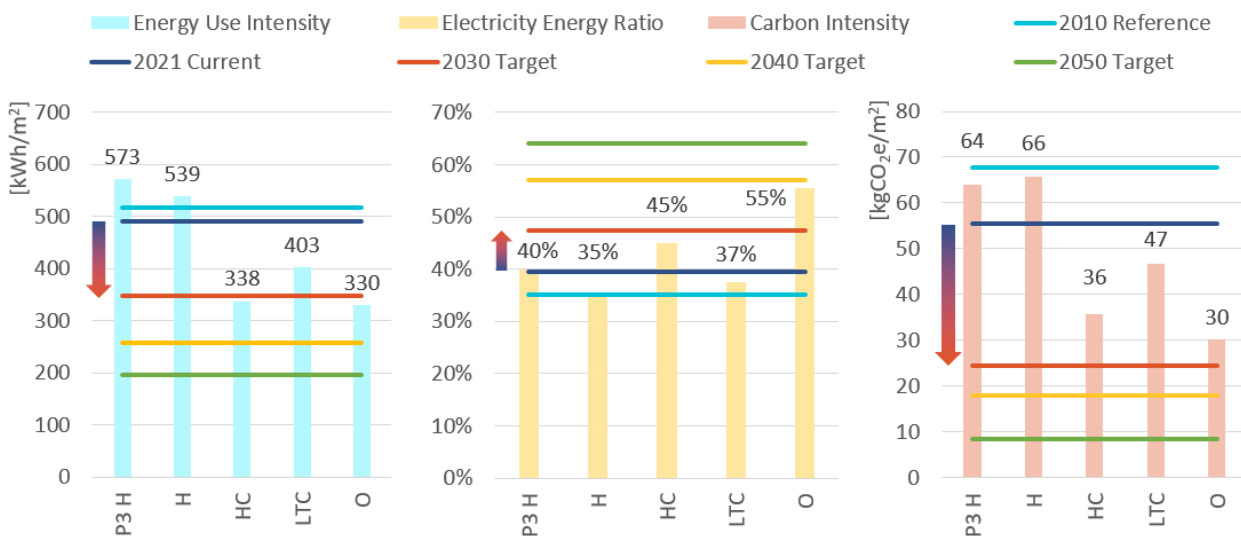
unit floor area; floor area has grown by nearly 24% over the past decade, to 699,332 m<sup>2</sup> in 2021 from 565,580 m<sup>2</sup> in 2010. The decline in EUI of 6% depicted in **Figure 8** demonstrates the progress we have made with Energy Projects (refer to Section 3: **Taking Action**).



**Figure 8: Interior Health Portfolio-Wide Historical Energy Use and Intensity**

Since 2010, increased fuel consumption has been limited to 8%. This is largely due to new construction and energy projects that have prioritized fossil fuel avoidance. Electricity has increased more significantly, by 31%, due to low carbon electrification projects. Overall, EUI has decreased by 31 kWh/m<sup>2</sup>, Electricity Energy Ratio has increased by 5% (the proportion of electrical energy to total energy use), and CI has decreased by 7 kgCO<sub>2</sub>e/m<sup>2</sup> (a 12% reduction when applying current emissions factors).

**Figure 9** shows 2021 performance metrics by facility type, compared to what the portfolio average would need to be by each target year, looking forward to 2050. Progress to date on long term goals during the past 11 years is indicated by the vertical gaps between **2010 Reference** and **2021 Current**; further progress required over the next 8 years to achieve 2030 targets is shown by the vertical arrows.



**Figure 9: Energy Use Intensity, Electricity Energy Ratio, and Carbon Intensity by Facility Type**

**P3 H: P3 Hospital, H: Hospital, HC: Health Centre, LTC: Long Term Care, O: Other**



Although all metrics are trending in the right direction, progress is lagging compared to what is required to meet 2030 targets; EUI must decrease by ~140 kWh/m<sup>2</sup>, Electricity Energy Ratio must increase by ~8%, and CI must decrease 31 kgCO<sub>2</sub>e/m<sup>2</sup>. **Appendix C – Energy Use and Carbon Intensities** provides metrics at specific facilities within Interior Health’s Portfolio for the highest energy consumers and emitters. **Table 2** details performance metrics and targets through 2050; listing metrics for past years based on historical data and future years based on aligning with provincial targets.

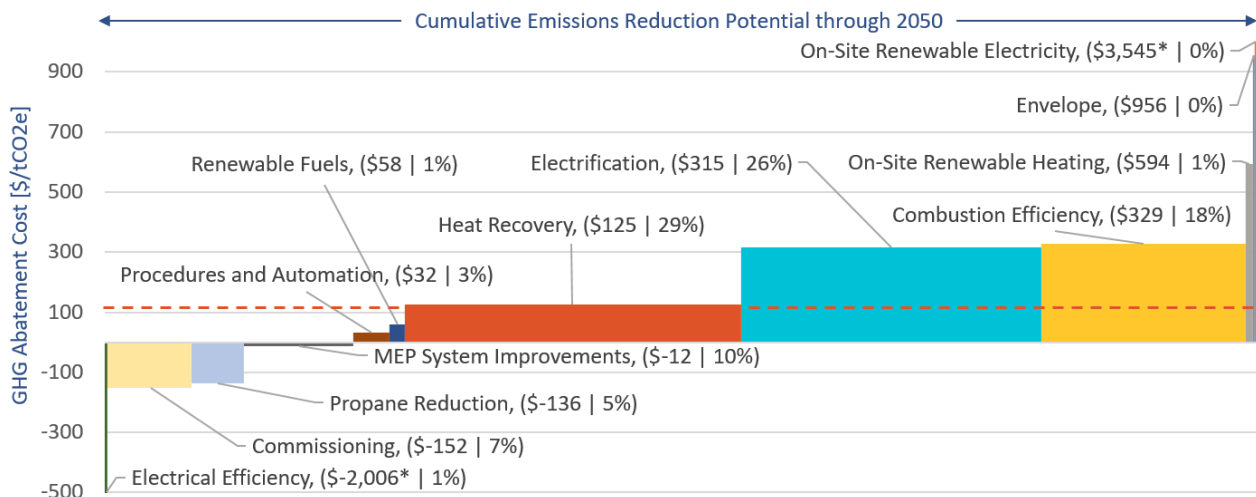
**Table 2: Target Energy and Emissions through 2050**

Year	Building Area [m2]	Emissions [tCO <sub>2</sub> e/year]	Electricity [GJ/year]	Fossil Fuels [GJ/year]	Energy and Carbon Costs [\$ /year]
2010	565,580	38,306	369,220	683,509	14,586,035
2021	699,332	38,725	483,694	740,546	20,666,945
2030	785,000	19,153	524,620	377,177	22,968,870
2040	854,784	15,322	475,953	302,658	23,289,843
2050	918,024	7,661	470,199	149,055	25,364,809

Model parameters and assumptions (e.g. floor area increases aligned with population at 1.2% per year<sup>vi</sup>) were determined through research and stakeholder engagement. Practical limits (e.g. heat recovery capacity), and resource constraints (e.g. funding, staffing, utility availability) were also considered. **Figure 10** summarizes modeling results.

The vertical axis is the net present value of all capital and operational costs, that would occur to avoid one tonne of GHG emissions over the lifetime of a measure. This could be a negative value, indicating avoided cost or savings; or a positive value, which would mean that Interior Health is incurring additional costs to reduce our carbon footprint.

The horizontal axis is the emissions reduction; wider categories indicate greater emissions reduction. Between now and 2050, the target pathway would reduce approximately 620,000 tCO<sub>2</sub>e of cumulative emissions compared to making no targeted investment. The area of each category represents net total investment or savings for each type of measure.



**Figure 10: GHG Abatement Cost Curve**

The majority of our emissions result from fossil fuels combusted to serve low temperature heating loads; temperatures are within the operating range of heat pumps that are up to four times more efficient than boilers, and driven by low carbon electricity. As a result, **Figure 10** shows significant potential for heat recovery and electrification.

Economics suggest starting with measures on the left, then working our way across. However, this is neither logistically reasonable, nor would it allow us to achieve shorter-term targets. Therefore, plans (refer to section **3: Taking Action**) moving forward target various categories each year.

The model currently includes the \$50/tCO<sub>2</sub>e provincial carbon tax. Our province is expected to (at least) match the federal carbon tax increases incrementally each year, until it hits \$170/tCO<sub>2</sub>e in 2030 (shown with the dotted line). As the carbon tax increases, financial performance of some categories would improve significantly making some measures perform very well (e.g. heat recovery, electrification).

### 2.3. Energy Management Budget and Project Funding

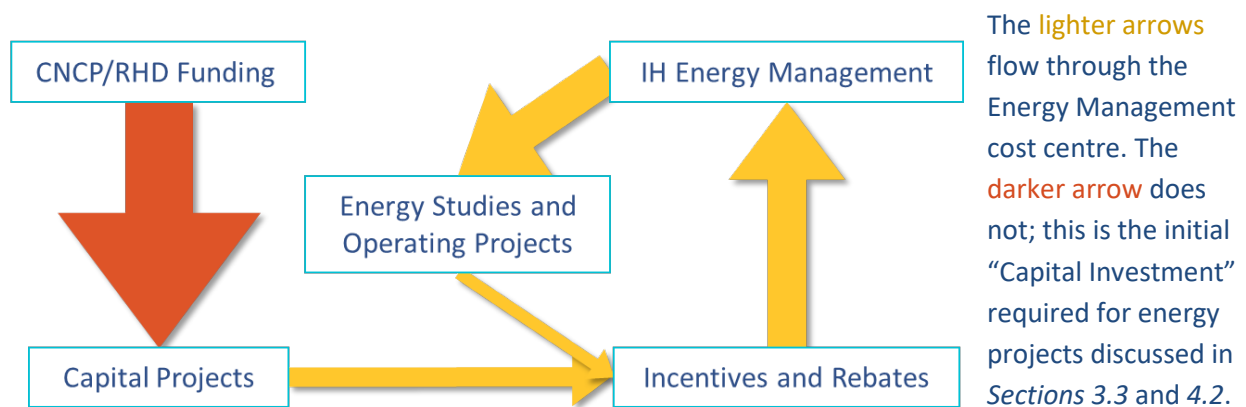
Interior Health's Energy Management team works with internal Business Consultants to define the annual budget at the beginning of each fiscal year (FY), with estimates for the following year. The budget is funded through a unique version of a green revolving fund<sup>vii</sup> that has **two key components**.

**Table 3: Fiscal Year Budgets for Energy Management Cost Centre**

Fiscal Year	Project Incentives	Consulting Services	Operating Projects	Engagement and Expenses	Other, Non-EM
<b>FY2022/23 (Approved)</b>	+\$742,771	-\$179,134	-\$435,817	-\$28,020	-\$99,800
<b>FY2023/24 (Estimated)</b>	+\$400,000	-\$100,000	-\$200,000	-\$25,000	-\$75,000

The **first** allocates energy project utility cost avoidance to our base budget, which covers employee compensation and overhead for the three positions currently paid through the Energy Management Cost Centre. Two positions are also partially funded by local utility companies; \$50k is received from BC Hydro through the Energy Manager Program and \$60k from Fortis BC through the Energy Specialist Program.

The **second** is shown in **Figure 11**. Capital project funding, (~\$6.1M total per year), is obtained through the Carbon Neutral Capital Program (CNCP) (~60% of total) and the respective Regional Hospital Districts (RHD) (~40% of total). Interior Health submits applications to the Ministry of Health for CNCP project funding (refer to section **1.1**); this program is intended to cover the incremental costs associated with reducing carbon emissions. RHD funding is allocated to the same projects, which is intended to cover critical infrastructure renewal and life-cycling costs.



**Figure 11: Energy Management Funding Map**

Energy Management guides Energy Studies, Operating Projects, New Construction, and Capital Projects through additional local, provincial<sup>viii</sup>, and/or federal<sup>ix</sup> programs, such as those administered by BC Hydro<sup>x</sup> and Fortis BC<sup>xi</sup>. These programs generate project incentives and rebates that can be used in the following fiscal year (typically ~\$400K per year but varies with project implementation and program offerings; this was higher than average in FY2022/23 due to New Construction Incentives from the Royal Inland Hospital Patient Care Tower). The Energy Management budget also includes transfers to other departments within Interior Health that support Energy and Environmental Sustainability.

### 2.4. Project Prioritization

Interior Health completes annual prioritization exercises for Energy Studies, Energy Management funded Maintenance Improvement Projects (MIPs), and CNCP funded Capital Projects. Each exercise follows the same consistent framework, based on both quantitative and qualitative factors.<sup>xii</sup> For each alternative being prioritized, Parameters are assigned a score based on pre-defined criteria. The Parameter scores are then weighted and summed to determine an overall rank. The highest ranked alternatives proceed.

**Table 4: Energy Study Prioritization Summary**

Energy Study Prioritization Parameter	Weight
<b>Energy Use (GJ)</b> (electricity and heating fuel)	15%
<b>Energy Intensity (kWh/m<sup>2</sup>)</b> (energy use per unit floor area)	15%
<b>Carbon Emissions (tCO<sub>2</sub>e)</b> (from utilities only)	20%
<b>Emissions Intensity (tCO<sub>2</sub>e/m<sup>2</sup>)</b> (emissions per unit floor area)	20%
<b>Cost Intensity</b> (utility cost per unit floor area)	30%
<b>Manual Adjustment</b> (unique/site specific influencing factors)	N/A

Cost estimates for future years are based on the desired Energy Study type and size of the facility, as defined in the prioritization framework<sup>xiii</sup>. Quotes/proposals are obtained before budget approval for the current fiscal year. Energy Studies detail the energy, emissions, and financial performance of each Energy Conservation Measure (ECM); ECMs are evaluated and grouped into MIPs or CNCP projects.

Methodology including parameters, weightings, and criteria differ due to the types of ECMs evaluated, resources for implementation, funding amounts, and funding sources.

**Table 5: Operating and Capital Project Prioritization Summary**

Energy Conservation Measure Prioritization Parameter	MIP Weight	CNCP Weight
<b>Simple Payback</b> (years)	40%	N/A
<b>GHG Abatement Cost</b> (1 <sup>st</sup> year)	25%	N/A
<b>Maintenance Alignment</b> (replaces/upgrades demanding or failed equipment)	15%	N/A
<b>GHG Abatement Cost</b> (Lifetime NPV)	N/A	50%
<b>Long-term Alignment</b> (asset renewal, future projects, facility life)	N/A	25%
<b>Impact on Occupants</b> (indoor air quality, work environment, thermal comfort)	10%	10%
<b>Ease of Implementation</b> (demand/disruption on plant services/clinical staff)	10%	15%
<b>Manual Adjustment</b> (unique/site specific influencing factors, mutual exclusivity)	N/A	N/A

Preliminary project cost estimates for future years are based on scaled consultant cost estimates. For Operating Projects, vendor quotes and/or internal estimates are completed before budget approval. Capital Projects, not funded by Energy Management, require both Capital Budget and CNCP approvals.

### 3. Taking Action

Improving the energy performance of existing buildings requires significant resources (people and capital dollars) to implement energy conservation measures, ranging from simple behavior change, to whole building retrofits and the addition of renewable energy sources. As with most things that are worth doing, it takes both time and money to implement positive changes.

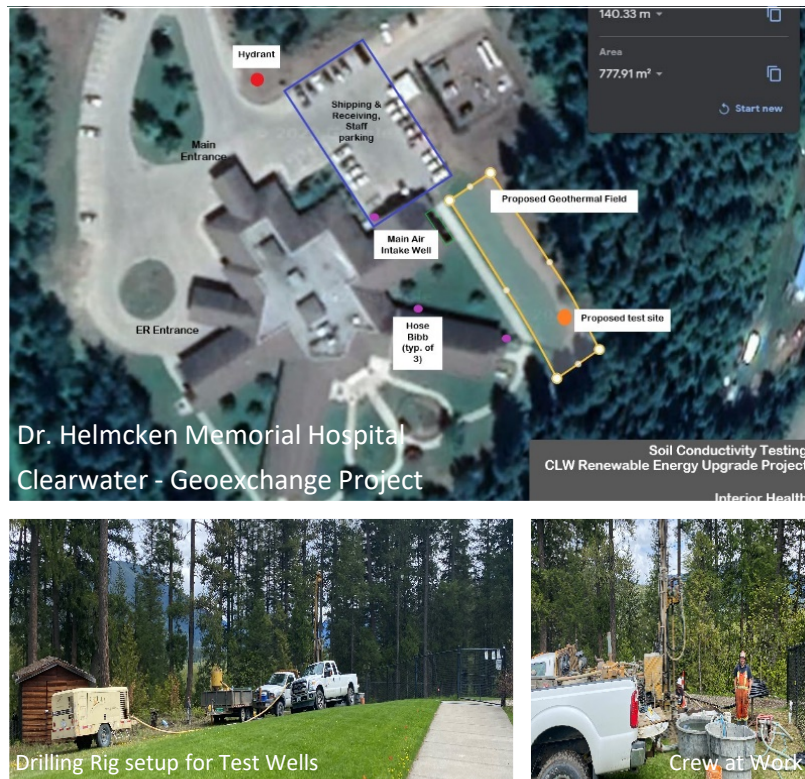
Engaging with staff has been an effective strategy for improving energy performance. BC Hydro, in partnership with FortisBC, offer support for organizations to engage with their staff around energy management. The Energy Wise Network is a community of leaders who are passionate about sustainability and engaging people at their organization to reduce energy and use resources wisely. The Energy Wise program helps with campaigns to encourage people to reduce energy use by offering a variety of tools, resources and ideas. Organizations have access to training, networking opportunities, campaign toolkits, customized coaching and incentive funding.

The Energy Management Team collaborates with Capital Planning and Projects, and local Plant Services project coordinators, to deliver energy management projects across Interior Health facilities. This includes identifying new opportunities, helping to draft the project scope, review of preliminary and detailed designs, commissioning support, facilitating utility incentive program applications, and measurement & verification of energy performance results. By working closely together, this results in improved project outcomes and increased savings.

Similarly, all new buildings that are constructed are required to meet more stringent building and energy codes than in the past. In addition, energy and carbon targets can be set to further improve the energy performance of newly constructed buildings, and reduce GHG emissions.



**Figure 12** shows some of the preparatory work for a low-carbon electrification project using geothermal energy at Dr. Helmcken Memorial Hospital in Clearwater, a CNCP project that was started in 2022.



**Figure 12: Geo-Exchange CNCP Project - Dr. Helmcken Memorial Hospital**

An Energy Conservation Measure (ECM) is a generic term that could apply to any initiative that helps manage or reduce the energy consumed in a facility. ECMs can be grouped into one of the following three categories, which are listed generally by order of priority from the highest value for investment to the lowest:

- 1) **Energy Conservation:** means reducing the energy needed to support operations by reducing the amount that is wasted (e.g. reduce the amount of ventilation and adjust temperatures when spaces are unoccupied, occupancy control of lighting, sealing around windows and doors to prevent air infiltration and exfiltration).
- 2) **Energy Efficiency:** means replacing older equipment with more energy efficient equipment, or adding equipment to increase the energy efficiency of existing systems (e.g. LED lighting retrofits, heating boiler replacements with more efficient models, adding heat recovery equipment to existing heating, ventilation, and air conditioning (HVAC) systems).
- 3) **Renewable Energy:** means adding renewable energy sources to reduce or offset the amount of energy used that is produced from fossil-fuel sources (e.g. solar heating or photovoltaic (i.e. electricity generating) panels, electrifying heating sources using geo-thermal and air- or water-source heat pumps, purchasing renewable natural gas or green hydrogen).

### 3.1. Energy Studies

Energy studies identify opportunities at our facilities, including a preliminary definition of scope, energy performance outcomes, and the estimated cost for implementation. The type of energy study can vary depending on the facility size, equipment condition and age, applicable utilities, the ratio of electricity use compared to overall energy use, climate zone, and the configuration of various buildings systems.

When existing equipment fails, such as at the end of its expected service life, instead of replacing with like-for-like equipment, it is often beneficial to conduct an energy study to determine a long-term and more holistic plan. Interior Health has also been piloting portfolio-wide evaluations of specific technologies, such as heat recovery chillers, the use of hydronic additives to increase heat transfer efficiency, and building voltage regulation. This approach differs from evaluating a single facility for various opportunities, and can result in cost effective solutions that may be deployed across multiple facilities with similar characteristics. Based on the prioritization exercise described in section 2.4, energy studies planned over the next three years are listed in *Table 6*.

**Table 6: Energy Study Plans**

Facility	Budget	Energy Study Type
<b>FY2022/23 Plans and Cost Estimates</b>		
Ashcroft Hospital & Health Centre Overlander Extended Care Queen Victoria Hospital	Studies paid by Utilities	BC Hydro and Fortis BC Continuous Optimization
The Gateby Care Facility	\$16,000	ASHRAE Level 2 Audit
Kelowna General Hospital	\$27,000	Low Carbon Electrification
Kelowna General Hospital	\$12,000	Occupancy Control Ventilation
Kootenay Boundary Hospital	\$60,000	Venturi Steam Trap Measurement & Verification
Kootenay Lake Hospital	\$18,000	Building Voltage Regulation
Penticton Regional Hospital	\$30,000	ASHRAE Level 1 Audit
Royal Inland Hospital	\$24,000	Heat Recovery Chiller
Summerland Health Centre	\$19,000	Gas Absorption Heat Pump
Vernon Jubilee Hospital	\$23,000	Heat Recovery Chiller
<b>FY2023/24 Plans and Cost Estimates</b>		
Pleasant Valley Health Centre	\$13,000	ASHRAE Level 2 Audit
Princeton General Hospital	\$13,000	ASHRAE Level 2 Audit
Shuswap Lake General Hospital	\$38,000	ASHRAE Level 2 Audit
<b>FY2024/25 Plans and Cost Estimates</b>		
Boundary Hospital	\$23,000	ASHRAE Level 2 Audit
Elk Valley Hospital	\$20,000	ASHRAE Level 2 Audit
Kootenay Lake Hospital	\$45,000	ASHRAE Level 2 Audit

### 3.2. Operating Projects

A portion of the Energy Management budget is used to deliver smaller-scale Maintenance Improvement Projects (MIPs) that are implemented by Plant Services or P3 Operations staff. These projects offer a short payback period on the invested capital, and a low GHG abatement cost (\$ per tCO<sub>2</sub>e). The MIPs

focus on a few types of low cost measures, such as LED lighting retrofits or re-commissioning of HVAC systems, and can be repeated across multiple facilities with proven success.

The Continuous Optimization Program is a joint offer from BC Hydro and FortisBC which provides customers assistance to save energy and improve operations in large commercial buildings without having to undertake a major capital investment<sup>xiv</sup>. The primary focus of the program is to help improve the efficiency of the most energy-intensive building systems, such as heating, ventilation and air-conditioning, with simple, low-cost solutions. Projects are implemented over two fiscal years, with an investigation conducted the first year, and approved measures implemented during the second year.

Based on the prioritization exercise described in section 2.4, the following operating (MIP) projects are planned over the next two years (FY22/23 and FY23/24), as listed in **Table 7**.

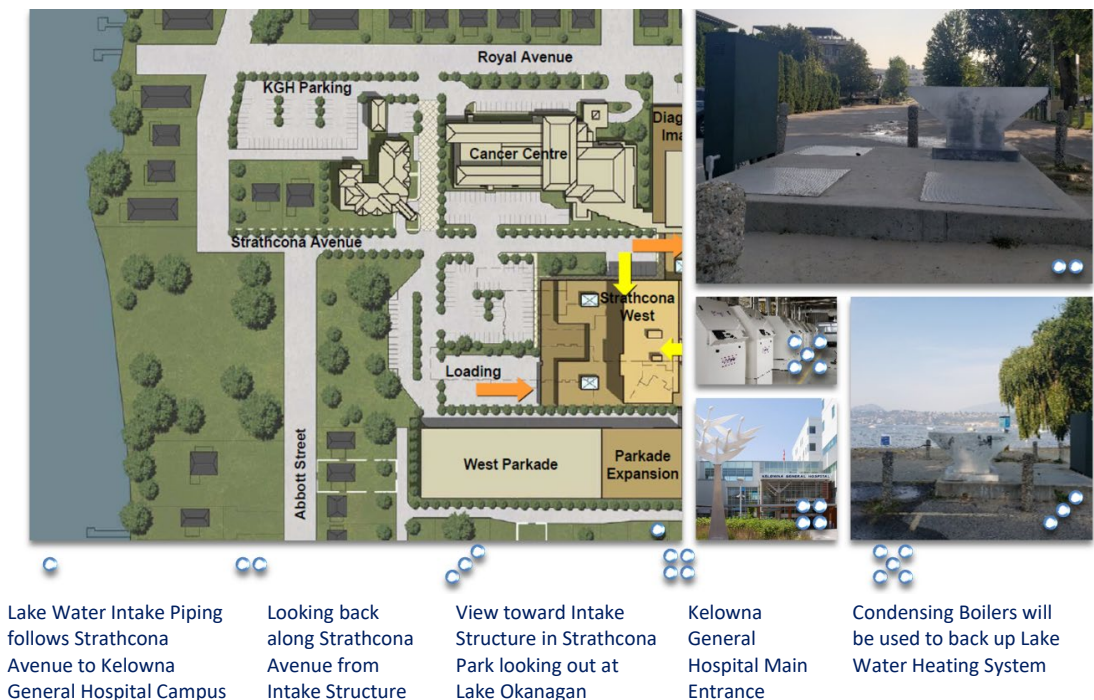
**Table 7: Operating Project Plans**

Facility	Budget	Project Description
<b>FY2022/23 Plans and Cost Estimates</b>		
100 Mile District Hospital	\$169,000	LED Lighting Upgrade
Boundary Hospital	\$3,000	EndoCool Hydronic Additive
Cariboo Memorial Hospital	\$120,000	LED Lighting Upgrade
Castlegar District Health Centre	\$5,000	EndoCool Hydronic Additive
Golden and District Hospital	\$13,600	HVAC Re-commissioning
Invermere and District Hospital	\$4,400	HVAC Re-commissioning
Lillooet Hospital & Health Centre	\$25,200	HVAC Re-commissioning
Nicola Valley Hospital	\$17,000	Hydronic Valves Re-commissioning
Swan Valley Lodge	\$2,200	EndoCool Hydronic Additive
Victorian Community Health Centre	\$6,400	HVAC Re-commissioning
<b>FY2023/24 Plans and Cost Estimates</b>		
Ashcroft Hospital and Health Centre	\$10,500	BC Hydro Continuous Optimization Program
Overlander Extended Care	\$35,000	BC Hydro Continuous Optimization Program
Queen Victoria Hospital	\$23,500	BC Hydro Continuous Optimization Program

### 3.3. Carbon Neutral Capital Program (CNCP) Projects

The majority of energy savings and GHG emissions reduction are the result of larger-scale capital projects that are implemented by the Capital Planning & Projects team. These projects have a longer payback period on the invested capital, and a higher GHG abatement cost (\$ per tCO<sub>2</sub>e). The capital projects involve deeper retrofits and may include the implementation of new innovative technologies, which if successful could be deployed at other facilities. These projects often replace existing equipment or systems that are at the end of their useful service life.

**Figure 13** shows the Lake Water Cooling System installed at the Kelowna General Hospital back in 1999, which is proposed to be expanded starting this year to also recover heat from the Lake Water during the winter months, as another low-carbon electrification project using water-to-water heat pumps.



**Figure 13: Lake Water Heating and Cooling System for Kelowna General Hospital**

Based on the prioritization exercise described in section 2.4, the following Carbon Neutral Capital (CNC) projects are planned over the next three years (FY2022/23 through FY2024/25), as listed in **Table 8**.

**Table 8: Carbon Neutral Capital Program – Projects Plan**

Facility	Budget	Project Description
<b>FY2022/23 Plans and Cost Estimates</b>		
Brookhaven Care Centre	\$1,910,000	Boiler Replacement / BAS Upgrade
Invermere and District Hospital	\$1,540,000	Biomass Boiler
Kelowna General Hospital	\$1,400,000	Low Carbon Electrification – Phase 1
Kootenay Lake Hospital	\$218,000	Building Voltage Regulation
<b>FY2023/24 Plans and Cost Estimates</b>		
100 Mile House General Hospital	\$1,500,000	Electrification and Heating Upgrade
Kelowna General Hospital	-	Low Carbon Electrification – Phase 2
Royal Inland Hospital	\$2,000,000	Heat Recovery Chiller
Vernon Jubilee Hospital	\$2,000,000	Heat Recovery Chiller
<b>FY2024/25 Plans and Cost Estimates</b>		
Gateby Care Facility	-	Boiler Replacement
Kelowna General Hospital	-	Low Carbon Electrification – Phase 3
Kootenay Boundary Hospital	\$300,000	Building Voltage Regulation
Pleasant Valley Health Centre	-	Based on results of Energy Study
Princeton General Hospital	-	Based on results of Energy Study
Shuswap Lake General Hospital	-	Based on results of Energy Study
Three Links Manor	\$150,000	Building Voltage Regulation



#### 4. SEM Review and Conclusions

Our strategy is two-tiered: **firstly**, our energy management program must utilize the funding that is available to achieve the best possible results. Evaluation of individual ECMs consider long-term, triple-bottom-line impacts (economy, society, and environment). Guiding project selection supports Interior Health’s strategic priority for financial sustainability focused on balanced capital investment, innovative programs, and partnerships, following best practices such as:

- a) coordinating with Capital Planning to participate in provincial incentive programs for energy efficient design and construction;
- b) working with the Ministry of Health to apply Carbon Neutral Capital Program funding to the incremental cost of Energy Conservation Measures installed through Capital Projects;
- c) building on partnerships with BC Hydro, Fortis BC, and other external stakeholders to take advantage of incentive and rebate programs that support energy performance within Plant Services and P3 Operations; and
- d) focusing on energy conservation and efficiency to reduce our exposure to rising utility costs.

Our planned operating and capital energy projects for FY2022/23 detailed in [Appendix D – Project Plan Metrics](#) total to approximately 670,000 kWh of annual electricity savings, 2,300,000 kWh of low carbon electrification, and 54,000 GJ of annual fossil fuel savings. These metrics meet or far exceed the total combined annual utility targets of approximately 670,000 kWh, 300,000 kWh, and 18,000 GJ respectively, as outlined in [Table 1: FY2022/23 Utility Energy and Incentive Goals](#). Interior Health is focusing on natural gas reduction and electrification to align with long term emissions reduction targets.

Due to multi-year project timelines, scope adjustments during implementation, and varying fiscal years/contract terms, metrics estimated for a budget year’s projects may not align with utility “claimed” progress towards targets. However, if budget year metrics consistently exceed annual utility goals, averaging over time Interior Health will satisfy position-funding requirements.

Although our planned projects contribute towards our longer-term goals, with the current budget available to invest in energy management, including funding from CNCP and other rebate programs, we will fall short of the target pathway GHG emissions for 2025 by approximately 6,000 tCO<sub>2</sub>e.

**Table 9: Planned Project Projections versus Target Pathway**

Year	Projected Energy Use Intensity [kWh/m <sup>2</sup> ]	Projected Electricity Ratio [%]	Projected Emissions [tCO <sub>2</sub> e]	Target Emissions [tCO <sub>2</sub> e]	Gap from Target Pathway [tCO <sub>2</sub> e]
2021 Reported	487	40%	38,725	-	-
2022	483	40%	38,125	36,550	1,575
2023	478	41%	37,425	34,375	3,050
2024	473	41%	36,725	32,201	4,524
2025	468	42%	36,000	30,026	5,974

**Secondly**, our energy management program needs to be flexible, with the ability to adapt to an increase in funding (if realized) aligned with the target pathway. Tactics used to increase flexibility include:

- i) increase capacity within the Energy Management team;
- ii) improve project performance by working closely with internal stakeholders;
- iii) support re-prioritization of projects resulting from unplanned failures to optimize co-benefits;
- iv) fast-track implementation for three years of opportunities down to one;
- v) continuously improve our program through biennial *Energy Management Assessments*; and
- vi) complete a sufficient number of energy studies well in advance of project implementation, in preparation for the increased investments necessary to meet provincial targets.

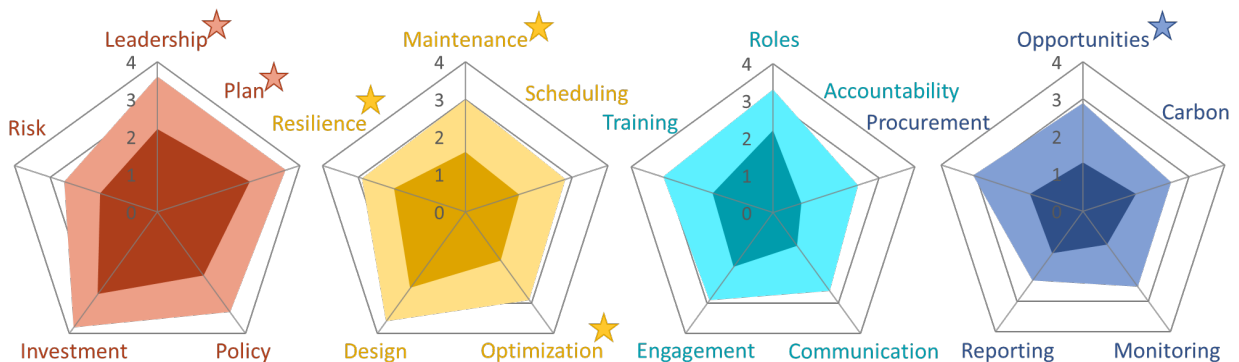
### 4.1. Energy Management Assessments

BC Hydro supports customers by offering facilitated Energy Management Assessments (EMA). The most recent EMA took place in June 2022<sup>xv</sup>. The Prism ENGAGE EMA tool reviewed four key areas of influence.

**Table 10: EMA Areas of Influence and Interior Health Scoring Summary<sup>xvi</sup>**

Area of Influence	Description	Current Score	Target Score
Business	Assesses the overall <b>organizational structure, strategies and plans</b> relating to energy management.	2.2	3.4
Operations	Assesses the company's <b>operations and actions towards implementing</b> energy management plans and targets.	1.8	3.0
People	Assesses the extent to which people are responsible and accountable for energy management.	1.5	2.9
Technology	Assesses what <b>technologies and projects</b> have been <b>identified, funded and put in place</b> to achieve savings.	1.3	2.6

The first EMA session established current and target scores for 20 attributes shown in **Figure 14**; the second focused on identifying actions to help move the top 10 from the current (darker region) to the target score (lighter region). Six key attributes (starred in **Figure 14**), were prioritized to be actioned in the next two years; Leadership, Plan, Resilience, Maintenance, Optimization, and Opportunities.



**Figure 14: Current and Target Pathways Projections through 2050**

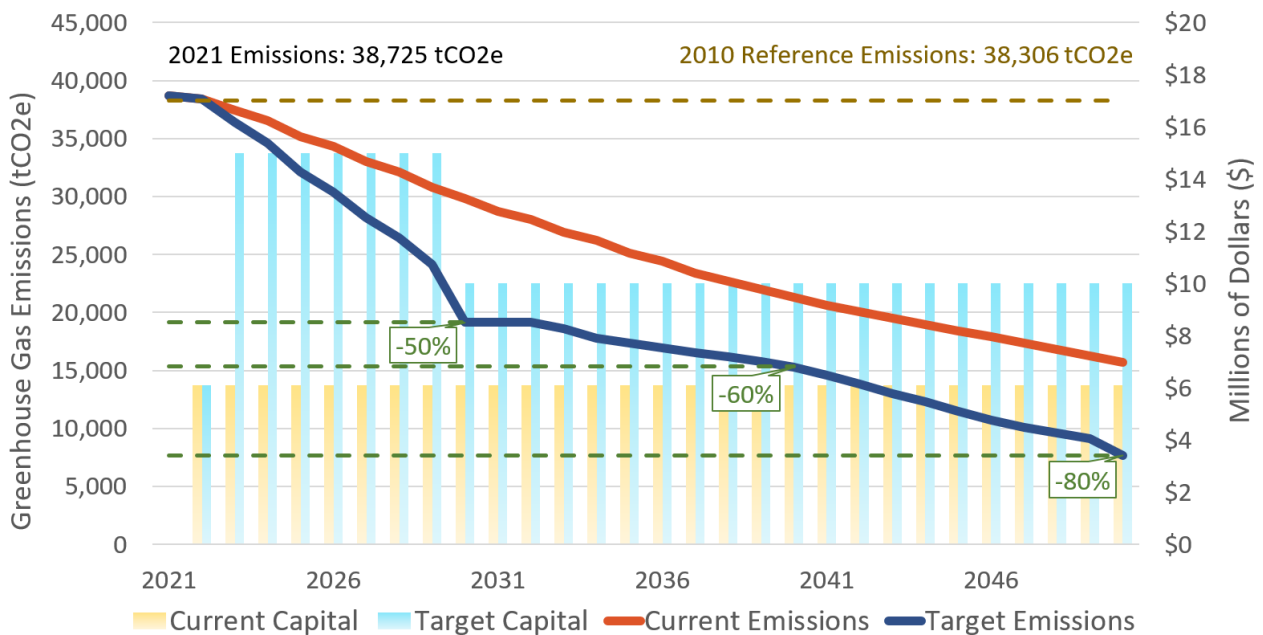
The EMA results are generally aligned with this SEMP relating to Operations and Technology, and the EMA process also identified Key Action Items for Interior Health’s Senior Management:

- regularly evaluate suitability and effectiveness of EM program, targets and resources;
- include energy management goals in long-term organizational plans;
- regularly strategically communicate the importance of energy performance to stakeholders that significantly impact energy use; and
- approve an EM plan with targets and provide adequate resources to help sustain it.

Detailed descriptions, scoring, relative priority, and difficulty of each attribute, as well as the full list of Key Action Items are available in the EMA report<sup>xvii</sup>.

### 4.2. Aligning with Provincial Mandate

Funding and program flexibility, increased resources (e.g. for Project Management), and additional capital are all critical and complex challenges. Our modelling provided meaningful insight relating to capital investment needs, which is currently at ~\$6.1 million per year, and needs to increase to ~\$15 million in order to meet the provincial mandate of 50% emissions reduction by 2030 from 2007 levels.



**Figure 15: Current and Target Pathways Projections through 2050**

If given notice that the above capital were to be made available, we would need to promptly increase investment towards Energy Studies starting in fiscal year 2024/25; this would enable future implementation based on rigorous evaluation and good decision-making.

Following already planned projects, we would be required to implement 12 projects per year with an average emissions reduction of 341 tCO2e/year. Each fiscal year starting in 2024/25, we could initiate two projects at P3 facilities, and ten projects at Plant Services managed facilities, to substantially complete by 2030.

**Table 11: Projects Required to Align with 2030 Building Emissions Reduction Target**

Budget Year	Quantity; Status	Emissions [tCO <sub>2</sub> e]	FY2022 /23	FY2023 /24	FY2024 /25	FY2025 /26	FY2026 /27	FY2027 /28	FY2028 /29	FY2029 /30
2021/22	4; In Progress	800	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation
2022/23	4; Planned	2,400	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation
2023/24	3; Planned	800	Energy Study	Capital Budget Approval	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation
2024/25	12; Required	3,750	Implementation	Energy Study	Capital Budget Approval	Implementation	Implementation	Implementation	Implementation	Implementation
2025/26	12; Required	3,750	Implementation	Implementation	Energy Study	Capital Budget Approval	Implementation	Implementation	Implementation	Implementation
2026/27	12; Required	3,750	Implementation	Implementation	Implementation	Energy Study	Capital Budget Approval	Implementation	Implementation	Implementation
2027/28	12; Required	3,750	Implementation	Implementation	Implementation	Implementation	Energy Study	Capital Budget Approval	Implementation	Implementation

**Legend:** Energy Study (Cyan), Capital Budget Approval (Yellow), Implementation (Red)

Practicing the strategies outlined in this SEMP, completing the actions identified in the EMA, and the three key results and objectives listed below are fundamental to transitioning to the Target Pathway.

**Reduce the average energy-use-intensity in our buildings**

By 30%, from the current 490 kWh/m<sup>2</sup>/year, to below 350, by 2030

**Switch heating sources from fossil fuels to electricity**

To shift utility distribution from 40% electricity and 60% fossil fuel, to 60% electricity, by 2030

**Improve the financial performance of energy projects**

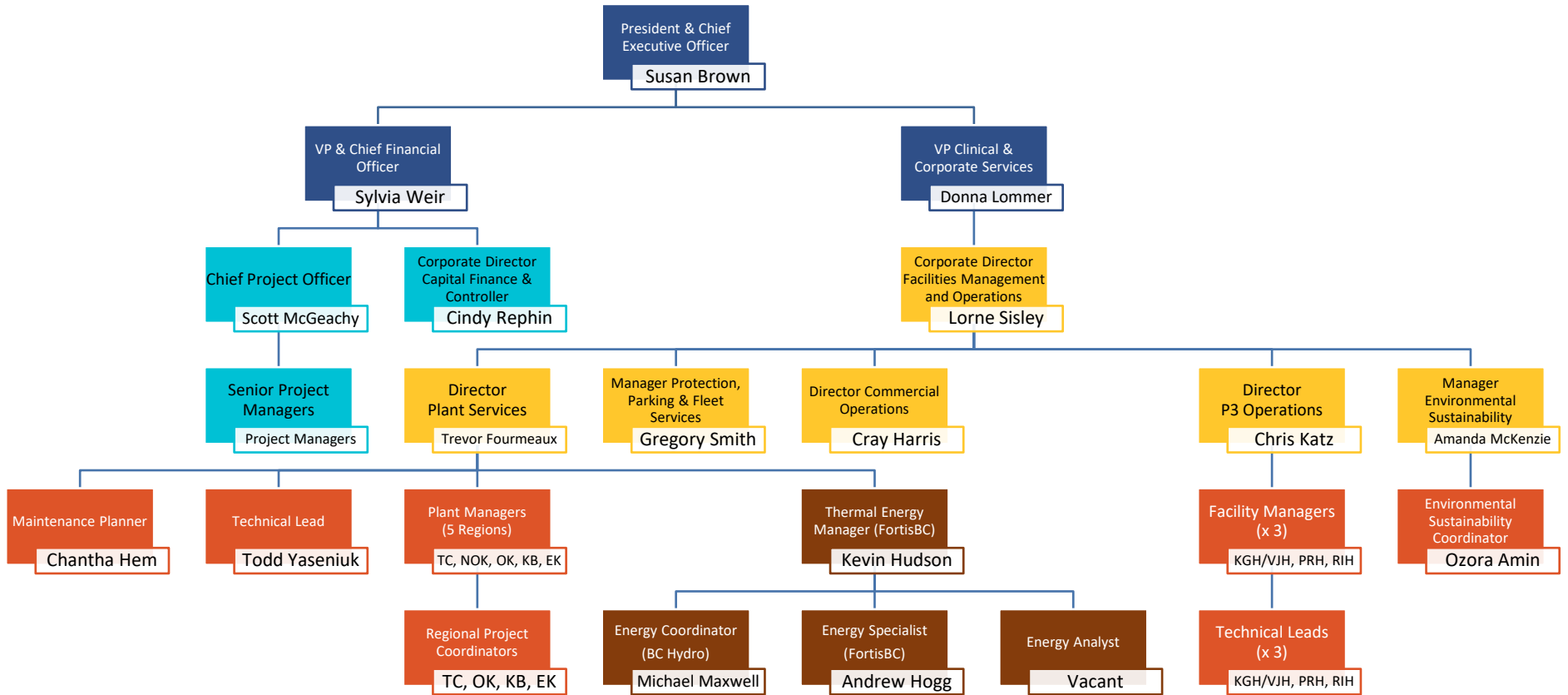
Such that projects will be break-even or better, by 2030

We will meet our 2030 emissions target if we achieve the first two objectives listed above, and will meet our goal for financial sustainability if we can do this at no cost. Our strategy aims to achieve a financial payback of break-even or better over the lifetime of the implemented measures, after considering the carbon tax is proposed to increase from \$50/tCO<sub>2</sub>e today, to \$170/tCO<sub>2</sub>e by 2030.

Our strategy is to work together with our stakeholders to find innovative solutions that could enable us to meet Provincial emissions reduction targets, while remaining in alignment with Interior Health’s Strategic Goal for Financial Sustainability.



## Appendix A – Organizational Chart

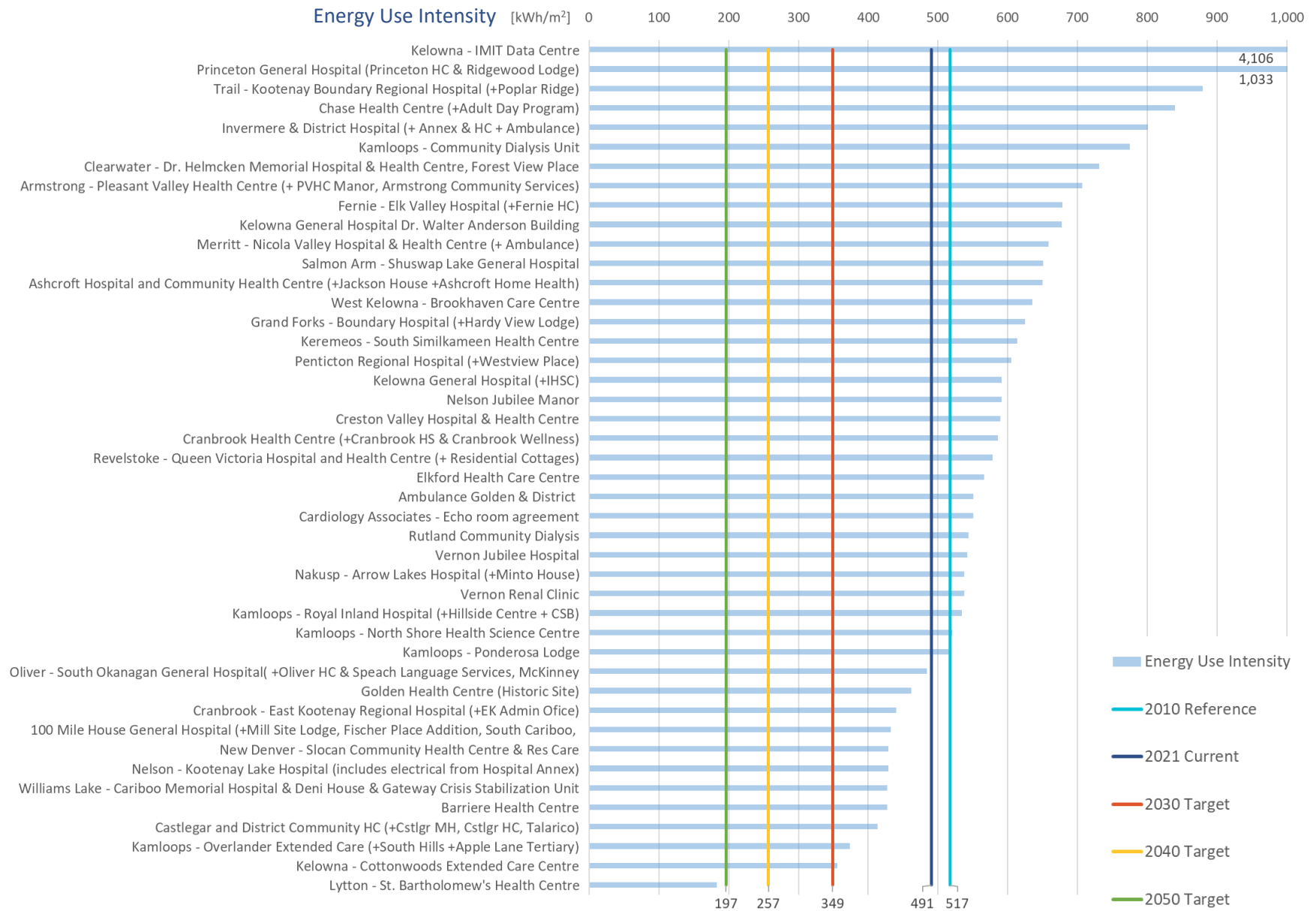


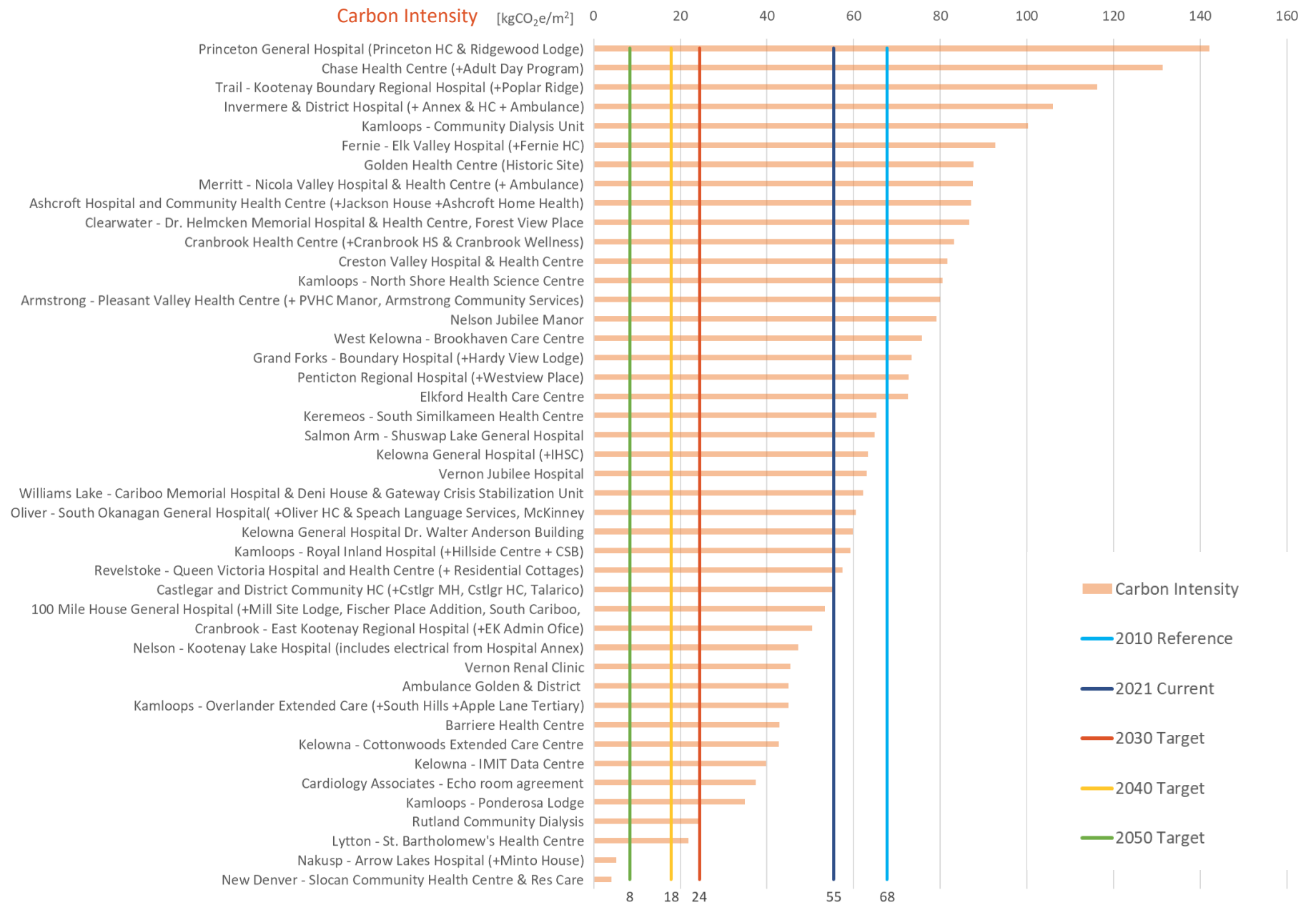
## Appendix B – Stakeholder Engagement Plan

Key Internal Stakeholder	Engagement Strategy and Communications Medium	Frequency
Facilities Management and Operations; Senior Leadership	Joint program and project review virtual meetings with utilities Energy Management focused virtual meetings with Plant Services Director Strategic Energy Management Plan feedback request and report	Quarterly Monthly Annually
Plant Managers	Virtual Plant Managers' meetings Strategic Energy Management Plan report	Monthly Annually
Plant Services Staff; Site Maintenance, Supervisors, Regional Support P3 Operations	Site walkthroughs and in-person engagement Remote training and behavioral change through Energy Wise Network Campaigns Operational Meetings and Energy Performance Reviews	Biennially Annually Quarterly
Environmental Sustainability	Virtual meetings to discuss behavioral change, climate action, and scenarios	Bi-weekly
Commercial Operations (Building Operations, Leasing)	Operational meetings and Energy Performance Reviews	Annually
Protection, Parking and Fleet Vehicles	Strategic Energy Management Plan Report Fleet electrification and incentive processing support	Annually Varies
Capital Projects and Planning	Project specific meetings (virtual and in-person) New Construction and CNCP project support/incentive processing	As required As required
Financial Services, Business Support	Base Budget projections, incentive projections, and project budget projections Energy Management Cost Centre planning and reporting, funding applications	Annually Varies
Purchasing, Supply Chain	Purchasing guidelines and processes	Varies
Clinical Operations and Building Occupants IMIT	Behavioral change, support for Sustainability Engagement Program Building Automation and Remote Access	As required As required
Key External Stakeholder	Engagement Strategy and Communications Medium	Frequency
Provincial Government	Ministry of Health CNCP Applications and Review Annual Carbon Neutral Government Carbon Reporting	As required As required
Utilities; BC Hydro, Fortis BC, and Others	Program and project review virtual meetings Strategic Energy Management Plan report	Quarterly Annually
Provincial Environmental Technical Team and Energy Management Health Sector Working Group	PETT Gov, PETT Health, and EM health sector virtual meetings Collaboration on joint initiatives	Varies As required
Local Communities	Collaboration, engagement, and joint project opportunities	Varies

\*All stakeholders to be through additional communications mediums and with increased frequency as required to support Interior Health's Energy and Environmental Sustainability goals.

### Appendix C – Energy Use and Carbon Intensities





## Appendix D – Project Plan Metrics

### FY2021/22 Carryover CNCP Projects

Facility	Project Type	Project Cost (\$)	Annual Savings (\$)	Simple Payback (Years)	Annual GHG Reduction (tCO <sub>2</sub> e)	Fuel Savings (GJ)	Electricity Savings (GJ)	Electricity Savings (kWh)
Creston Valley Hospital	Boiler Replacement	\$1,000,000	\$18,687	54	85	1,704	-	-
Dr. Helmcken Memorial Hospital	Geo-Exchange Heat Pumps (LCE)	\$1,995,240	\$65,473	30	175	2,895	-845	-234,600 LCE
Kootenay Boundary Regional Hospital	Steam Plant Upgrades	\$2,100,000	\$106,718	20	447	8,941	346	96,010
Summerland Health Centre	Boiler Replacement	\$1,000,000	\$28,623	35	130	2,610	-	-
<b>Total</b>		<b>\$6,095,240</b>	<b>\$219,501</b>		<b>837</b>	<b>16,150</b>	<b>-499</b>	<b>-138,590</b>

### FY2022/23 CNCP Projects

Facility	Project Type	Project Cost (\$)	Annual Savings (\$)	Simple Payback (Years)	Annual GHG Reduction (tCO <sub>2</sub> e)	Fuel Savings (GJ)	Electricity Savings (GJ)	Electricity Savings (kWh)
Brookhaven Care Centre - West Kelowna	Boiler Replacement and BAS Upgrade	\$1,910,000	\$52,477	36	307	6,184	-612	-229,000 LCE 59,000
Invermere and District Hospital	Biomass Boiler	\$1,540,000	\$168,499	9	344	5,630	-	-
Kelowna General Hospital	Low Carbon Electrification *	\$1,400,000	\$238,194	-	1,925	39,000	-7,560	-2,100,000
Kootenay Lake Hospital	Building Voltage Regulation	\$218,000	\$8,239	26	1	-	329	91,302
<b>Total</b>		<b>\$5,068,000</b>	<b>\$467,409</b>		<b>2,576</b>	<b>50,814</b>	<b>-7,843</b>	<b>-2,329,000 LCE</b> <b>150,302 DSM</b>

\* Kelowna General Hospital project will be implemented over 3 years; only the 1st year capital is shown



**FY2022-2023 Operating Projects**

Facility	Project Type	Project Cost (\$)	Annual Savings (\$)	Simple Payback (Years)	Annual GHG Reduction (tCO2e)	Fuel Savings (GJ)	Electricity Savings (GJ)	Electricity Savings (kWh)
100 Mile District General Hospital	LED Lighting Retrofits	\$169,239	\$19,437	9	8.6	-	769	213,582
Boundary Hospital	EndoCool Hydronic Additive	\$3,034	\$1,005	3	0.4	-	40	11,045
Cariboo Memorial Hospital - Williams Lake	LED Lighting Retrofits	\$119,978	\$19,510	6	8.6	-	772	214,386
Castelgar District Health Centre	EndoCool Hydronic Additive	\$5,034	\$1,016	5	0.4	-	40	11,160
Golden and District Hospital	HVAC Re-Commissioning	\$13,600	\$53,910	0.3	107.1	1,738	75	20,810
Invermere and District Hospital	HVAC Re-Commissioning	\$4,400	\$11,737	0.4	23.2	376	19	5,313
Lillooet Hospital and Health Centre	HVAC Re-Commissioning	\$25,200	\$38,976	0.6	75.5	1,217	101	28,053
Nicola Valley Hospital - Merritt	Hydronic Valves Re-Commissioning	\$17,000	\$895	19	4.1	82	-	-
Swan Valley Lodge - Creston	EndoCool Hydronic Additive	\$2,234	\$847	2.6	0.4	-	34	9,312
Victorian Community Health Centre - Kaslo	HVAC Re-Commissioning	\$6,400	\$1,842	3.5	3.4	55	8	2,155
<b>Total of Operating Projects</b>		<b>\$366,119</b>	<b>\$149,175</b>		<b>232</b>	<b>3,468</b>	<b>1,857</b>	<b>515,816 DSM</b>

**FY2022-2023 Project Summary**

	Project Cost (\$)	Annual Savings (\$)	Annual GHG Reduction (tCO2e)	Fuel Savings (GJ)	Electricity Savings (GJ)	Electricity Savings (kWh)
Total of Operating Projects	\$366,119	\$149,175	232	3,468	1,857	515,816
Total of Capital Projects	\$5,068,000	\$467,409	2,576	50,814	-7,843	-2,320,000 LCE 150,302 DSM
<b>Grand Total FY 2022/23</b>	<b>\$5,434,119</b>	<b>\$616,584</b>	<b>2,808</b>	<b>54,282</b>	<b>-5,986</b>	<b>-2,329,000 LCE 666,118 DSM</b>

## References

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- <sup>i</sup> Strategic Priorities 2021-2024, Interior Health, <https://www.interiorhealth.ca/sites/default/files/PDFS/strategic-priorities.pdf>
- <sup>ii</sup> Carbon Neutral Government Program Requirements “Becoming Carbon Neutral.pdf” and “Scope Summary for GHGs.pdf”  
<https://www2.gov.bc.ca/gov/content/environment/climate-change/public-sector/carbon-neutral>
- <sup>iii</sup> CleanBC 2020 Carbon Neutral Government Year in Review: Summary, <https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/yir/2020-cng.pdf>
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- <sup>v</sup> Interior Health Energy Management; 2021; Greenhouse Gas Emissions Reduction Plan with Targets and Projections through 2050
- <sup>vi</sup> PEOPLE 2020: BC Sub-Provincial Population Projections
- <sup>vii</sup> General Explanation: <https://betterbuildingsolutioncenter.energy.gov/toolkits/green-revolving-funds>
- <sup>viii</sup> CleanBC; Better Buildings provides funding and capital incentives to encourage energy efficient design, construction and renovation of commercial buildings; <https://betterbuildingsbc.ca/>
- <sup>ix</sup> NRCan; The Federal Government of Canada manages several funding, grants and incentive programs to encourage research, development and demonstration in Canada; <https://www.nrcan.gc.ca/science-and-data/funding-partnerships/funding-opportunities/funding-grants-incentives/4943>
- <sup>x</sup> BC Hydro; programs & incentives; <https://www.bchydro.com/powersmart/business/programs.html>
- <sup>xi</sup> Fortis BC; business rebates and offers; <https://www.fortisbc.com/rebates-and-energy-savings/rebates-and-offers/rebates-business?l=&pos=false>
- <sup>xii</sup> Interior Health Energy Management; Project Prioritization Framework
- <sup>xiii</sup> Interior Health Energy Management Project Prioritization Framework
- <sup>xiv</sup> BC Hydro Continuous Optimization Program, <https://www.bchydro.com/powersmart/business/programs/continuous-optimization.html>
- <sup>xv</sup> Prism Engineering; June 6 & June 14, 2022; ENGAGE Energy Management Assessment Report
- <sup>xvi</sup> Prism Engineering; June 6 & June 14, 2022; ENGAGE Energy Management Assessment Report
- <sup>xvii</sup> Prism Engineering; June 6 & June 14, 2022; ENGAGE Energy Management Assessment Report