

# Environmental Scan of Radon Law and Policy: Best Practices in Canada and Europe

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Environmental Law  
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# Introduction and Scope

The Purpose of Scan was to assist **Health Canada** understand barriers and strategic opportunities to more effectively deliver the **National Radon Program**.

Team made up of researchers from CAREX Canada (**Noah Quastel** and **Anne-Marie Nicol**) and the CELA (**Morten Siersbaek** and **Kathleen Cooper**).

We had a large scope— almost all areas where law and policy could shape radon and the built environment. We compared Canada to select European countries: **EU Directive**, **Denmark**, **Finland**, **Sweden**, **UK**, **Switzerland**. US laws were well documented already.

Requires thinking through how law shapes conduct of persons who own, manage, occupy, or rent buildings:

e.g Employers, Governments as Employers and housing providers, renters (Residential Tenancies), Commercial landlords (occupiers liability), Real Estate Transactions., Building Codes, Public Health.

# Some ideas on legal change

We want to know what the existing law is and the principles behind it.

Wide ambit to law and its **conduct of conduct--** government regulations, industry standards, certification standards

Judges can make legal change through **reinterpreting the law** e.g. whether radon is a “latent defect” when a house is sold

The **democratic policy process** allows for new law. But some organizations, like Real Estate Councils can also influence behavior.

We can assert widely held **collective values** (“saving lives”) and think of how to change these systems.

Laws in other **places** can help us think about how to do things differently

# What does Radon Policy Look Like? BC Example

Radon guidelines	200 Bq/m <sup>3</sup> (National )
Testing and Mitigation	No explicit requirements, but some testing of government buildings (social housing, schools etc) Special rules in Interior Health for daycares
Mapping	New initiatives through Health Canada, not yet complete
Radon professionals certification/oversight	Professionals not required, and not provincially regulated; C-NRPP as federal voluntary certification system
Renters	Nothing explicit, general duties of fitness of repair
Employees	Nothing explicit in Occupational Health and Safety Reg, general duty clause.; reduced evidentiary burden for compensation for lung cancer
Home Buyers	Updated Building Code requirements (new homes), no policies for New Home Warranty, no policies for Real Estate Transactions
Public awareness	Radon Aware, plus select citizen science projects
Action Plan	Nothing
Enforcement	Nothing (but some Building Code enforcement and some daycares)
Incentives	Nothing

# What does Radon Policy Look Like? Switzerland

Radon guidelines	Broad policies in the Swiss Radiation Protection Regulation (Ordonnance sur la Radioprotection - ORaP ). Set at 300 Bq/m <sup>3</sup>
Testing and Mitigation	Cantons may order testing for any building where people regularly spend several hours a day (Art. 164.1). They must test school and preschools. All building owners must mitigate if over 300 Bq/m <sup>3</sup>
Mapping	All testing by authorized service providers who must enter tests in national database (160.a. and 162); 230,000 measurements completed as of 2016
professionals	Testing requires authorized service providers (159.1), service providers licensed by Federal Office of Public Health (159.2)
Renters	Covered above
Employees	Measurements in radon exposed workplaces (art.165.1) Employer must check effective doses and repair if over 10 mSV (art. 167.1 ), not to exceed overall dose limits of 20 mSv per year.
Buyers	Covered above?
awareness	Programs not found
Action Plan	20-page Radon Action Plan
Enforcement	Individual cantons have power to enact mitigation orders if owners fail to act (art. 166.2), must order mitigation in school or preschools (art. 166.3)
Incentives	Programs not found

# Canada's Institutional Structures

The **Canadian Constitution** defines federal and provincial powers.

Federal powers relate to matters of a national interest or that cross provincial boundaries. Provinces and territories cover regional or local matters.

In theory, radon can fit into “health” or “environment” and these are matters of shared responsibility. But its hard for feds to push the boundaries.

However, most radon regulation will likely fall under provincial action. For instance, the Feds can set **National Building Code** (advisory) but provinces need to put in legislation.

Municipalities are creatures of provincial statute.

Overall, a complex set of jurisdictional issues has left radon without a clear law and policy home.

# The Federal Government Role

The Federal government can provide comprehensive policy guidance, and coordination.

The **Canada Labour Code** is the only federal area of radon limits with any legal force. However, its still set at 800 Bq/m<sup>3</sup>.

**Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM), 2011** includes radon, but not binding.

The **National Radon Program** offers guidance and advice.

- Updates to the (model) **National Building Code**;
- Suggested Mitigation strategies;
- testing and mapping (including federal workplaces);
- oversight of **C-NRPP**;
- Opinion polling; Public outreach and education.

# What Can Provinces and Territories Do?

Most **jurisdiction** over radon rests at the provincial or territorial (“P/T”) level:

- Building Codes
- Occupational health and safety (OHS)
- Real estate transactions and home warranty programs
- Occupier’s liability
- Residential tenancies
- Child care and schools
- Public health



# Our Recommendations: Federal Action

We called for a **bolder** National Radon Program

- expand current focus on research, education and outreach.
- provide increased direction, advice and toolkits
- promote federal tax credits and grants.
- national coordination through promoting **Action Plans** that can be adopted at the provincial and territorial level.

We took the **EU Basic Safety Standards Directive** as a good example to follow

# Innovative Policy in Federal States: The EU Basic Standard Directive



It provides requirements (with some discretion) for member states:

- Address radon in workplaces, public and private buildings ( $300 \text{ Bq/m}^3$ )
- Develop Radon Action Plan
- Local and national info about exposure and risk
- Create system of enforcement

# Federal Action: Testing and mapping efforts

## Canada vs Europe

- Cross-Canada survey valuable and used by some provinces and municipalities
- EU Directive – requires member states to test and map as part of Radon Action Plans
- European countries:
  - legal requirements or strong incentives for residential and/or workplace testing
  - often with strong municipal involvement
  - often extra efforts in radon-prone regions
  - much more extensive testing and mapping efforts

# Yukon, 2019

The Yukon Radon Points Layer shows radon testing that has been performed by homeowners in various Yukon communities from 2006 to 2018. Created Feb. 6 2019; Available at <http://yukon.maps.arcgis.com/home/item.html?id=73d5d04e9b7243d98166e5e7929b1218>

Details | Basemap

Contents

- Radon 2018
- Topographic
- Topographic



**Radon 2018 (Features: 65, Selected: 0)**

Name	Type	Households tested	Total tests performed	Tests per household	Households that meet World Health Organization Standard (0-100 Bq/m3)
Teslin	Community	32	70	2.20	64
Watson Lake	Community	82	193	2.40	73

The federal government should coordinate pan-Canadian collection of all publicly and privately collected radon test results, (as occurs in Switzerland) while addressing privacy concerns.

# Federal Action: The Need for Incentives and Fiscal Policy

Despite public education efforts, individual home owners, businesses or landlords often act with indifference or avoidance.

Norway, Sweden, Switzerland and UK – uses either spending or taxation powers to help with mitigation.

- sends a powerful signal
- help with significant costs
- Addresses equity issues (landlords and tenants, poor homeowners)

We **recommended** a **Federal tax credit or grant program**

It should have net positive benefit to P/T (tax revenue and health care savings): Also consider acceptable expenses for quality of life years.

It is essential to integrate **with energy efficiency and decarbonization programs**: Tight buildings can increasing radon. Borrow instruments from the energy efficiency sector (e.g. financing).

# Federal Action: Use the Federal-Provincial-Territorial Radiation Protection Committee

This committee has the mandate to advance harmonization of radiation protection practices and standards across Canada.

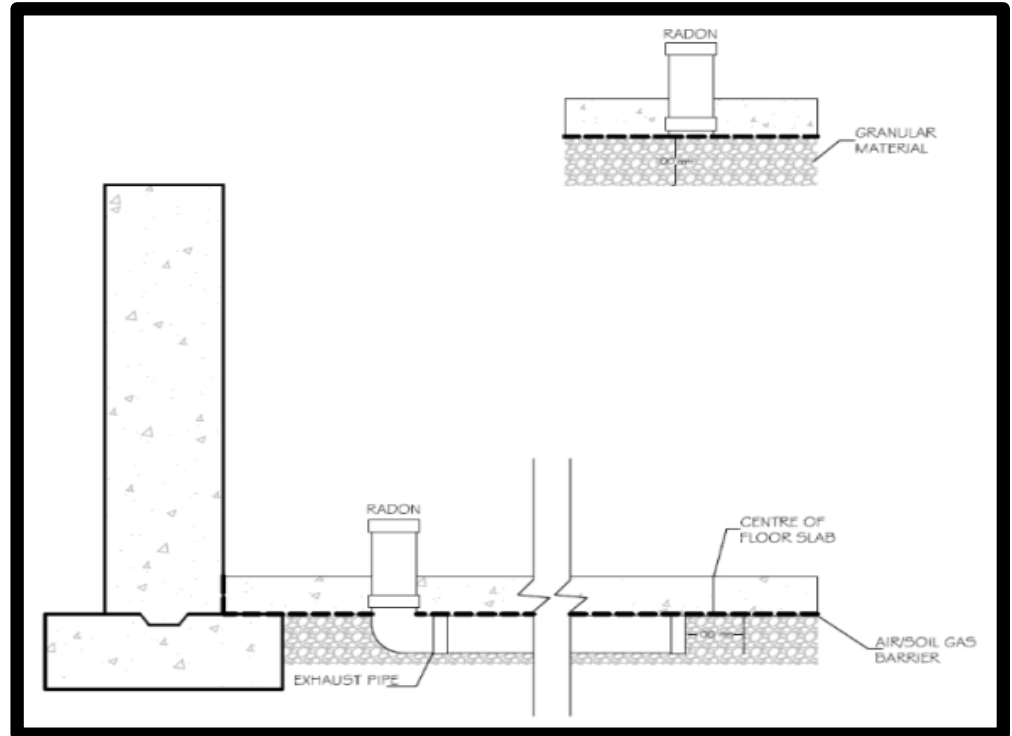
Key document is the **Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM), 2011**. However this has no enforcement powers and is not well known by many, including Occupational Health and Safety and Public Health inspectors

The FPTRPC could be used to convene P/T officials and affected stakeholders to assist federal government in facilitating pan-Canadian best practices, such as P/T Radon Action Plans and training programs for building industry and inspectors.

# Provincial and Territorial Action: Building Codes

The National Building Code recommends a partial but not complete solution—a “rough in”—a hole in the slab and a pipe that can later be equipped with a exhaust pipe and fan.

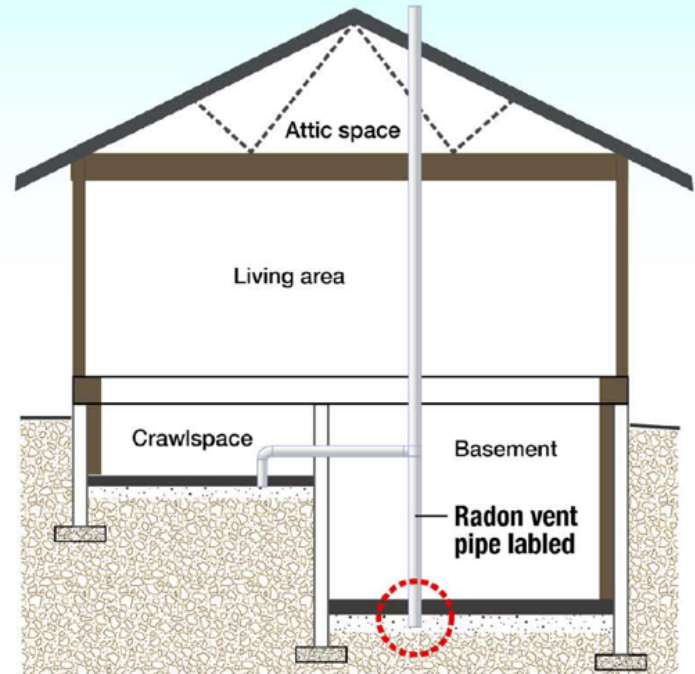
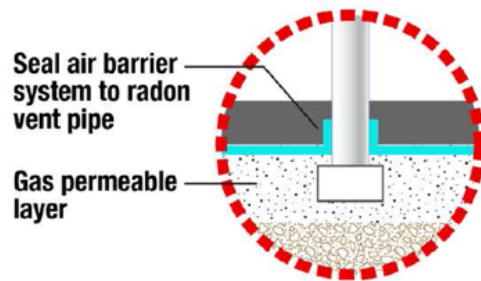
Many provinces have updated their Building Codes, following changes to the National Building Code.



From Radon Reduction Guide for Canadians  
2013

In 2018, BC has replace older Area 1 and Area 2 system (e.g. high radon areas follow National Code standards). Now specifies municipalities and asks for passive mitigation system. Municipalities can also opt in or out

**“There are well-established, cost-effective methods for reducing elevated radon levels.”**



Updates to the 2012 BC Building Code include extending the radon pipe to the exterior of a dwelling at time of construction.

The passive radon vent piping system for new construction, focusing on sub slab depressurization as applied to Area 1, are the **strongest protective measures in Canada.**

**BC Building Code 2015**





Ontario and Quebec have not yet changed.

Ontario has proposed updates, including the addition of mandatory post-construction testing. In this vacuum some cities have taken their own initiative--City of Guelph Central Elgin, St. Thomas, and Thunder Bay.

Our key findings:

- ❖ Codes need updating (full systems, not stubs). There needs to be a post-construction radon test
- ❖ Code provisions need to be studied so we can learn from experience (see Sweden, Switzerland, Finland, and Denmark—but see studies in Winnipeg, Alberta, and Castlegar)

# Provincial and Territorial Action: Occupational Health and Safety

The new research on “**effective dose**” suggests a doubling of estimated risk. Many “normal” workplaces have high radiation exposure.

There is very little explicit radon regulation for workplaces (but see Yukon for high doses).

Most provinces have **general duty clauses**, and rules for **indoor air quality/ventilation**.

The NORM Guidelines set effective dose limits (20 mSv, for occupationally-exposed workers and 1 mSv for others). Only Ontario links general duty clause to NORM Guidelines.

**Worker’s compensation** claims possible via general duty clauses; but confusion still reigns.

All the European countries we scanned had programs for radon testing and mitigation in workplaces (most at either 200 or 300 Bq/m<sup>3</sup>).

## P/T Action: Real estate transactions and home warranty programs

“Buyer beware” prevails. Ex. of *Wang v. Shao*, 2019 BCCA 130: Seller not obliged to disclose a gangland murder on the steps of the Shaughnessy home.

There is a duty to disclose if asked, e.g. on a **Property Disclosure Statement**. Alberta’s **Real Estate Council** now says that radon is **a material latent defect**—sellers must proactively disclose if they know.

Only Ontario (Tarion) makes radon part of new home warranty—but litigation may be possible to force the issue in other provinces.

Various tools exist to build radon into routine real estate practices, such as **mandated testing**, **contingency clauses and bonds**, notice on title, **third-party certification**, and **mandatory realtor education**

## P/T Action: Residential tenancies

No province or territory has specific radon provisions for renters.

Radon should fit under general provisions of **fitness of repair** and **quiet enjoyment**. Case law in Ontario and Quebec points that way.

Other jurisdictions such as Norway and the UK require landlords to test and mitigate.

We recommended that the Federal government create **Best Practices Toolkit** for radon in tenancies and provide model language for provincial/territorial laws.

Provinces need to include radon testing and mitigation to protect tenants.

There is wide scope for expanded training programs for inspectors and educational programs for tenants.

# P/T rules for child care, schools, public health

## Child care, schools

- There are general safety provisions; none are radon-specific.
- Extensive radon testing in some P/T; very little in others
- Europe: most of countries surveyed had requirements to test schools and child care facilities

## Public health

- Authority to respond to health hazards; often delegated with complaint-driven inspections
- 2018 saw considerable progress in Ontario – the *Ontario Public Health Standards* direct local *Boards of Health* to educate public and develop public awareness and mitigation strategies
- Health officials have addressed radon in Alberta (tenancies) and BC (child care testing)

# Municipalities

## **We surveyed key municipalities for radon action.**

- Victoriaville gives financial incentives for radon testing and mitigation.
- Thunder Bay gives out free test kits and includes radon in its long term Sustainability Plans.
- Guelph has implemented its owning building code requirements, and offers free testing in new homes

## **We Recommended Toolkits be developed.**

- Lay out legal basis for municipal role in addressing radon
- Describe best practices, including codes, residential tenancies, cross-department coordination, training materials

# End notes

The Full report:

Quastel, N., Siersbaek, M., Cooper, K. and Nicol A-M. 2018. Environmental Scan of Radon Law and Policy: Best Practices in Canada and the European Union. Toronto and Burnaby: Canadian Environmental Law Association and CAREX Canada. Available at <https://www.cela.ca/publications/environmental-scan-radon-law-and-policy-best-practices-canada-and-european-union>

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