

# Towards Cost Effective Net Zero Energy Ready Residential Renovations



Presented by  
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## CHBA's Net Zero Home Labelling Program

Labelling program developed 2015-2017 by CHBA to provide industry with a clear technical requirement to recognize Net Zero & Net Zero Ready Homes...

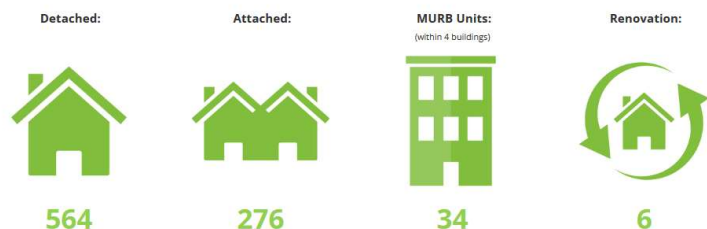
... and to recognize builders and renovators who voluntary built to Net Zero/Ready levels of energy performance.

CHBA defines Net Zero Homes as homes that produce as much clean energy as they consume annually, using on-site renewable energy systems - **verified with a 0 GJ/year EnerGuide (ERS) label through NRCan.**

*(Net Zero Ready = hasn't installed renewables yet)*

### Homes Labelled Across Canada: 880

Last Updated: April 12, 2022



**ENERGUIDE**



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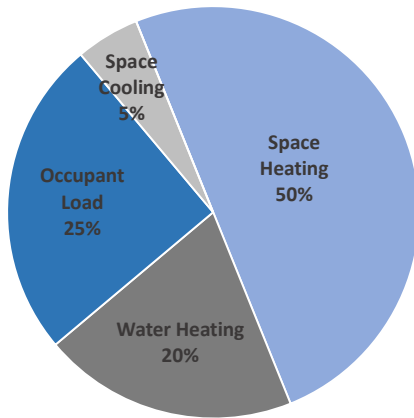
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## The Opportunity of Older Homes

Average NBC 9.36 Home = 105 GJ

Average Net Zero Ready Home = 43 GJ

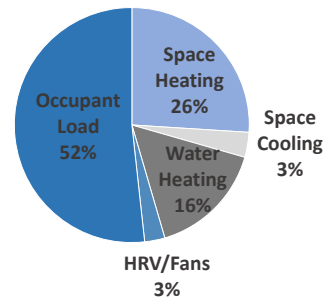


### REDUCTIONS:

- Energy
- GHGs
- Costs

### IMPROVEMENTS:

- IAQ
- Comfort
- Outside noise



Homes in Canada built between 1960-1977 consume an average of **342 GJ/year!**

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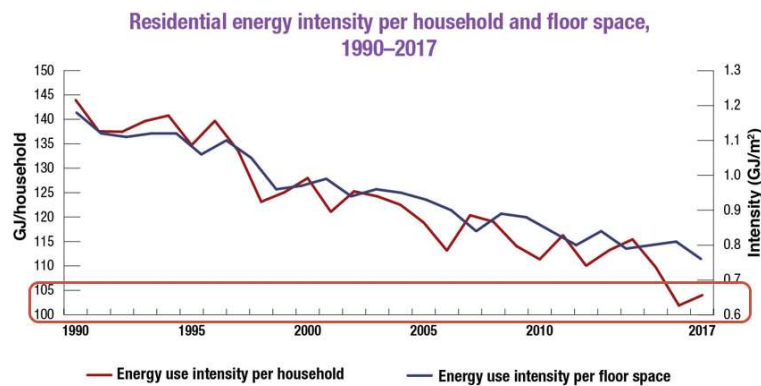
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## The size of this... opportunity

### Our Housing Stock

7 million homes built before 1984

Year Built	Millions
Before 1946	1.6
1946–1960	1.2
1961–1977	2.6
1978–1983	1.6
1984–1995	3.1
1996–2000	1.1
2001–2005	1.3
2006–2010	1.3
2011–2015	1.2
Total	15



✓ A 28% reduction per household, but still +100 GJ / Household

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Slide source: BUILDING KNOWLEDGE

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For more information visit [www.NetZeroRenos.com](http://www.NetZeroRenos.com)

## Net Zero Renovator Requirements

### To be a Qualified Net Zero Renovator, one must:

1. Be a CHBA Member
2. Be RenoMark Member
3. Successfully Complete Training
  - Advanced Building Science Training
  - Net Zero Builder Training (*How to get to Net Zero*)
  - Net Zero Renovator Training (*How it applies to renos*)
4. Label a Net Zero/Ready Reno under the Net Zero Home Labelling Program



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## RenoMark Code of Conduct

- Be a member in good standing of the local Home Builders' Association.
- Abide by all of the Local Home Builders' Association's Code of Ethics.
- **Provide a detailed, written contract** (including a scope of work) for all jobs.
- **Offer a minimum two-year warranty on work** (excludes minor home repair).
- **Carry a minimum of \$2 million in liability insurance.**
- **Carry all applicable licenses and permits as required.**
- Maintain a safe and organized work site at all times.
- Return homeowners phone calls within two business days.
- Have access to education, training and professional development.
- **Have and/or work only with subcontractors which have workplace safety and employers' liability coverage.**



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For more information visit [www.NetZeroReno.com](http://www.NetZeroReno.com)

# Net Zero RENO Pilot Home Profiles



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## Towards cost-effective net-zero energy ready residential renovations

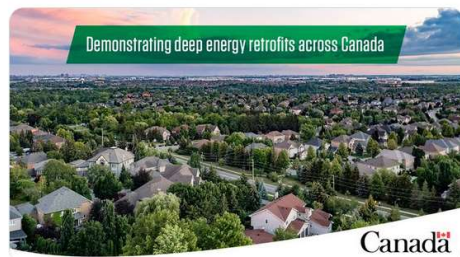


Natural Resources  @NRCan · Feb 24

Improving [#EnergyEfficiency](#) in our homes is an important tool in the fight against climate change. We're investing \$4.4M in [@CHBANational](#) to demonstrate the cost-effectiveness of deep energy retrofits for existing homes.

More: [canada.ca/en/natural-res...](http://canada.ca/en/natural-res...)

#ClimateActionGC



**5-year NRCan funded initiative  
officially announced Feb 23, 2022**

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## Towards cost-effective net-zero energy ready residential renovations

Delivered by the CHBA, a not-for-profit industry association, in collaboration with 10-20 municipalities across Canada, the project will target local barriers to achieving NZr performance in retrofits, co-funded with the municipally led programs/initiatives to support local adoption. (A portion of the cost of the retrofits will be financed via municipal LIC/PACE or on-bill financing, and/or incentives.)

The project is also focused on **building industry capacity and competency** so that there are enough qualified renovators to get this important work done.

**This project will accelerate the deployment of very high efficiency home and building retrofits, driving down the cost and creating market confidence.**

- 100-150 Net Zero/Ready (NZ/r) renovations across Canada with a reduction of site energy use intensity (including plug loads) of *at least* 50% from the pre-retrofit baseline
- using the “house-as-a-system” approach
- targeting multiple building archetypes (including Part 9 MURBs)
- across multiple climate zones (4-8)
- varying business models/ownership structures



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## Towards cost-effective net-zero energy ready residential renovations

**YR 1: PROJECT PREP (Jan 31–Mar 31/22)**

**YR 2: PRE-RENOVATIONS (Apr 1/22–Mar 31/23)**

- Confirm Project Partners & Consultants
- Training: Building Science + Net Zero Builder + Net Zero Renovator
- 2-day LEEP for Renovations sessions
- Call for homeowner applications + screening and selecting up to 150 homes
- Optimizations/Integrated Design Charrettes



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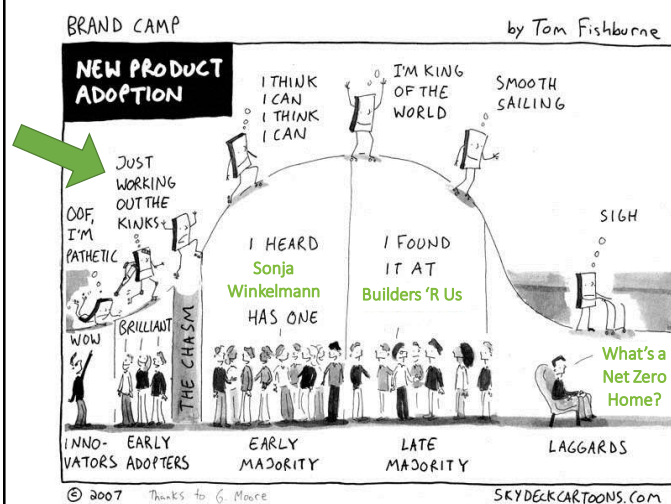
## Voluntary Programs vs. Codes



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## The Diffusion of Innovations



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### THE PREDICAMENT OF KNOWLEDGE

- The diffusion of innovations highlights the predicament that the **innovators and early adopters are the holders of the most current knowledge.**
- To be able to "cross the chasm" we must disseminate this knowledge, shortening the learning curve and **paving the way for the early majority.**
- The challenge is to effectively apply what we already know **and what we continue to learn, en masse.**



# Strategies to Increase Uptake

Canadian  
Home Builders'  
Association



**LEEP**  
LOCAL ENERGY  
EFFICIENCY  
PARTNERSHIPS

- Accelerating Uptake of Innovative Technologies in the New & Retrofit Housing Sectors.
- Through a series of more than 130 workshops and forums over the next four years (until Mar 31, 2025) this CHBA & NRCan initiative will:
  - ✓ drive manufacturers & the supply chain to better meet energy efficient housing needs,
  - ✓ help local experts expand their knowledge and share best practices, and
  - ✓ bring regional builders, renovators, trades, energy advisors and building officials together to review options and facilitate implementation of innovation to resolve important challenges in building and renovating high efficiency homes in a cost-effective manner.
- CHBA looking to build a costing database through this work
- For more information visit [www.chba.ca/LEEP](http://www.chba.ca/LEEP)



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