



Energy Efficiency for Multi- Units Overview

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Overview of Nova Scotia Market

- **Small Market**
 - Only 38,000 commercial and institutional buildings
 - Average size of building is 12,233 square feet
- **Concentrated**
 - 37% in Halifax
 - 9% in Cape Breton Regional Municipality
 - 6% in Municipality of Kings
- **Age**
 - Oldest Building Stock in Canada
 - Average commercial building was built in 1977
- **Growing**
 - Vacancy rate <2%
 - Housing Prices +21% since 2019



The Multi-Unit opportunity

- **Urban Density** means more MURBs and refreshing existing stock
- **Many challenges**
 - Poor envelopes, thermal bridging
 - Higher demand for cooling
 - Split incentives
- **Principal energy use:**
 - Heating
 - Hot Water
 - Common Equipment (Ventilation, pumps, fans)
 - Plug Loads
 - Lights

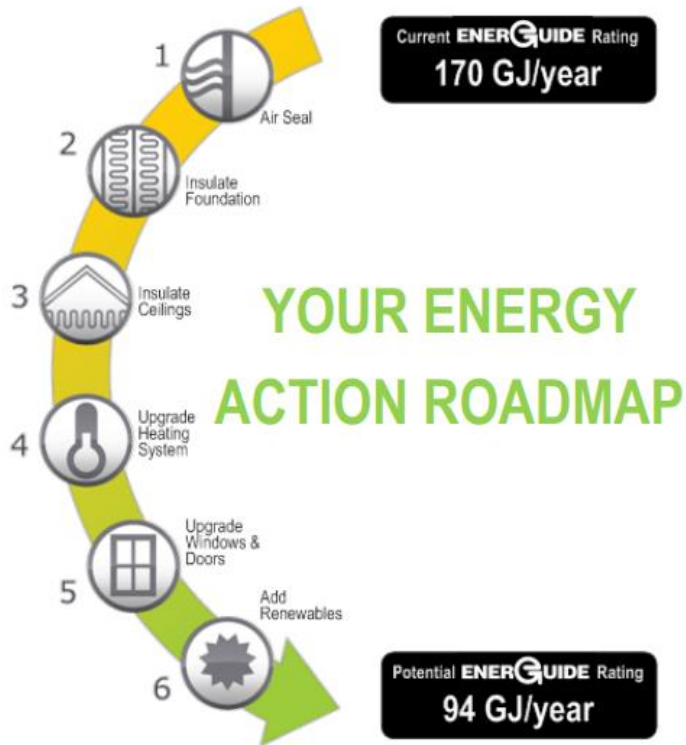


Home Energy Assessment

- New Pilot (up to 6 units per building)
- \$99
- Energy modeling and advice
- Specific to the Building
- Prioritized opportunities
- Rebates being determined, but similar to residential levels

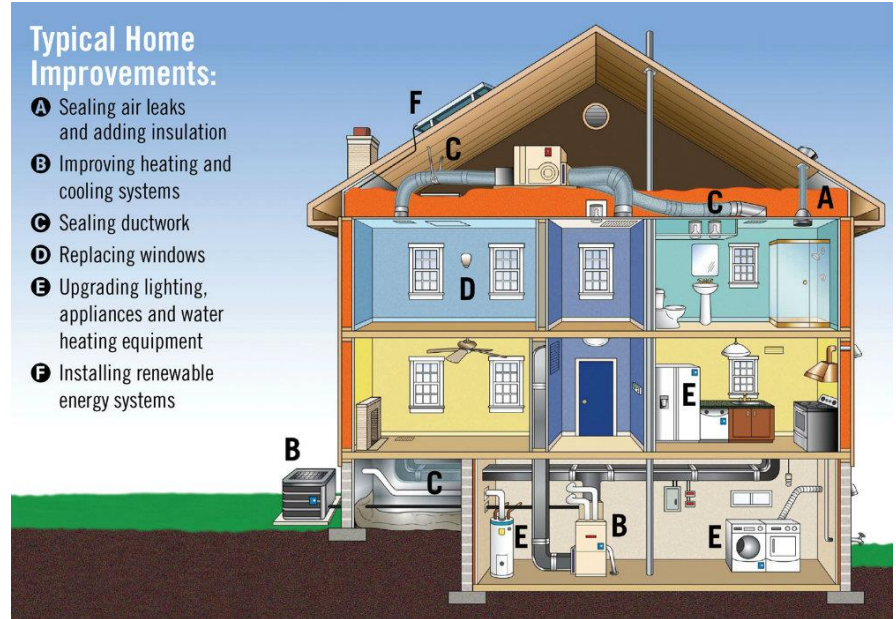


Home Energy Journey



Typical Home Improvements:

- A** Sealing air leaks and adding insulation
- B** Improving heating and cooling systems
- C** Sealing ductwork
- D** Replacing windows
- E** Upgrading lighting, appliances and water heating equipment
- F** Installing renewable energy systems



Small Business Energy Solutions

- Under 350,000 kWh annually (~\$3,000 monthly)
- Cover up to 60% of the project cost through rebates
- Offer 24 months interest free on-bill financing



Business Energy Rebates

Instant Rebates at Distributors

- Lighting
- Pumping

Mail-In Rebates

- Rebates or on-bill financing
- Products include:
 - Lighting, pumping, HVAC, laundry, refrigeration, VFDs, solar, water heating.

Business Energy Rebates

Small Air Source Heat Pumps - Installed in Multi-Unit Facilities (3 or more units)

Size (Nominal Capacity)	Type	Min HSPF (Region IV)	Min SEER	Requirements	Rebate
< 65,000 Btu/h (< 5.4 tons)	Ductless Mini-Split Heat Pump	11	17	<ul style="list-style-type: none"> Applicant must be property owner Property must have three units or more and be electrically heated Ductless Mini-Split Heat Pump rebates limited to a maximum of 40 units per facility Heat pump must be utilized over the heating season Systems must be AHRI matched systems Contact us prior to purchase if replacing an existing air-source heat pump or in new construction 	\$200 / ton
	Centrally Ducted Split System Heat Pump	8.5	15		\$400 / ton
	Multi-Zone	10	15		\$200 / ton

Retrofits of Existing Equipment

Project: Changing T8 fluorescent lights to LED in common areas (hallways)

Cost for each LED light = \$10
Instant Rebate from ENS: \$4

Result: Owner pays \$6 per light and saves \$12 annually on electricity bills



Custom

Opportunities for Retrofit, Optimization and New Construction

Retrofit

1. Scoping Study (up to \$1,000)
2. Feasibility Study (up to \$15,000)

Incentives customized to each project based on electrical energy savings



Custom

New Construction and major retrofits

- Buildings bigger than 20,000 sq. ft
- Energy modeling support
- Compares proposed building energy model to NECB 2017
- Savings for envelope, HVAC, fans, pumps, motors, renewables
- Whole building approach



Energy Benchmarking

Discover where to save energy, and money in your building

Portfolio Manager® is a free, secure, web-based tool that allows building owners to better understand the performance of their buildings, while finding areas for optimization.

- Track & manage energy/water/waste consumption
- Identify potential areas for improvement, optimization, and savings
- Maintain your competitive edge by identifying how well your building is using energy compared to similar buildings in the area
- Quickly generate reports on your building and share with potential buyers and tenants
- Get support from Efficiency Nova Scotia throughout the program
- Potentially receive awards & recognition for program participation



Energy savings and support
every step of the way

Example – Booster Pump

Building ~200 units

Existing: 2 pumps, 5 HP and 10 HP,
Full Speed

Retrofit: 2 pumps, both 5 HP with
intergrated Variable Frequency Drives

- Total Cost: \$50,000
- Annual Energy Savings: \$6,000
- Efficiency NS Incentive: \$4,500



Example – Net Zero Energy Retrofits

- Housing NS scoped Net Zero Retrofit studies at several facilities
- Results were mixed and paybacks were higher than 20 years, sometimes more than 30 years
- However, across the board, the retrofits were much cheaper than building new, and saved significant carbon emissions and embodied carbon.
- HNS in process of modifying the studies to result in deep energy retrofits with better financial outcomes

Example - New Construction





Emerging Trends and Technologies

1. District Energy
2. Variable Frequency Drives
3. Heat Pumps (Hot Water, VRF)
4. Photovoltaics
5. Smart Controls
6. Net Zero / Passive House
7. Ductless HRVs

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Questions?

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