Lightspark

CANADA CLIMATE RESILIENCE FRAMEWORK

A National Standard for Rewarding Resilience

How Canada can systematically reduce climate losses while keeping home insurance affordable — for everyone.

Research & Framework: James Riley, Lightspark · 2026

THE WRONG QUESTION

Most countries — and most policies — are asking the wrong question.

Mandatory Pools

National flood pools & insurer-of-last-resort mechanisms keep coverage available and spread risk nationally — but homeowners rarely change behaviour.

Common drawback: homeowners don't benefit

Building Code Mandates

Stronger roofs, wildfire setbacks, flood-proofing standards. Reduces future losses — but politically unpopular, expensive to enforce, and slow to scale.

Common drawback: homeowners don't benefit

Insurance Pricing Penalties

Risk-based premiums, higher deductibles, coverage exclusions. Better risk pricing — but creates affordability crises and political backlash across the board.

Common drawback: homeowners don't benefit

Canada can ask a better question: ***"How do we systematically reduce climate losses while keeping insurance affordable?"***

THE CANADIAN HOME RESILIENCE STANDARD (CHRS)

A single national framework — five dimensions, one score, one language.

Energy Score

EnerGuide-aligned efficiency rating

Carbon Score

Operational + embodied carbon intensity

Flood Score

Flood risk & mitigation readiness

Fire Score

Wildfire interface & defensible space

Wind Score

Wind resilience & roof specification

+ Resilience Score

Composite readiness across all five dimensions — the property's single number for insurers, lenders, municipalities, and homeowners.

THE INCENTIVE ENGINE | Aligning All Stakeholders

FOR INSURERS

Government provides:

- Access to national resilience datasets
- Federal catastrophe reinsurance support
- Reduced capital reserve requirements
- Participation in catastrophe risk pools
- Preferential access to retrofit programs

In return:

- Premium discounts for resilient homes
- Data sharing with government
- Portfolio resilience reporting

FOR HOMEOWNERS

Earn resilience points:

Heat Pump	100 pts
Defensible Space	150 pts
Fire Resistant Roof	250 pts
Backwater Valve	200 pts
Flood Barrier	250 pts
Solar + Battery	300 pts

Rewards:

- Insurance discounts
- Mortgage rate discounts
- Property tax rebates
- Federal grants & utility incentives

NATIONAL RESILIENCE MARKETPLACE | How It Works For A Homeowner

CURRENT PREMIUM

$3,200

Annual home insurance

RECOMMENDED UPGRADES

Heat Pump
+100 pts

Backwater Valve
+200 pts

Roof Upgrade
+250 pts

→

PROJECTED PREMIUM

$2,100

After verified upgrades

10-YEAR SAVINGS

$11,000

Estimated cumulative

Verified upgrades + insurance savings + mortgage discounts + utility rebates = a rewarded resilient home.

THE FEDERAL GOVERNMENT'S ROLE

Government does not run this system. It convenes, enables, and guarantees it.

Convener

Brings insurers, lenders, utilities, municipalities, and homeowners to a common table.

Standards Setter

Establishes the CHRS scoring methodology — energy, carbon, flood, fire, wind, resilience.

Data Infrastructure

Funds the national property intelligence layer — the physical data backbone for the whole system.

Financing Catalyst

Low-interest retrofit financing programs, grants for low-income homeowners, green bonds.

Reinsurance Supporter

Provides federal catastrophe reinsurance backstop, enabling insurers to offer verified discounts.

Outcome Measurer

Tracks national resilience progress — loss ratios, premium trends, retrofit adoption rates.

THE LIGHTSPARK RECOMMENDATION

Canada should establish the world's first national residential resilience framework.

Aligned through a single property intelligence standard:

Insurance	**Mortgage Lending**	**Climate Adaptation**	**Energy Transition**	**Property Value Protection**

Lightspark provides the operating layer:

✓ Property intelligence	✓ Climate risk scoring	✓ Energy & carbon intelligence
✓ Homeowner engagement	✓ Measurement infrastructure	✓ National resilience reporting

THE CORE NARRATIVE SHIFT

Most countries are asking:

"How do we keep insurance available?"

This leads to:
• Mandatory pools (socialized risk)
• Coverage mandates
• Pricing penalties
• Government backstops

Result: Coverage stays, but costs rise. Homeowners lose. Losses keep growing.

→

Canada can ask:

"How do we reduce climate losses while keeping insurance affordable?"

This leads to:
• A national resilience standard (CHRS)
• Reward-based incentives
• Verified upgrade discounts
• Property-level data infrastructure

Result: Coverage stays affordable. Homeowners benefit. Losses reduce.

APPENDIX

2024 Global Climate Insurance Losses: Canada Focus

Supporting research and context for the Canada Climate Resilience Framework

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APPENDIX | Canada's $8.55B Record Loss Year — 2024

$8.55B	12×	+38%	273K+
Total insured losses	**vs. 2001–2010 avg**	**vs. prior record**	**Total claims filed**
All-time Canadian record — CatIQ	Average was $701M/yr that decade	Previous record: $6.2B in 2016	50% more than a full-year norm

Four events entered Canada's all-time top-10 list — in under 30 days

2nd costliest ever · Aug 2024 — **$3.0B insured**

Calgary Hailstorm

Most expensive hailstorm in Canadian history — $3B in just over one hour across metro Calgary.

3rd costliest ever · Quebec — **$2.4B insured**

Hurricane Debby Remnants

Historic rainfall and flooding across Quebec and Eastern Ontario. Over 100,000 claims.

9th costliest ever · Jul 2024 — **$1.1B insured**

Jasper Wildfire

~30% of Jasper townsite destroyed. One of the most damaging wildfire events in Canadian history.

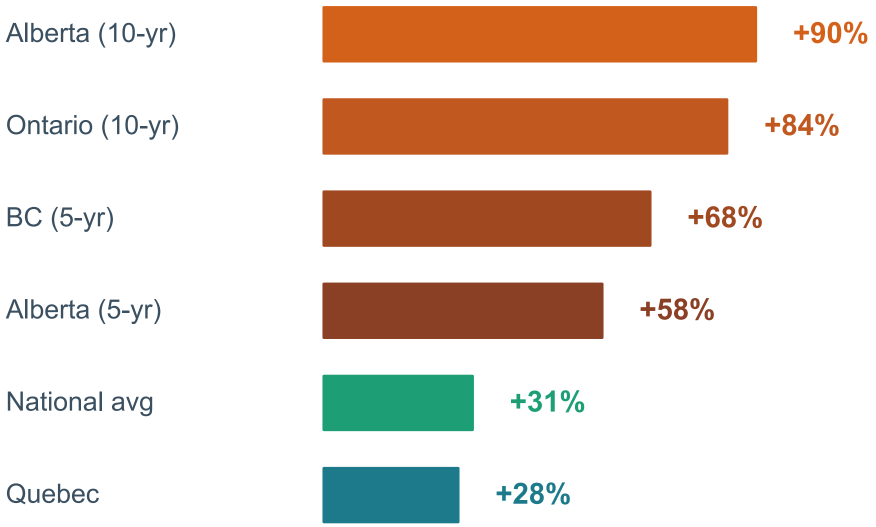
10th costliest ever · Jul 2024 — **$990M insured**

Southern Ontario Floods

Severe summer storms, basement flooding across GTA. Combined July–Aug losses: $7B+ in 27 days.

APPENDIX | Canada's Premium Surge — 2021 to 2025

Cumulative premium increases by province



Deductible Hardening — What's Already in Market

Water damage min.

$2,500

Aviva Canada mandatory min. (2024); spreading industry-wide

Hail deductible (AB)

$10,000

Now common in Alberta hail belt; some shifting to % of insured value

Premium growth rate

5–7% p.a.

Forecast 2026–2028; far above 2% general CPI inflation

APPENDIX | Country Scorecard — Home Hardening & Insurance Affordability

Country	Tier	Key Program(s)	How It Keeps Insurance Affordable
UK	A	Flood Re + Build Back Better	£10,000/claim for upgrades. 80% of claimants cut premiums >50%. 265,000+ policies.
Australia	A	Cyclone Pool + ICA Retrofit	Mandatory pool with premium discounts for verified roof retrofits, window & door upgrades.
Japan	A	Japan Earthquake Reinsurance	Seismic retrofits earn embedded premium discounts. Govt grants fund upgrades.
France	B	CCR (Caisse Centrale)	State reinsurer; municipalities without risk-prevention plans face higher deductibles.
Spain	B	Consorcio de Compensación	Nat-cat coverage mandatory on all policies. Broad pools keep premiums low.
USA	B–	IBHS FORTIFIED / State grants	Alabama, SC, FL: FORTIFIED roof grants. CA ties wildfire hardening to premium incentives.
Germany	C	Post-2021 reform proposals	2021 floods prompted debate — stalled. No national pool. Champions EU Global Shield.
Canada	C	NFIP (stalled) + FireSmart	NFIP promised 2021 — not operational. FireSmart $100M+ active. No premium-hardening link.

APPENDIX | 2024 Global Picture

$318–368B
Total global economic losses

$137–145B
Total global insured losses

$181B
Protection gap (57% uninsured)

78%
US share of all insured losses

Key Findings

- 2024 was the 3rd most expensive year on record for insured losses and the 6th consecutive year above $100B.
- Severe convective storms drove 41% ($64B) of all insured losses. Hurricanes Helene & Milton caused ~$95B in total damage.
- The global protection gap reached $181B — 57% of all losses were uninsured, exposing households and governments to enormous fiscal risk.
- Canada shattered its record with $8.55B — 12× the 2001–2010 average, with 4 top-10 events in under 30 days.
- Europe lost $31B to natural disasters, anchored by Spain's Valencia floods — now a catalyst for EU-wide mandatory nat-cat insurance reform.
- Climate-attributed losses are growing 6.5% annually vs. 4.9% for all insured losses — the gap is widening, not narrowing.
- Countries linking insurance affordability to verified home hardening programs are demonstrably outperforming those relying on markets alone.

APPENDIX | Sources & References

LOSS DATA

· CatIQ (Jan 2025). Canadian insured losses total CAD $8.5B in 2024. catiq.com

· IBC (Jan 2025). 2024 shatters record — $8.5 billion. ibc.ca

· Munich Re (Jan 2025). Global disaster losses 2024 at $320B. munichre.com

· Aon (Jan 2025). 2025 Climate and Catastrophe Insight report. aon.com

· Swiss Re Institute (2025). sigma 1/2025: insured losses on trend. swissre.com

CANADA — POLICY

· Public Safety Canada (2025). Mitigating Disaster Risks. canada.ca

· IBC (2024). Pre-Budget Consultations — National Flood Insurance. ourcommons.ca

· The Narwhal (Aug 2025). Will the feds finally approve flood insurance? thenarwhal.ca

· Pembina Institute (Nov 2025). How governments and insurers can lower home insurance costs. pembina.org

· RBC Economics (Jun 2025). What natural disasters mean for Canada's economy. rbc.com

CANADA — PREMIUMS

· Statistics Canada. Shelter CPI — home and mortgage insurance rates. statcan.gc.ca

· MyChoice Financial (Apr 2026). Home Insurance Outlook 2026. mychoice.ca

· Ratehub (May 2026). How has inflation affected home insurance? ratehub.ca

· Mordor Intelligence (Jan 2026). Canada Home Insurance Market Size 2031. mordorintelligence.com

· Insurance Business Canada (Feb 2026). Canada's home insurance market tightens. insurancebusinessmag.com

GLOBAL POLICY

· Brookings Institution (Mar 2026). Public nat-cat reinsurance: What other countries do. brookings.edu

· EIOPA (Dec 2025). PROTECT tool — natural catastrophe risk scores. eiopa.europa.eu

· Swiss Re Institute (Mar 2026). Adaptation and insurance: narrowing the protection gap. swissre.com

· Flood Re (2024). Build Back Better — property flood resilience. floodre.co.uk

· Insurance Council of Australia (2025). Building a More Resilient Australia. insurancecouncil.com.au