WEBINAR SERIES

Public Reviews for the 2025 National Construction Codes

Canadian Home Builders' Association

Webinar #1: Proposed code changes - overview

November 17 @ 12:00 - 1:00 PM ET

Webinar #2: Introducing proposed code changes for renovation

November 24 @ 12:00 - 1:00 PM ET

Webinar #3: Deep dive into Part 9 energy efficiency and GHG requirements

November 30 @ 12:00 - 1:30 PM ET

Proposed Code Changes – Deep Dive
Public Reviews 2023/2024

Frank Lohmann, Alex Bols, Alexandre Bigonesse, Brett Cass,

November 30, 2023

Canadian Home Builders' Association

Proposed Code Changes – Deep Dive
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Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - **Prescriptive Trade Off Method – "Points" (20 min)**
   - **Prescriptive Tier 5 – "Packages" (10 min)**
   - **Solar Heat Gain / Peak Cooling (10 min)**
   - **Greenhouse Gas Emissions (20 min)**
   - **Heat Pumps (10 min)**
3. How to Submit Comments for Public Review

1. WHERE WE ARE IN THE CODE PROCESS

Canadian Home Builders' Association

Codes Timelines	Committee Deadline	Public Review Opens	Public Review Closes
Fall 2023	June 12, 2023	October 23, 2023	**December 18, 2023**
Winter 2024	October 2, 2023	February 20, 2024	**April 29, 2024**
Fall 2024 (Ref'd Docs)	June 17, 2024	October 21, 2024	**December 16, 2024**
Code Publication	Planned for **December 2025**		
P/T Code Adoptions	Planned for **18 months after** publication		

YOU ARE HERE

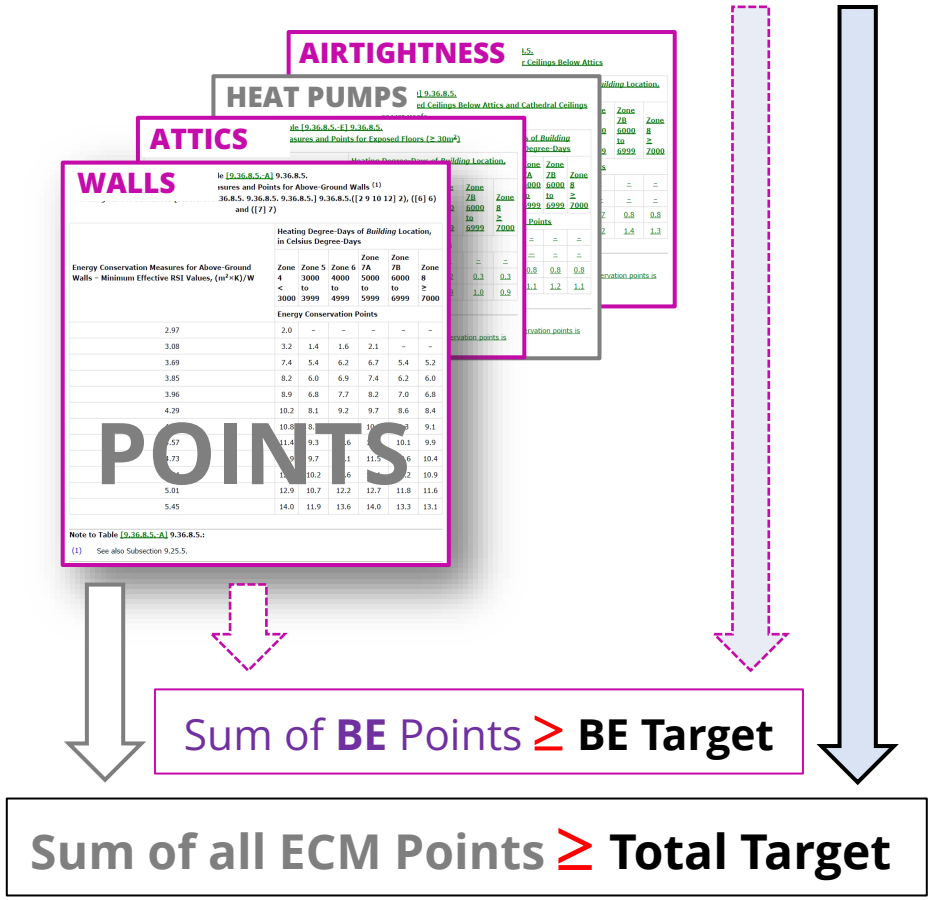
PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

1. Trade-Off Point Targets (PCF 1890) → → →
2. Points for Energy Conservation Measures (ECM)
   - Drain Water Heat Recovery (PCF 1835)
   - Gas-fired Furnaces (PCF 1836)
   - Airtightness (PCF 1888)
   - Fenestration & Doors (PCF 1889)
   - Building Envelope (PCF 1923)
   - Oil Furnaces (PCF 2000)
   - Air-source heat pumps ASHP (PCF 2001)
3. Interpolation (PCF 1834)

→ → →

Energy Conservation Points	T1	T2	T3	T4	T5
Min. Total Points	0	10	20	40	75
Min. Building Envelope Points	0	0	5	10	15



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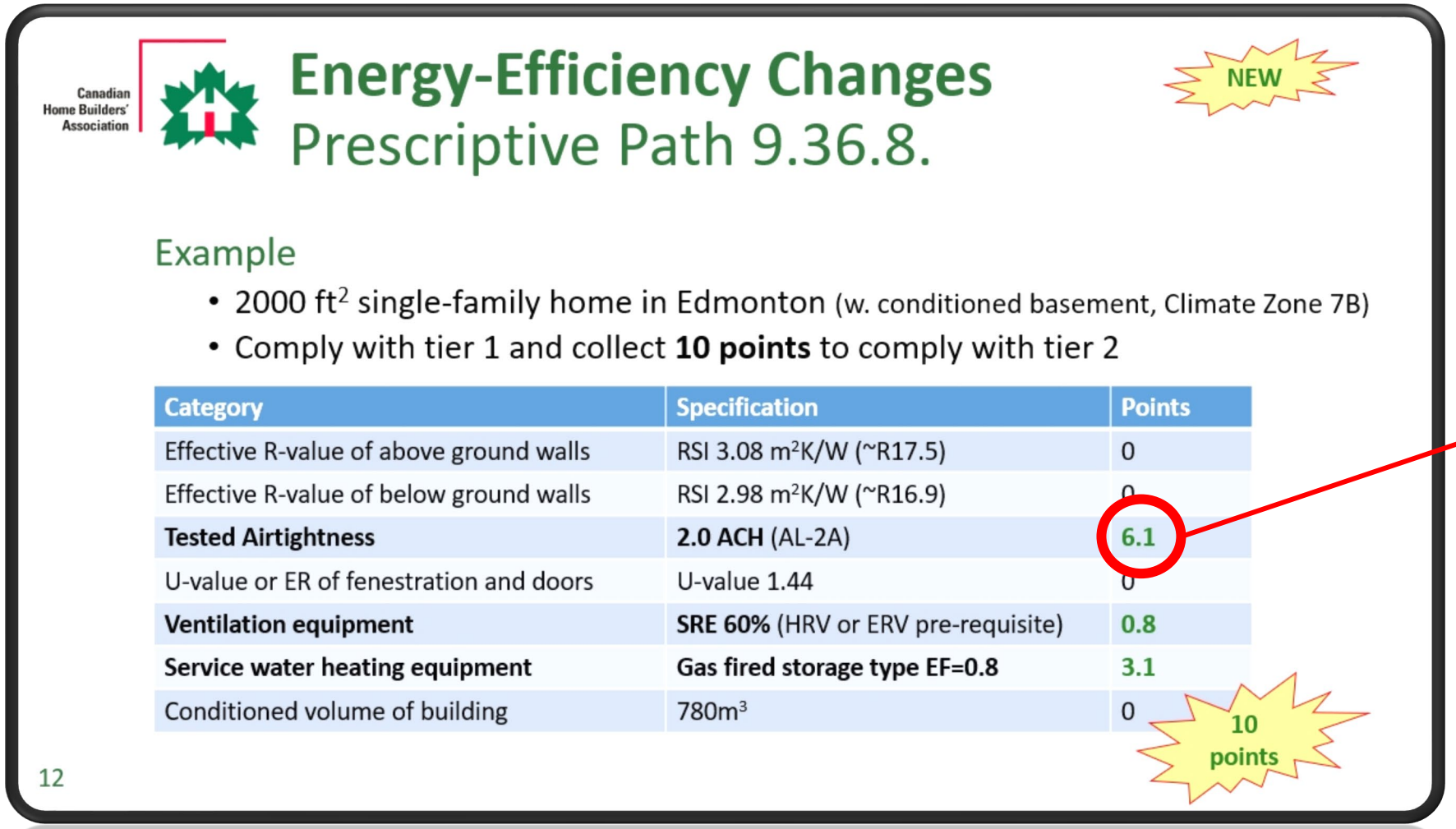
PRESCRIPTIVE TRADE-OFF – "POINTS"



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Energy-Efficiency Changes
Prescriptive Path 9.36.8.

NEW

Example

- 2000 ft^2 single-family home in Edmonton (w. conditioned basement, Climate Zone 7B)
- Comply with tier 1 and collect **10 points** to comply with tier 2

Category	Specification	Points
Effective R-value of above ground walls	RSI 3.08 m^{2}K/W (~R17.5)	0
Effective R-value of below ground walls	RSI 2.98 m^{2}K/W (~R16.9)	0
Tested Airtightness	**2.0 ACH** (AL-2A)	6.1
U-value or ER of fenestration and doors	U-value 1.44	0
Ventilation equipment	**SRE 60%** (HRV or ERV pre-requisite)	0.8
Service water heating equipment	**Gas fired storage type EF=0.8**	3.1
Conditioned volume of building	780m^3	0

10 points

12

PCF 1888 corrects points for airtightness

Screenshot: CHBA Webinar June 2022 Tiered Energy Codes

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Service Water Heating Equipment (PCF 1835)

- Existing Code: ECM Points for Water Heaters

Table 9.36.8.10.
Energy Conservation Measures and Points for Service Water Heating Equipment
Forming Part of Sentence 9.36.8.10.(3)

Type of Equipment	Energy Conservation Measures for Service Water Heating Equipment – Energy Efficiency, EF or UEF[1][2]	Performance Testing Standard	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
			Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
			Energy Conservation Points					
Gas- or oil-fired tankless condensing water heater	EF ≥ 0.95 or UEF ≥ 0.92	CAN/CSA-P.3	8.9	5.4	4.9	3.1	3.1	3.1
Gas- or oil-fired residential *storage-type service water heater*	EF ≥ 0.80 or UEF ≥ 0.83		8.9	5.4	4.9	3.1	3.1	3.1
Gas- or oil-fired residential-duty commercial *storage-type service water heater*	UEF ≥ 0.79		4.6	2.7	2.4	1.5	1.5	1.5
	UEF ≥ 0.85		6.0	3.6	3.2	2.0	2.0	2.0
Heat pump water heater	EF ≥ 2.35	CAN/CSA-C745	6.4	3.9	3.8	3.0	3.0	3.0

Edmonton Example House

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Service Water Heating Equipment (PCF 1835)

- Additional ECM Points for Drain Water Heat Recovery

Heat Recovery Efficiency of DWHR Equipment	Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8
	Energy Conservation Points					
30%	2.4	1.9	1.9	1.9	1.9	1.5
40%	3.1	2.4	2.4	2.4	2.4	2
50%	3.7	2.9	3	2.9	2.9	2.4
60%	4.4	3.4	3.5	3.5	3.4	2.8
70%	5	3.9	4	4	3.9	3.2
75%	5.4	4.1	4.3	4.2	4.2	3.4

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

HRVs & Gas-fired Furnaces (PCF 1836)

- Existing code: ECM Points for HRVs

Table 9.36.8.9.
Energy Conservation Measures and Points for Ventilation Systems
Forming Part of Sentence 9.36.8.9.(4)

Energy Conservation Measures for Ventilation Systems – Sensible Heat-Recovery Efficiency, SRE(1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
60% ≤ SRE < 65%	0.7	0.7	0.7	0.6	0.8	0.4
65% ≤ SRE < 75%	2.1	2.1	2.2	1.7		1.2
75% ≤ SRE < 84%	3.4	3.2	3.5	2.7	3.7	1.8

Notes to Table 9.36.8.9.:
(1) SRE = sensible recovery efficiency measured at an outside air test temperature of 0°C

Edmonton Example House

PRESCRIPTIVE TRADE-OFF – "POINTS"

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Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

HRVs & Gas-fired Furnaces (PCF 1836)

- Newly proposed: points for Gas-fired furnaces

Annual Fuel Utilization Efficiency (AFUE)	Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8
	Energy Conservation Points					
96%	0.4	0.4	0.4	0.5	0.5	0.5
98%	1.1	1.3	1.3	1.4	1.5	1.6

PRESCRIPTIVE TRADE-OFF – "POINTS"

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Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Points for Oil-fired Furnaces (PCF 2000)

- Proposed new points

Type of Equipment	Min. Performance	Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8
		Energy Conservation Points					
Oil-fired warm air furnaces	87% AFUE	1.2	1.4	1.4	1.5	1.6	1.7
	92% AFUE	-	-	-	5.4	5.5	5.9

- Values for milder climate zones are coming
- No points for more efficient oil furnaces
- Impact of GHG emission requirements

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Air Source Heat Pumps (PCF 2001 – Space Heating)

- Lookup points for **heat pumps Table 9.36.8.9.-B**

Table [9.36.8.9.-B]
Energy Conservation Measures and Points for Air-Source Heat Pumps Forming Part of Sentence 9.36.8.9.(5)

Energy Conservation Measures for Air Source Heat Pumps – Heating Seasonal Performance Factor for Region V, HSPF2 V (1)	Minimum Air Source Heat Pump Capacity/Load Fraction (2)	Heating Degree-Days of Building Location, in Celsius Degree-Days					
		Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
		Energy Conservation Points					
5.2	60%	28.6	22.9	20.5	18.4	19.9	10.7
6.7		30.8	25.3	22.9	20.6	22.2	12.3
7.6		32.1	26.8	24.4	22.0	23.6	13.3
8.3		33.1	28.0	25.6	23.0	24.7	14.0
9.6		35.0	30.1	27.7	24.9	26.7	15.4

OR

Calculate points for **heat pumps Table 9.36.8.9.-C**

Table [9.36.8.9.-C]
Equations to Calculate Points for Air-Source Heat Pumps Forming Part of Sentence 9.36.8.9.(5)

Heating Degree-Days of Building Location, in Celsius Degree-Days					
Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Energy Conservation Points					
17.7+(0.0647 F) +(1.46 HSPF2 V) (1)	2.4+(0.198 F) +(1.65 HSPF2 V)	(0.198 F) + (1.65 HSPF2 V)	(0.180 F) + (1.47 HSPF2 V)	3.0+(0.147 F) +(1.55 HSPF2 V)	-4.7+(0.165 F) +(1.06 HSPF2 V)

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Corrected ECM points for Airtightness

- More accurate and correct**!** points for airtightness in PCF 1888

Energy Conservation Measures and Points for Airtightness - Detached homes						
Detached	Zone 4	Zone 5	Zone 6	Zone 7a	Zone 7b	Zone 8
2.5 ACH	–	–	–	–	–	–
2.0 ACH	~~2.0~~ **2.2**	~~3.4~~ **3.2**	**3.5**	~~4.6~~ **3.8**	~~6.1~~ **4.3**	~~6.1~~ **4.8**
1.5 ACH	~~4.0~~ **4.3**	~~6.7~~ **6.3**	~~7.0~~ **6.9**	~~9.3~~ **7.6**	~~12.1~~ **8.5**	~~12.11~~ **9.7**
1.0 ACH	~~5.9~~ **6.5**	~~10.1~~ **9.6**	**10.5**	~~13.9~~ **11.4**	~~18.0~~ **12.9**	~~18.0~~ **14.7**
0.6 ACH	~~7.6~~ **8.3**	~~13.0~~ **12.3**	**13.4**	~~17.8~~ **14.7**	~~22.7~~ **16.5**	~~22.7~~ **18.8**
	✓	← Possible Implications for Tier 2 →				
Attached	Zone 4	Zone 5	Zone 6	Zone 7a	Zone 7b	Zone 8
3.0 ACH	–	–	–	–	–	–
2.5 ACH	~~–~~ **2.1**	~~–~~ **3.2**	~~–~~ **3.5**	~~–~~ **3.8**	~~–~~ **4.3**	~~–~~ **4.8**
2.0 ACH	~~2.2~~ **4.3**	~~3.0~~ **6.4**	~~3.5~~ **6.9**	~~4.6~~ **7.6**	~~4.1~~ **8.5**	~~4.6~~ **9.6**
1.5 ACH	~~4.0~~ **6.4**	~~6.0~~ **9.6**	~~6.9~~ **10.4**	~~9.1~~ **11.5**	~~8.2~~ **12.8**	~~9.3~~ **14.5**
1.0 ACH	~~6.0~~ **8.6**	~~9.1~~ **12.8**	~~10.4~~ **14.0**	~~13.6~~ **15.4**	~~12.3~~ **17.2**	~~14.2~~ **19.6**
0.6 ACH	~~7.7~~ **10.4**	~~11.6~~ **15.6**	~~13.3~~ **17.0**	~~17.4~~ **18.7**	~~15.6~~ **20.9**	~~18.2~~ **23.8**
	✓					

Implications:

Edmonton Example:
Now: ~1.79 ACH = 6.1 points

PRESCRIPTIVE TRADE-OFF – "POINTS"

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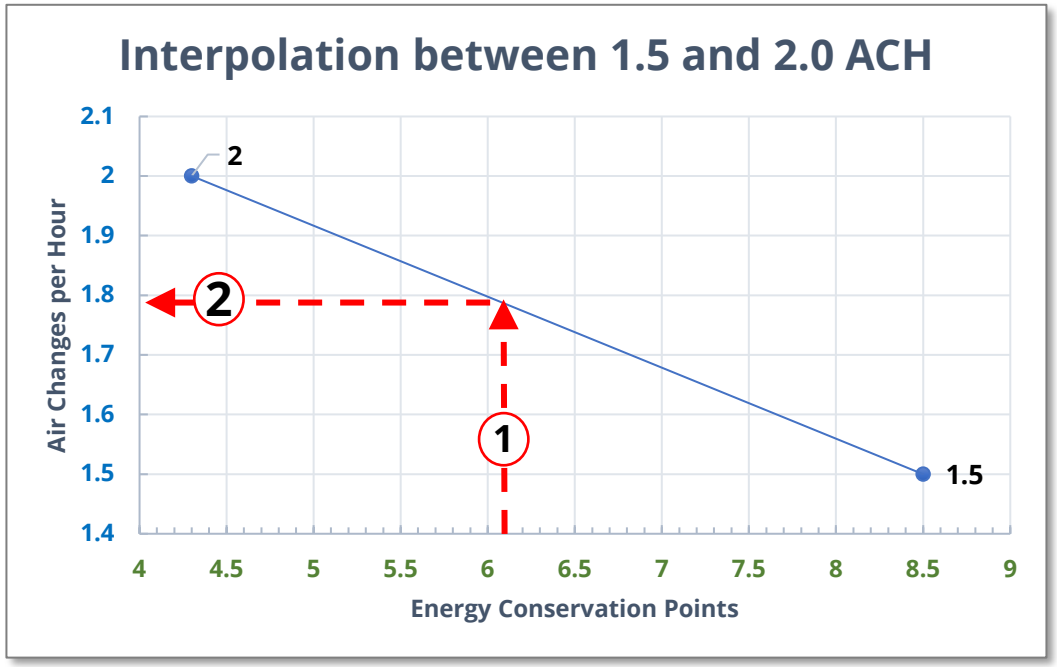
Linear interpolation permitted (PCF 1834)

- Graphic Method
  - finding which **ACH** gives **6.1 Points**



- Calculation Method
  - Finding which **ACH** gives **6.1 Points**

$$Y = Y1 + \frac{(Y2-Y1)}{(X2-X1)} * (X - X1)$$

$$Y = 1.5 + \frac{(2.0-1.5)}{(4.3-8.5)} * (6.1 - 8.5)$$

$$Y = 1.5 + \frac{(0.5)}{(-4.2)} * (-2.4)$$

$$1.786 = 1.5 + (0.119 * 2.4)$$

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Fenestration & Doors (PCF 1889)

- New Points for high performance windows and doors added

Table [9.36.8.6.] 9.36.8.6.
Energy Conservation Measures and Points for Fenestration and Doors
Forming Part of Article 9.36.8.6.

Energy Conservation Measures for Fenestration and Doors (1)		Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
Maximum U-values, W/(m²×K) (2)	Minimum Energy Ratings (3)	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
		Energy Conservation Points					
1.61	25	1.9	1.8	–	–	–	–
1.44	29	3.8	3.6	1.6	1.8	–	–
1.22	34	6.9	7.0	4.6	5.5	3.2	3.4
1.05	40	10.8	11.7	8.8	8.9	6.1	5.9
0.94	42	12.3	13.4	10.5	10.7	8.0	7.8
0.82	44	14.0	15.2	12.4	12.6	10.1	9.8

Cost Impact!

"[...] 5.9 and 15.2 energy conservation points [...] cost between $63 and $116 per m² of fenestration compared to the cost of fenestration required to meet the Code minimum. [U=1.61]"

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Existing Code has points for **Walls Above Ground – Table 9.36.8.5.–A**

Table 9.36.8.5.
Energy Conservation Measures and Points for Above-Ground Walls(1)
Forming Part of Sentences 9.36.8.5.(2), (6) and (7)

Energy Conservation Measures for Above-Ground Walls – Minimum Effective RSI Values, (m²×K)/W	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
2.97	2.0	–	–	–	–	–
3.08	3.2	1.4	1.6	2.1	–	–
3.69	7.4	5.4	6.2	6.7	5.4	5.2
3.85	8.2	6.0	6.9	7.4	6.2	6.0
3.96	8.9	6.8	7.7	8.2	7.0	6.8
4.29	10.2	8.1	9.2	9.7	8.6	8.4
4.40	10.8	8.7	9.9	10.3	9.3	9.1
4.57	11.4	9.3	10.6	11.1	10.1	9.9
4.73	11.9	9.7	11.1	11.5	10.6	10.4
4.84	12.3	10.2	11.6	12.1	11.2	10.9
5.01	12.9	10.7	12.2	12.7	11.8	11.6
5.45	14.0	11.9	13.6	14.0	13.3	13.1

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Proposed new points for **Ceilings Below Attics – Table 9.36.8.5.–B**

Table [9.36.8.5.-B] 9.36.8.5.
Energy Conservation Measures and Points for Ceilings Below Attics

Energy Conservation Measures for Ceilings Below Attics– Minimum Effective RSI Values, (m^2×K)/W (1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 ≤ 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
8.67	1.2	–	–	–	–	–
10.43	2.1	0.9	0.9	—	–	–
12.19	2.7	1.6	1.6	0.7	0.8	0.8
13.96	3.1	2.1	2.1	1.2	1.4	1.3

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Proposed new points for
  Cathedral Ceilings & Flat Roofs – Table 9.36.8.5.–C

Table [9.36.8.5.-C] 9.36.8.5.
Energy Conservation Measures and Points for Cathedral Ceilings and Flat Roofs

Energy Conservation Measures for Cathedral Ceilings and Flat Roofs– Minimum Effective RSI Values, (m^2×K)/W (1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 ≤ 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
5.02	0.5	0.5	0.5	—	–	–
5.80	1.4	1.5	1.6	1.0	1.1	1.1
6.49	2.0	2.2	2.3	1.8	1.9	1.9

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Proposed new points for **Combined Ceilings Below Attics and Cathedral Ceilings/Flat Roofs – Table 9.36.8.5.–D**

Table [9.36.8.5.-D] 9.36.8.5.
Energy Conservation Measures and Points for Combined Ceilings Below Attics and Cathedral Ceilings or Flat Roofs

Energy Conservation Measures for Ceilings Below Attics– Minimum Effective RSI Values, $(m^2 \times K)/W$ (1)	Energy Conservation Measures for Cathedral Ceilings and Flat Roofs– Minimum Effective RSI Values, $(m^2 \times K)/W$ (1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
		Zone 4 ≤ 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
		Energy Conservation Points					
8.67	5.80	1.3	–	–	–	–	–
10.43	5.80	1.8	1.1	1.1	—	–	–
12.19	5.80	2.2	1.5	1.5	0.8	0.8	0.8
13.96	5.80	2.5	1.8	1.8	1.1	1.2	1.1

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Proposed new points for
  Exposed Floors ≥ 30m² – Table 9.36.8.5.–E

Table [9.36.8.5.-E] 9.36.8.5.
Energy Conservation Measures and Points for Exposed Floors (≥ 30m²)

Energy Conservation Measures for Exposed Floors – Minimum Effective RSI Values, (m²×K)/W (1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 ≤ 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone ZA 5000 to 5999	Zone ZB 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
5.02	0.2	0.2	0.2	—	–	–
5.42	0.5	0.5	0.5	0.2	0.3	0.3
6.77	1.1	1.1	1.1	0.9	1.0	0.9

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Existing points for
  Below Grade or in Contact with the Ground – Table 9.36.8.7-A

Table 9.36.8.7.
Energy Conservation Measures and Points for Opaque Building Assemblies Below-Grade or In Contact with Ground
Forming Part of Sentences 9.36.8.7.(3) and (4)

Energy Conservation Measures for *Foundation* Walls – Minimum Effective RSI Values, (m²×K)/W	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
2.98	1.7	–	–	–	–	–
3.09	1.8	0.2	0.2	0.2	0.2	–
3.46	2.2	0.6	0.8	0.6	0.7	–
3.90	2.6	1.2	1.4	1.1	1.3	–

PRESCRIPTIVE TRADE-OFF – "POINTS"

Canadian Home Builders' Association

Targets	T1	T2	T3	T4	T5
Total	0	10	20	40	75
Envelope	0	0	5	10	15

Building Envelope (PCF 1923)

- Proposed New Points for **Slabs-on-Grade Table 9.36.8.7- B**

Table [9.36.8.7.-B] 9.36.8.7.
Energy Conservation Measures and Points for Slabs-on-Grade

Energy Conservation Measures for Slabs-on-Grade– Minimum Effective RSI Values, $(m^2 \times K)/W$ (1)	Heating Degree-Days of *Building* Location, in Celsius Degree-Days					
	Zone 4 ≤ 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Energy Conservation Points					
2.84	1.0	0.8	0.9	–	–	–
3.72	1.6	1.3	1.4	—	—	–
4.62	2.0	1.7	1.8	0.5	0.5	–

Canadian Home Builders' Association

Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - ✓ **Prescriptive Trade Off Method – "Points" (→ 12:30)**
   - **Prescriptive Tier 5 – "Packages" (10 min)**
   - **Solar Heat Gain / Peak Cooling (10 min)**
   - **Greenhouse Gas Emissions (20 min)**
   - **Heat Pumps (10 min)**
3. How to Submit Comments for Public Review

PRESCRIPTIVE TIER 5 – "PACKAGES"

Canadian Home Builders' Association

PCF 1830

- New Section
- Application
  - only for Tier 5!
    (we heat that other tiers may be in the works…)
  - housing only!
- Prerequisites:
  - Prescriptive + Airtightness Test
    - AL4A = 1.0 ACH
    - AL4B = 1.5 ACH
  - HRV or ERV @ 75% SRE
  - ASHP as primary space heating @ 75%
  - Min 1 Drain Water Heat Recovery unit
  - Electric Heat Pump Water Heater

- "Packages" (code tables)
  - RSI / U-Values, Equipment efficiency
  - Small home relaxations
  - Electric & Dual Energy Packages
  - *like Energy Star Builder Option Packages*
- Several special exceptions
  (doors, glass block. Tubular Daylighting Devices (TDD), etc)

- Cost Impact Analysis
  - $30,000 to $40,000 more than Tier 1 house!
  - Analysis
    - 2500 ft^2 house/walk-out basement
    - base case = electric
  - Costing data – from October 2020 ?

PRESCRIPTIVE TIER 5 – "PACKAGES"

Canadian Home Builders' Association

Fully Electric Packages

	Table 9.36.9.8.–A Homes > 300m³							Table 9.36.9.8.–C Homes < 300m³						
	Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8		Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8
Ceilings Below Attics (Min RSI Value)	10.43	12.19	12.19	12.19	12.19	12.19		8.67	8.67	8.67	10.43	10.43	10.43
Cathedral Ceilings and Flat Roofs (Min RSI Value)	4.67	5.02	5.02	5.02	5.80	5.80		5.02	5.02	5.02	5.02	5.02	5.02
Floors Over Unheated Spaces (Min RSI Value)	4.67	5.02	5.02	5.02	5.42	5.42		5.02	5.02	5.02	5.02	5.02	5.02
Walls Above Grade (Min RSI Value)	5.69	5.69	5.69	5.77	6.65	6.65	!	3.23	3.85	3.85	3.85	4.80	4.80
Foundation Walls (Min RSI Value)	3.46	3.46	3.97	4.78	5.22	5.22		3.46	3.46	3.97	4.78	5.22	5.22
Unheated Floors above frost line (Min RSI Value)	1.96	1.96	1.96	1.96	2.84	2.84		1.96	1.96	1.96	1.96	1.96	1.96
Unheated Floors below frost line (Min RSI Value)	1.96	1.96	1.96	1.96	1.96	1.96		1.96	1.96	1.96	1.96	1.96	1.96
Heated and unheated Floors on permafrost	-	-	-	-	4.62	4.62		-	-	-	-	4.44	4.44
Heated Floors (Min RSI Value)	2.84	2.84	2.84	3.72	3.72	4.62		2.84	2.84	2.84	3.72	3.72	4.62
Slabs-on-grade with an integral footing	1.96	3.72	3.72	3.72	4.62	4.62		2.84	2.84	2.84	3.72	3.72	4.62
Windows & Sliding Glass Doors (Max. U, Min ER)	1.05 or 40	1.05 or 40	0.94 or 42	0.94 or 42	0.82 or 44	0.82 or 44		1.05 or 40	1.05 or 40	0.94 or 42	0.94 or 42	0.82 or 44	0.82 or 44
Skylight (Maximum U-Value)	2.02	2.02	1.84	1.84	1.61	1.61		2.02	2.02	1.84	1.84	1.61	1.61
Space Heating Equipment — Heat Pump	HSPF V ≥ 8.7 / HSPF2 V ≥ 6.4 / SEER2 ≥ 15.2 / EER2 ≥ 11.7 Percent of Heating Capacity at –15 °C (5 °F) ≥ 70% of that at 8.3 °C (47° F) / COPh ≥ 1.5 at –15 °C(5 °F).							HSPF V ≥ 8.7 / HSPF2 V ≥ 6.4 / SEER2 ≥ 15.2 / EER2 ≥ 11.7 Percent of Heating Capacity at –15 °C (5 °F) ≥ 70% of that at 8.3 °C (47° F) / COPh ≥ 1.5 at –15 °C(5 °F).					
Electric Heat Pump Water Heater	UEF ≥ 2.95							UEF ≥ 2.95					

PRESCRIPTIVE TIER 5 – "PACKAGES"

Canadian Home Builders' Association

Dual-energy "Packages"

	Table 9.36.9.8-C Homes > 300m³							Table 9.36.9.8-D Homes < 300m³					
	Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8		Zone 4	Zone 5	Zone 6	Zone 7A	Zone 7B	Zone 8
Ceilings Below Attics (Min RSI Value)	10.43	12.19	12.19	12.19	12.19	12.19		8.67	8.67	8.67	10.43	10.43	10.43
Cathedral Ceilings and Flat Roofs (Min RSI Value)	4.67	5.02	5.02	5.02	5.80	5.80		5.02	5.02	5.02	5.02	5.02	5.02
Floors Over Unheated Spaces (Min RSI Value)	4.67	5.02	5.02	5.02	5.42	5.42		5.02	5.02	5.02	5.02	5.02	5.02
Walls Above Grade (Min RSI Value)	5.69	5.69	5.69	5.77	6.65	6.65		3.23	3.85	3.85	3.85	4.80	4.80
Foundation Walls (Min RSI Value)	3.46	3.46	3.97	4.78	5.22	5.22		3.46	3.46	3.97	4.78	5.22	5.22
Unheated Floors above frost line (Min RSI Value)	1.96	1.96	1.96	1.96	2.84	2.84	!	1.96	1.96	1.96	1.96	1.96	1.96
Unheated Floors below frost line (Min RSI Value)	1.96	1.96	1.96	1.96	1.96	1.96		1.96	1.96	1.96	1.96	1.96	1.96
Heated and unheated Floors on permafrost	-	-	-	-	4.62	4.62		-	-	-	-	4.44	4.44
Heated Floors (Min RSI Value)	2.32	3.72	3.72	3.72	4.62	4.62		2.84	2.84	2.84	3.72	3.72	4.62
Slabs-on-grade with an integral footing	1.96	3.72	3.72	3.72	4.62	4.62		2.84	2.84	2.84	3.72	3.72	4.62
Windows & Sliding Glass Doors (Max. U, Min ER)	1.05 or 40	1.05 or 40	0.94 or 42	0.94 or 42	0.82 or 44	0.82 or 44		1.05 or 40	1.05 or 40	0.94 or 42	0.94 or 42	0.82 or 44	0.82 or 44
Skylight (Maximum U-Value)	2.02	2.02	1.84	1.84	1.61	1.61		2.02	2.02	1.84	1.84	1.61	1.61
Space Heating Equipment — Heat Pump	HSPF V ≥ 8.7 / HSPF2 V ≥ 6.4 / SEER2 ≥ 15.2 / EER2 ≥ 11.7 Percent of Heating Capacity at –15 °C (5 °F) ≥ 70% of that at 8.3 °C (47° F) / COPh ≥ 1.5 at –15 °C (5 °F).							HSPF V ≥ 8.7 / HSPF2 V ≥ 6.4 / SEER2 ≥ 15.2 / EER2 ≥ 11.7 Percent of Heating Capacity at –15 °C (5 °F) ≥ 70% of that at 8.3 °C (47° F) / COPh ≥ 1.5 at –15 °C (5 °F).					
Electric Heat Pump Water Heater	UEF ≥ 2.95							UEF ≥ 2.95					
Supplementary Heating System													
Oil-fired Furnaces	AFUE ≥ 87 %							AFUE ≥ 87 %					
Gas-fired Furnaces	See Table 9.36.4.2.							See Table 9.36.4.2.					

Canadian Home Builders' Association

Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - ✓ **Prescriptive Trade Off Method – "Points" (→ 12:30)**
   - ✓ **Prescriptive Tier 5 – "Packages" (→ 12:40)**
   - • **Solar Heat Gain / Peak Cooling (10 min)**
   - • **Greenhouse Gas Emissions (20 min)**
   - • **Heat Pumps (10 min)**
3. How to Submit Comments for Public Review

SOLAR HEAT GAIN / PEAK COOLING

Canadian Home Builders' Association

PCF 1823

- **9.36.2.7 Prescriptive Path** – Maximum Solar Heat Gain Coefficient (SHGC)
  - So that energy efficient design does not contribute to overheating risk

Table 9.36.2.7.-B Solar Heat Gain Coefficient of Fenestration and Doors	
Fenestration and door area to gross wall area ratio (FDWR)	Maximum solar heat gain coefficient
FDWR < 17%	0.45
17% < FDWR < 22%	0.40
FDWR > 22%	0.26!

- **9.36.5.3. Performance Path**
  - Peak Cooling Criteria Relaxed & Corrected
    - **Install a space-cooling system,** or
    - **Where no space-cooling system: calculated cooling load**
      - peak cooling load not greater than 110% of the reference house, or
      - a design cooling intensity not greater than 4.5 W/m^3

SUGGEST IMMEDIATE PROVINCIAL CODE ADOPTION!

Canadian Home Builders' Association

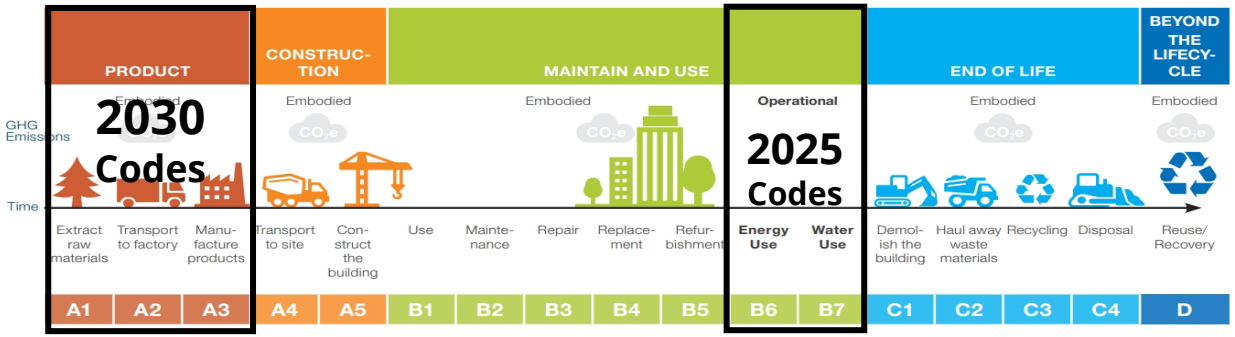
Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - ✓ **Prescriptive Trade Off Method – "Points" (→ 12:30)**
   - ✓ **Prescriptive Tier 5 – "Packages" (→ 12:40)**
   - ✓ **Solar Heat Gain / Peak Cooling (→ 12:50)**
   - • **Greenhouse Gas Emissions (20 min)**
   - • **Heat Pumps (7 min)**
3. How to Submit Comments for Public Review

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

- Operational GHG emissions
  - proposed for **2025 Codes**
  - emissions from operation of equipment for space heating and cooling and water heating (B6/7)



- Embodied GHG
  - scheduled for **2030 Codes**
  - emissions from the production and generation of building materials (A1-A3) but not the construction process (A4/5)

General Requirements

- New **NBC** Objective & Functional Statements (PCF 1843)
- New **NECB** Objective & Functional Statements (PCF 1820)
- Application of GHG Requirements in **NECB** (PCF 1989)
- Abbreviations in **NECB** (PCF 2016)

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

General Requirements

- New **NBC** Objective & Functional Statements (PCF 1843)

OE2 Greenhouse Gas Emissions

An objective of this Code is to limit the probability that, as a result of the design or construction of the building, greenhouse gas emissions will have an unacceptable effect on the environment. The risks of unacceptable effect on the environment due to greenhouse gas emissions addressed in this Code are those caused by—

- **OE2.1** - excessive emissions of greenhouse gases

F101 To limit operational greenhouse gas emissions.

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

General Requirements

- New **NBC** Objective & Functional Statements (PCF 1843)

OE2 Greenhouse Gas Emissions

An objective of this Code is to limit the probability that, as a result of the **intended operation and the selection a high-intensity energy source,** greenhouse gas emissions will have an unacceptable effect on the environment. The risks of unacceptable effect on the environment due to greenhouse gas emissions addressed in this Code are those caused by—

- **OE2.1 selecting energy sources for space-heating and cooling equipment and water heating equipment that have high-intensity emissions**

F101 To control the type of energy sources used in space-conditioning and water heating systems.

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

Performance Path

(PCF 2003 NECB, PCF 2004 NBC 9.36.)

- Take Total Space Conditioning and Water Heating Energy **Demand Loads** from Model
- Multiply by regional **Emission Factor** based on proposed equipment fuel
- Compare against **Reference**:
  - Reference Emission Factor for Space Heating = **235g** CO2e /kWh
  - Reference Emission Factor for Water Heating = **260g** CO2e /kWh
- **No Credit for Renewables!**

Emission Performance Level	Improvement (%)
A	**≥ 90%**
B	**≥ 75%**
C	**≥ 50%**
D	**≥ 25%**
E	**≥ 10%**
F	**≥ 0%**

	GHG Emission Factors (g CO_2e /kWh)	
Province or Territory	**Electricity**	**Utility Gas**
Alberta	181.86	189
British Columbia	1.32	190
Manitoba	0.00	185
New Brunswick	77.88	185
Newfoundland and Labrador	11.08	185
Northwest Territories	6.82	185
Nova Scotia	161.64	190
Nunavut	465.16	190
Ontario	57.90	185
Prince Edward Island	80.42	185
Quebec	0.38	186
Saskatchewan	146.60	185
Yukon	25.00	190

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

Prescriptive Path

(PCF 2026, NBC only, not certain!)

- Lookup Table Concept for each Performance Level
- based on
  - Energy source for Space Heating
  - Energy source for Water Heating
  - Electricity Emission Factor
  - (sometimes Climate Zone)

- **No credit for Renewables!**

Excerpts, samples…

Minimum Energy Performance Tier for GHG Emissions **Performance Level B**				
Energy Source Space Heating	Energy Source Water Heating	Electricity Emission Factor (g CO_2e/kWh)	Climate Zone	Minimum **Energy** Performance Tier
(any) Electricity	(any) Electricity	< 25	Any	2
		25 < EF < 100	Any	4
		> 100	Any	5

Minimum Energy Performance Tier for GHG Emissions **Performance Level D**				
Energy Source Space Heating	Energy Source Water Heating	Electricity Emission Factor (g CO_2e/kWh)	Climate Zone	Minimum **Energy** Performance Tier
Natural Gas	Natural Gas	Any	Any	4
Electricity	Electricity	GEF ≤ 170	Any	2
Natural Gas	Electricity	GEF ≤ 100	Any	1
Electric Heat Pump	Electric Heat Pump or Storage Tank	GEF < 200	Any	1

GREENHOUSE GAS EMISSIONS

Canadian Home Builders' Association

Quick single-home study

Province or Territory	GHG Emission Performance Levels by Fuel Options			
	All-Gas	All-Electric	Heat Pump + Electr. Backup	Heat Pump + Gas Backup
Alberta	F	E	D	D
British Columbia	F	A	A	C
Manitoba	F	A	A	C
New Brunswick	F	C	B	C
Newfoundland and Labrador	F	A	A	C
Northwest Territories	F	A	A	C
Nova Scotia	F	D	C	D
Nunavut	F	-	-	E
Ontario	F	C	B	C
Prince Edward Island	F	C	B	C
Quebec	F	A	A	C
Saskatchewan	F	D	C	C
Yukon	F	B	A	C

Canadian Home Builders' Association

Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - ✓ **Prescriptive Trade Off Method – "Points" (→ 12:30)**
   - ✓ **Prescriptive Tier 5 – "Packages" (→ 12:40)**
   - ✓ **Solar Heat Gain / Peak Cooling (→ 12:50)**
   - ✓ **Greenhouse Gas Emissions (→ 13:10)**
   - • **Heat Pumps (10 min)**
3. How to Submit Comments for Public Review

HEAT PUMP WATER HEATERS

Canadian Home Builders' Association

PCF 2011

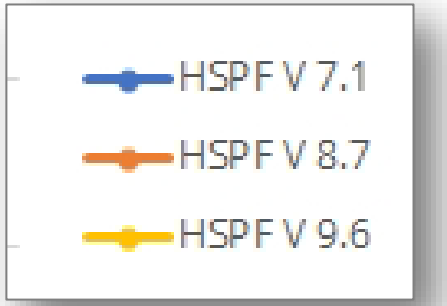
- Update to HPWH Performance Rating Metric (EF -> UEF)
- Alignment with latest Performance Testing Standard (CSA C745:20)
- Not intended to make the requirement more stringent

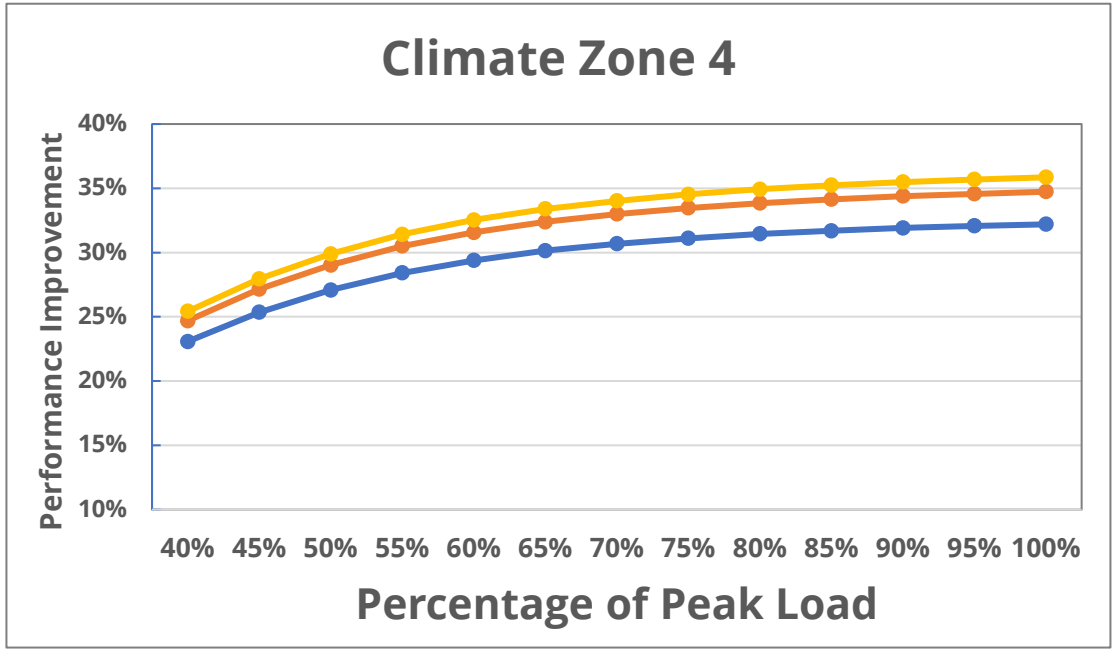
Type of Equipment	Input[1]	Performance Testing Standard	Performance Requirement[2]
Storage-Type Service Water Heaters			
Electric	≤ 12 kW (V_r > 50 L but ≤ 270 L)	CAN/CSA-C191	SL ≤ 35 + (0.20 V_r) (top inlet)
			SL ≤ 40 + (0.20 V_r) (bottom inlet)
	≤ 12 kW (V_r > 270 L but ≤ 454 L)		SL ≤ (0.472 V_r) – 38.5 (top inlet)
			SL ≤ (0.472 V_r) – 33.5 (bottom inlet)
	>12 kW	ANSI Z21.10.3/CSA 4.3 or DOE 10 CFR, Part 431, Subpart G, Appendix B	SL ≤ 0.30 +(102.2 V_s)
Heat pump water heaters	≤ 24 A and ≤ 250 V	CAN/CSA-C745	EF ≥ 2.1
Gas-fired[3]	≤ 22 kW and first-hour rating < 68 L	CAN/CSA-P.3	UEF ≥ 0.3456 – (0.00053 V_s)[4]
	≤ 22 kW and first-hour rating ≥ 68 L but < 193 L		UEF ≥ 0.5982 – (0.00050 V_s)[4]
	≤ 22 kW and first-hour rating ≥ 193 L but < 284 L		UEF ≥ 0.6483 – (0.00045 V_s)[4]
	≤ 22 kW and first-hour rating ≥ 284 L		UEF ≥ 0.6920 – (0.00034 V_s)[4]
	> 22 kW but ≤ 30.5 kW and V_r ≤ 454 L		UEF ≥ 0.8107 – (0.00021 V_s)[4]
	> 22 kW	DOE 10 CFR, Part 431, Subpart G, Appendix A	E_t ≥ 90% and SL ≤ 0.84 [(1.25 Q) + (16.57 $\sqrt{V_r}$)]
Oil-fired	≤ 30.5 kW and first-hour rating < 68 L	CAN/CSA-B211 for EF or CAN/CSA-P.3 for UEF	EF ≥ 0.68 – (0.0005 V_r) or UEF ≥ 0.2509 – (0.00032 V_s)
	≤ 30.5 kW and first-hour rating ≥ 68 L but < 193 L		EF ≥ 0.68 – (0.0005 V_r) or UEF ≥ 0.5330 – (0.00042 V_s)
	≤ 30.5 kW and first-hour rating ≥ 193 L but < 284 L		EF ≥ 0.68 – (0.0005 V_r) or UEF ≥ 0.6078 – (0.00042 V_s)
	≤ 30.5 kW and first-hour rating ≥ 284 L		EF ≥ 0.68 – (0.0005 V_r) or UEF ≥ 0.6815 – (0.00037 V_s)
	> 30.5 kW but ≤ 40.99 kW and V_r ≤ 454 L		UEF ≥ 0.6740 – (0.00035 V_s)
	> 40.99 kW	DOE 10 CFR, Part 431, Subpart G, Appendix A	E_t ≥ 80% and SL ≤ (1.25 Q) + (16.57 $\sqrt{V_r}$)

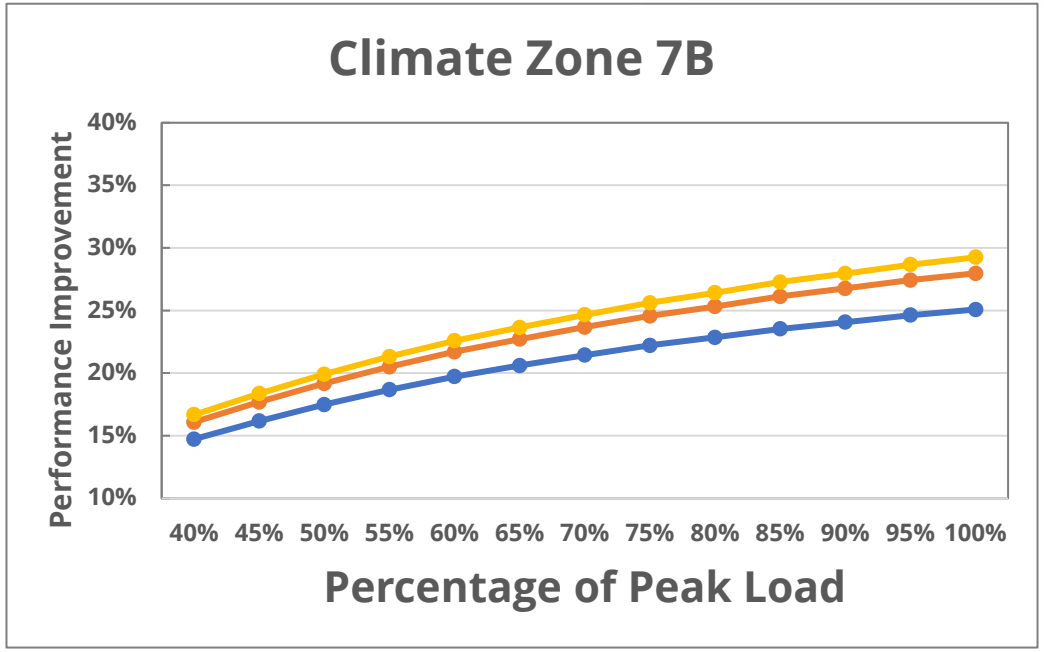
HEAT PUMP EFFICIENCIES (SPACE HEATING)

Canadian Home Builders' Association

- Energy Savings Potential of Heat Pumps vary based on:
  - Energy Performance Rating (HSPF2 Region V)
  - Operating Conditions (Outdoor Temperature)
  - Capacity of the System vs Design Heating Load (F280)







HEAT PUMP EFFICIENCIES (SPACE HEATING)

Canadian Home Builders' Association

PCF 2001

- Ultimate flexibility
- Modulate points based on
  - Performance Rating
  - System Capacity

Table [9.36.8.9.-C]
Equations to Calculate Points for Air-Source Heat Pumps Forming Part of Sentence 9.36.8.9.(5)

Heating Degree-Days of Building Location, in Celsius Degree-Days					
Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Energy Conservation Points					
17.7+(0.0647 F) +(1.46 HSPF2 V) (1)	2.4+(0.198 F) +(1.65 HSPF2 V)	(0.198 F) + (1.65 HSPF2 V)	(0.180 F) + (1.47 HSPF2 V)	3.0+(0.147 F) +(1.55 HSPF2 V)	-4.7+(0.165 F) +(1.06 HSPF2 V)

Note to Table [9.36.8.9.-C] :

(1) The symbols and abbreviations used in this row have the following meanings:
F = rated capacity of air source heat pump at conditions of 8.3 °C divided by required capacity of heating appliances determined in accordance with Sentence 9.33.5.1.(1), in %
HSPF2 V = heating seasonal performance factor for Region V

HEAT PUMP EFFICIENCIES

Canadian Home Builders' Association

PCF 2001

- Heat pump has to meet 60% design heat load

Table [9.36.8.9.-B]
Energy Conservation Measures and Points for Air-Source Heat Pumps Forming Part of Sentence 9.36.8.9.(5)

Energy Conservation Measures for Air Source Heat Pumps – Heating Seasonal Performance Factor for Region V, HSPF2 V (1)	Minimum Air Source Heat Pump Capacity/Load Fraction (2)	Heating Degree-Days of Building Location, in Celsius Degree-Days					
		Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
		Energy Conservation Points					
5.2	60%	28.6	22.9	20.5	18.4	19.9	10.7
6.7		30.8	25.3	22.9	20.6	22.2	12.3
7.6		32.1	26.8	24.4	22.0	23.6	13.3
8.3		33.1	28.0	25.6	23.0	24.7	14.0
9.6		35.0	30.1	27.7	24.9	26.7	15.4

Notes to Table [9.36.8.9.-B] :

(1) HSPF2 V = heating seasonal performance factor for Region V

(2) Air-Source Heat Pump Capacity/Load Fraction = rated capacity of air-source heat pump at conditions of 8.3 °C divided by required capacity of heating appliances determined in accordance with Sentence 9.33.5.1.(1)

Canadian Home Builders' Association

Proposed Code Changes
Deep Dive

1. Where we are in the code process
2. Deep Dive on Energy Efficiency and GHG Emissions
   - ✓ **Prescriptive Trade Off Method – "Points" (→ 12:30)**
   - ✓ **Prescriptive Tier 5 – "Packages" (→ 12:40)**
   - ✓ **Solar Heat Gain / Peak Cooling (→ 12:50)**
   - ✓ **Greenhouse Gas Emissions (→ 13:10)**
   - ✓ **Heat Pumps (→ 13:20)**
3. How to Submit Comments for Public Review

How to Enter Public Review Comments

Canadian Home Builders' Association
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Canadian Home Builders' Association

CBHCC | CCHCC

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Home > Public review of proposed changes to the 2020 National Model Codes

Public review of proposed changes to the 2020 National Model Codes

This national public review runs from **October 23 to December 18, 2023**.

The Canadian Board for Harmonized Construction Codes (CBHCC) invites code users, the Codes community, and the public to participate in the fall 2023 public review of proposed changes to the 2020 editions of the National Model Codes. The proposed changes included in this public review address the following topics in the National Building Code of Canada, the National Fire Code of Canada, the National Energy Code of Canada for Buildings, and the National Plumbing Code of Canada:

- alterations to existing buildings
- greenhouse gas emissions
- radon
- airtightness
- accessibility – illumination levels and projection of protruding building elements
- building envelope – thermal bridging and insulation
- building fire safety
- climatic loads
- combustible construction – fire protection and safety
- encapsulated mass timber construction
- HVAC equipment efficiency
- large farm buildings
- hazardous materials and activities
- plumbing materials and equipment
- fire protection
- use and egress
- penetrations
- prescriptive trade-off path
- vegetated roof assemblies
- windows, doors and skylights
- environmental separation standards
- lighting
- fenestration – thermal characteristics

See the **summary of key proposed changes** below for more details.

The purpose of this public review is to:

- provide code users, the Codes community, and the public with a detailed look at proposed technical changes, and
- seek comment on each proposed technical change as to whether it should be approved, altered or withdrawn.

The public review will close at **11:59 pm PST on December 18, 2023, after which comments will no longer be accepted**.

The result of the public review process is a collection of comments on proposed code changes. The comments are sorted and

CHBA PROCESS FOR PUBLIC REVIEW COMMENTS

Canadian Home Builders' Association

1. **CHBA communicates** Public Review to its members
2. CHBA National staff reviews the proposed changes and **drafts comments**
3. CHBA holds **webinar series** for members and gathers broad feedback
4. **TRC-Mgmt Committee reviews draft comments and gathers provincial HBA feedback**
5. National **staff revises and submits final comments**
   (Local/Provincial HBAs or individual members may want to submit reinforcing comments)

CHBA's aim is to ensure alignment with all three levels of the Association before submitting comments.

PUBLIC REVIEW COMMENTS

Canadian Home Builders' Association

Well-written comments can make a big difference!

- Describe how the proposed change applies to your situation
- Describe what works, what doesn't
- Explain why you can't support the change
- **Propose your own modifications,** suggest alternative approaches
- Justify your proposed modifications/alternatives
- Support them with evidence, or cost, if possible
- Be concise and precise
- If your comment gets long
  - stick to one comment/idea per paragraph
  - number your comments/ideas/issues, and/or
  - use headings

CBHCC Canadian Board for Harmonized Construction Codes | CCHCC Comité canadien de l'harmonisation des codes de construction

Go to CBHCC's Public Review Site

Questions?

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