

Hi-Tech Seals

A Warehouse Near Net-Zero



Retrofits can deliver in Alberta

Alberta is home to outstanding whole-building retrofit projects. These projects demonstrate how retrofits can help building owners cut operating costs, increase asset value, strengthen financing and insurance options, improve resilience, and decarbonize their buildings.

We interviewed key stakeholders involved in four different projects to understand how to encourage and support similar projects. Our recent report *Surfacing Success* synthesizes the lessons learned from these projects.

This series expands on that report, providing case studies across four building types: Hi-Tech Seals warehouse and office, Tennyson Apartments, Glenbow art museum, and the Sundance Housing Co-operative.

pembina.org/retrofits-alberta

Retrofit outcomes

Over two major renovations, Hi-Tech Seals has transformed its 32,000 square foot office and warehouse into a near net-zero facility. With the retrofit and disconnecting from natural gas lines, the building saves \$1,100 per month in utility costs.

Retrofit improvements

- insulation upgrades
- addition of in-floor heating and cooling
- addition of 15 ground source heat pumps connected to a geothermal loop
- addition of 248 kW solar system
- disconnection from gas

Lessons learned

Hi-Tech Seals stands out for its leadership. It demonstrates that light-industrial buildings can replace and disconnect gas heating for geothermal, boosting asset value and lowering utility expenses. It is also an important reminder of the opportunity that tax deductions offer businesses to finance their retrofits.



Meet Leigh Bond

Leigh Bond is President of Boundless Renewables Consulting, President of Threshold Energies Corporation, and a Founding Director of PACE Alberta.

He led the retrofit project of an Edmonton warehouse and office facility for Hi-Tech Seals, a manufacturer and distributor of high-quality industrial seals and gaskets, owned by his brother Jim Bond.

The business case for near net-zero

Decarbonization and getting off gas were priority outcomes for this project, but this was not to come at the expense of the bottom line. Bond stressed that this project had to boost asset value and save money every month.

Disconnecting from gas lowers utility bills

For heavy power users like Hi-Tech Seals, energy costs for a 32,000 office and warehouse facility can be considerable. The energy base rate for industrial natural gas use is typically around \$3 per gigajoule, but Bond knows the price of energy is more than just the fuel charges. With administration, transmission, and distribution fees, Bond saw the true cost of natural gas delivered rise above \$10 a gigajoule. This cost difference helped seal their decision to get off gas and use renewable heating.

Businesses can claim retrofit capital costs to lower taxable income

Back in 2006 when the first renovation began, the financial landscape for retrofitting was very different. Instead of using grants or rebates, the company relied on favourable tax treatment as a business. Under capital cost allowance class 43.2, they were able to write off their geothermal and solar systems at 50% on

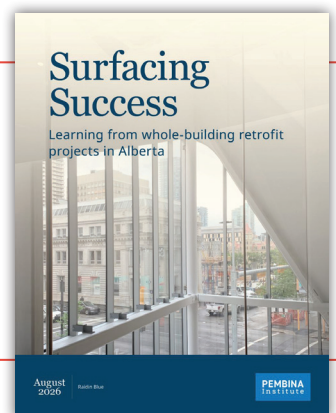
a declining balance. This essentially means businesses can write off half of the remaining value each year, creating savings by lowering their tax costs.

Increasing asset value improved lending terms

Hi-Tech Seals uses normative accounting rules, which allows them to include their geothermal system as an intangible appreciating asset on their balance sheet. This means that the geothermal system can be written off for tax purposes as described above, while also being used as leverage for bank loans.

Hi-Tech Seals demonstrates how businesses can align decarbonization with boosting asset value and creating monthly savings.

To learn more about the conditions that led to projects like Hi-Tech Seals to be retrofitted, check out *Surfacing Success: Learning from whole-building retrofit projects in Alberta*.



Unlocking the value of renewable energy

One of Hi-Tech Seals' more outstanding features is their ground-source geothermal system. As Bond reports, front-runners typically must carve their own path.

As the founding chairman of the Alberta Geothermal Energy Association, Bond states with great authority that there are labour issues with geothermal energy in Alberta. This gap is puzzling given that Alberta has many skilled workers in oil and gas whose technical and non-technical skills transfer directly to geothermal. Bond believes there is a market perception problem around geothermal. To help

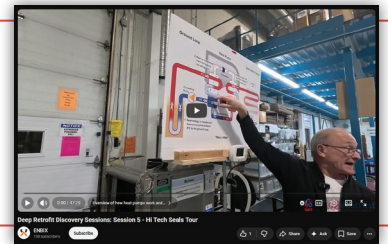
"When we started the Alberta Geothermal Energy Association we had like 105 members. Today, they've only got about maybe 15. So finding trades is an issue—there's a labour problem. And that's now compounded by the fact that NAIT's Alternative Energy Technologist Program has been suspended."

"If somebody's doing a retrofit on their house, they may have some subjective, personal reasons for doing it ... But if you're in a business, it's all about the bottom line ... It's all about building asset value, and that was the main focus of the project."

address this, Bond has hosted several tours of Hi-Tech Seals to showcase their geothermal system.

Demonstration projects and tours of buildings like Hi-Tech Seals are great opportunities to show building owners, engineering companies, and architects how decarbonization can facilitate effective asset management.

Watch a [November 2025 tour](#) hosted by the Alberta Ecotrust and SAIT on the ENBIX website.



Opportunities in retrofit financing

Hi-Tech Seals' retrofit took place in two major phases over twenty years, in very different financing landscapes. To illustrate some more recent opportunities for building owners, Alberta Ecotrust Foundation created a hypothetical scenario of funding the retrofit of an example mixed-use building.

Example building details	
Location	Edmonton
Building size	20,000 sq.ft.
Building type	Mixed-use light industrial
Year of upgrades	2026
Energy use intensity	1.15 GJ/m ² /year

Example retrofit details	Cost
Ground source heat pump system for heating and cooling (COP = 3.8)	\$570,000
150 kW rooftop photovoltaic system	\$390,000
Efficiency upgrades that reduce energy consumption by 15% (e.g., lighting upgrades, automation, building controls changes)	\$35,000
Cost of business-as-usual retrofit	\$140,000
Incremental cost of deep retrofit	\$855,000

The scenario compares the business case utilizing several incentives programs

Alberta incentives programs examined in scenario	
Clean Energy Improvement Program (CEIP)	Offered by certain municipalities, CEIP offers loans of up to \$1,000,000 to support retrofits with fixed-rate financing up to 20 years Can cover full project costs under \$1,000,000
Accelerated Investment Incentive (AII)	Tax incentive that enhances Capital Cost Allowance claims during first year of operation Can depreciate the full cost of equipment, meaning 23% (15% federal corporate tax rate + 8% Alberta general corporate tax rate) of the cost of equipment can be saved in avoided taxes
Clean Technology Investment Tax Credit (CT ITC)	One-time refundable tax credit for capital invested in the adoption and operation of new clean technology Tax credits can be 20-30% depending on whether specific CRA labour requirements are met; some technologies are exempt from labour requirements
Strategic Energy Management for Industry (SEMI)	Offered grant funding through Capital Retrofits activity stream Funding rate for retrofits other than solar PV: 50% Maximum funding rate for solar PV: 20%, or \$0.50/W <i>Offered through Emissions Reduction Alberta, SEMI has allocated all of their funding and is set to close March 2027</i>

Multiple financing options required to make the business case

Alberta Ecotrust Foundation estimated the net present value of the retrofit upgrade work across incentive programs. This includes:

- Present Value of Energy Savings: estimated total energy savings achieved over 20 years of operation
- Present Value of Incentive: estimated additional value of the incentive program
- Incremental Life Cycle Cost: estimated remaining cost of the project not paid back after 20 years.

The results illustrate that, in this hypothetical scenario, the business case for whole-building retrofits may require more than energy savings and that it improves substantially when financing and incentive programs are coordinated or stacked (Figure 1). This

hypothetical building and suite of retrofits does not represent other whole-building retrofit scenarios, which will have different net present values and payback periods. This analysis does not capture other values derived from climate resiliency and insurance perspectives, which may further enhance the net present value.



Summarized here, all of the information on assumptions and calculations can be found in the full report, *Financial Tools and Incentives Supporting Deep Retrofits in Alberta*.

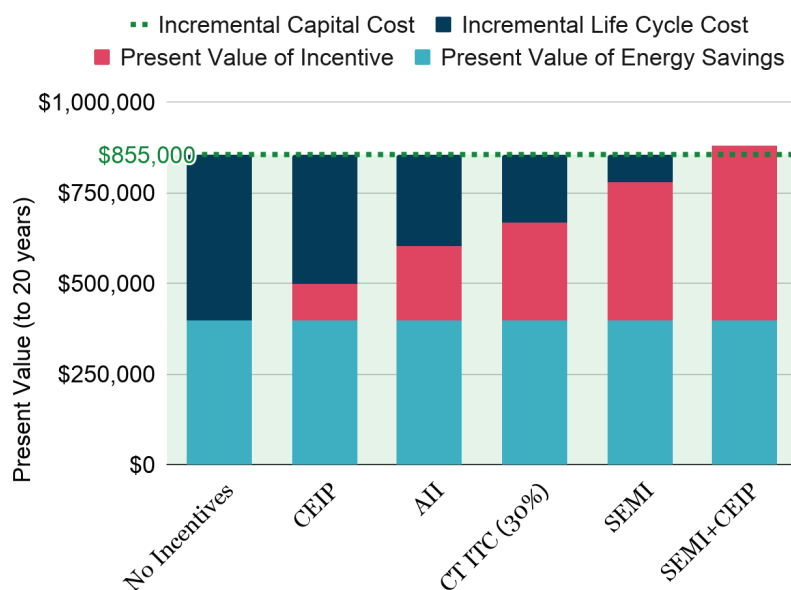


Figure 1. Incremental net present value of the retrofit upgrades including a scenario that combines financial tools and incentives (SEMI + CEIP)

October 2026 Raidin Blue

This work is supported by

