

[REDACTED]

From: ML Harley [REDACTED]
Sent: March 17, 2025 11:25 AM
To: Office of the Legislative Counsel
Subject: Re: zoom instructions for Mar 17 Public Bills Committee meeting
Attachments: UCC Presentation on Bill 6 to the Public Bills Committee.pdf

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

Exercice caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Please find attached my presentation for distribution to the Public Bills Committee.

Thank you

Mary Lou Harley Presentation time @ 2:40pm March 17, 2025

On Sun, Mar 16, 2025 at 1:07 PM Office of the Legislative Counsel <legc.office@novascotia.ca> wrote:

Good afternoon Dr. Harley,

Thank you for bringing this to our attention. The change from virtual to in-person has been duly noted, and we will ensure that the name of the organization is corrected accordingly.



[REDACTED]
Senior Legislative Assistant / Adjointe législative principale

Office of the Legislative Counsel / Bureau du conseiller législatif

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From: ML Harley [REDACTED]
Sent: March 15, 2025 2:10 PM
To: LeBlanc-Murray, Nicole M [REDACTED] Office of the Legislative Counsel
<legc.office@novascotia.ca>
Subject: Re: zoom instructions for Mar 17 Public Bills Committee meeting

Name Dr. Mary Lou Harley

There is a change: I will be **presenting in person** on Monday, March 17, 2025 at 2:40 pm

I noted during the phone call with the presentation time information, that I would switch from virtual to present-in-person if I arranged care for the family member recovering from surgery.

That arrangement has been made.

Official Group Name: The Ecological Justice Working Group of the United Church of Canada East

On the phone I gave an abbreviated name for this eco-justice group of the United Church that I am representing; my apologies for any confusion.

Thank you for your work in organizing this Public Bills Committee meeting.

Mary Lou Harley, PhD

On Sat, Mar 15, 2025 at 11:35 AM LeBlanc-Murray, Nicole M <Nicole.LeBlanc-Murray@novascotia.ca> wrote:

This email contains important information, so please read it carefully.

This email confirms your virtual presentation scheduled for **Monday, March 17, 2025, at 2:40 p.m.** You may watch Monday's proceedings at <https://www.youtube.com/watch?v=j5DXFYsDSts>.

Please see the zoom link below:

Join Zoom Meeting

<https://us06web.zoom.us/j/87092009143?pwd=Um2eJ5zyAPRnsfQ1i2l4PbzS6xdzC7.1>

Meeting ID: 870 9200 9143

Passcode: N.%!1n

One tap mobile

+16473744685,,87092009143#,,,,*757975# Canada

+16475580588,,87092009143#,,,,*757975# Canada

Dial by your location

- +1 647 374 4685 Canada
- +1 647 558 0588 Canada
- +1 778 907 2071 Canada
- +1 438 809 7799 Canada
- +1 587 328 1099 Canada

Meeting ID: 870 9200 9143

Passcode: 757975

Find your local number: <https://us06web.zoom.us/j/khapfH8Lw>

Short video—best practices on videoconferencing:

<https://www.youtube.com/watch?v=j5DXFYsDSts>

Please read – VERY IMPORTANT

The meeting will be held virtually using Zoom. You must create a Zoom account (free) in advance of the meeting at zoom.us. If you already have a Zoom account, ensure you have the latest updates.

Please log on to Zoom at least 15 minutes before your scheduled time. The meeting may get a little ahead or behind schedule. You will be put in the “waiting room” and admitted to the meeting when it is your time to speak. Make sure you appear under the name you have provided to the Legislative Counsel Office or you will not be recognized and admitted to the meeting. Once finished with your presentation, please leave the meeting.

If you have a written submission, you may send it to legc.office@novascotia.ca for distribution to the committee members before the meeting.

When you are not in the meeting, you may follow the proceedings at the link provided above. You will find the Zoom link (and telephone numbers) above for admission to the meeting. **Please do not share.** It is only for your use.



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Submission to the Public Bills Committee, Nova Scotia Legislature
Regarding Bill 6 - An Act Respecting Agriculture, Energy and Natural Resources

By The Ecological Justice Working Group for the United Church of Canada East
March 17, 2025

Presenter: Mary Lou Harley, PhD

The Ecological Justice Working Group for the United Church of Canada East brings to your attention concerns about a number of clauses in Bill 6, specifically clauses in Part III and clause 21, and related comments on this Bill in the House of Assembly.

The United Church of Canada has acknowledged the harmful role that false assumptions of human separation from and superiority over the natural world has had in the commodification of nature and environmental destruction.

In its policies the United Church has articulated humanity's fundamental integration with the rest of creation along with a call towards responsibility for the care of creation. Further, the United Church notes that such crucial understandings are at the root of the richness and wisdom of Indigenous worldviews and draws your attention to the importance of that wisdom for our Age.

All of Nova Scotia is the ancestral and unceded territory of the Mi'kmaw people. Legislation must be founded in acknowledgement and respect of that fact and honour the responsibilities under the United Nations Declaration of the Rights of Indigenous Peoples. We do not see those responsibilities reflected in Bill 6.

The United Church has a long history of policies, documents, and submissions on the social, ecological and ethical issues associated with a wide range of resource developments, energy options and climate change, which form the foundation for this submission.¹

¹ **One Earth Community** (1992) 12 ethical principles and guidance for environment and development issues.
Energy in the One Earth Community (2000) A comprehensive application of the One Earth Community policy to energy issues.

Bill 6 Part III

The United Church urges transition away from fossil fuels, raising serious concerns about clauses in Bill 6 Part III that would amend the Petroleum Resources Act to expand fossil fuel production and to eliminate the moratorium on hydraulic fracturing to access methane. The impact of methane on global warming is far greater than carbon dioxide. These amendments in Part III are contrary to urgent climate action efforts locally and globally. They disregard decades of scientific study and the necessary responses to lower greenhouse gases to address the evident immense impacts of climate change.

In 2012, the 87th Maritime Conference of the United Church called for a *Moratorium on On-Shore Shale Gas and Coal Bed Methane Development* in the Atlantic provinces and continues to support a moratorium on fracking. The proposed push for fracking in Bill 6 disregards the extensive consultations and serious public health and environmental issues that underpin the government's decision in 2014 to initiate the moratorium. Since that time, experience in other locations and continued peer-reviewed scientific information on the health and environmental impacts of hydraulic fracturing support retaining this moratorium.

Any economic benefits that fracking might provide is undermined by the high risk of toxic and radioactive contamination of wells and watersheds by the injected and the released chemicals, geological instability including seismic activity, serious negative impacts on community health, damage to local agriculture, forestry and fishing economies, and a legacy of toxic water wastes for our children.

Economic development tied to responsible renewable energy projects can bring economic prosperity to Nova Scotia without threatening the environment and the quality of life here.

Nova Scotia News release of 18 February 2025, 2:23 pm states:

Always Changing, Forever Yours: Nuclear Fuel Wastes (Leaders Guide) (2009). A comprehensive background on the United Church involvement and key documents relating to the nuclear power chain from uranium mining to nuclear energy wastes.

Any hydraulic fracturing activity would be subject to strict regulations to minimize any environmental threat. And such activity would only happen after the Province had conversations about how to do it safely.²

We say have those conversations before removing the moratorium and include the Mi'kmaw people and all interested Nova Scotians in consultations.

Bill 6 Clause 21

The United Church of Canada strongly supports the “Act to Prohibit Uranium Exploration and Uranium Mining in Nova Scotia” *to protect the health and safety of Nova Scotians and the quality of their environment.*

This legislated prohibition on uranium mining and exploration in this province was not done out of fear or on a political whim. It was done by consultation and due process establishing the law with the agreement of the three political parties.

The repealing of this Act has not been justified.

Nova Scotia has a small land mass with a relatively high rural population so there are no large remote areas on which to manage the consequences of mining uranium.

It is highly unlikely that Nova Scotia could be a significant player in the uranium market as our uranium resources are meager compared to the large rich deposits in Saskatchewan.

At Second Reading of Bill 6, March 7, 2025, Hon. Tory Rushton stated:

All government records about where uranium is and how much we have were destroyed. Beyond that, we lost our data to properly and responsibly manage this resource....³

² <https://news.novascotia.ca/en/2025/02/18/province-pursues-resource-development-legislation>

³ https://nslegislature.ca/legislative-business/hansard-debates/assembly-65-session-1/house_25mar07#1Page1060

*We know there is uranium in Nova Scotia that can impact people's wells and we know that as a by-product, radon can impact people's indoor air quality. Without knowing where the uranium is in our geology, it's hard for us to help protect people from those health and safety risks.. ..*⁴

In fact, the past 40 years of government activities related to the issue of uranium in well water are documented in the report, “A Review and Summary of Activities Related to Uranium in Nova Scotia Well Water” by Energy and Mines, Geoscience.⁵

The risk map was developed to communicate the relative risk of uranium in bedrock water wells based on the analysis published in the report, “A Uranium in Well Water Risk Map for Nova Scotia based on Observed Uranium Concentrations in Bedrock Aquifers.”⁶ An interactive risk map entitled “Uranium Risk in Bedrock Water Wells” is available online.⁷

‘A Review and Summary of Activities Related to Uranium in Nova Scotia Well Water’ also includes geogenic sources of uranium and results of research from the 1950’s to 2018, including radiometric surveys and findings on uranium concentrations across the major rock types in Nova Scotia’s geology.

The repealing of the prohibition is not needed for research to locate uranium deposits in the name of protection from health and safety purposes:

The data is adequate and mapping is already done sufficiently to indicate the locations where elevated levels of uranium in well water are more likely and the interactive map is available online. Water testing for uranium, arsenic and radioactivity is a priority in those areas and it is a standard recommendation for all wells in Nova Scotia that the water be tested to ensure it meets the Guidelines for Canadian Drinking Water Quality.⁸

⁴ https://nslegislature.ca/legislative-business/hansard-debates/assembly-65-session-1/house_25mar07#HPage1061

⁵ https://novascotia.ca/natr/meb/data/pubs/18ofr06/ofr_me_2018-006.pdf

⁶ https://novascotia.ca/natr/meb/data/pubs/20ofr01/ofr_me_2020-001.pdf

⁷ https://fletcher.novascotia.ca/DNRViewer/index.html?viewer=Uranium_Risk

⁸ <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html>

Radon gas from uranium can travel significant distances from the ore deposits, including by water, so Health Canada has established a protocol for radon testing and all homes should be tested. A home exceeding the guideline can be remediated to below the guideline level with appropriate sealing and ventilation. New construction puts mitigation in place with basements sealed and ventilation beneath foundation with pump in vent pipe.

As for safety, uranium ore is far safer locked in its natural rock formations than released by open pit or underground mining or by leaching. Uranium ores with toxic radioactive decay products are safest bound in the rock substrate which gives minimal exposure. Fracturing the rock releases to the environment the toxic mined material and the resulting fractured ore body is even more susceptible to water and erosion impacts releasing more radioactive toxins into the water source and air due to the industrial activity. Whether open pit or underground mining, whether bore drilling and leaching, the claim of health and safety purposes of mining cannot be supported.

At Second Reading of Bill 6, March 7, 2025, Hon. Tory Rushton also stated:

With the way the legislation is currently written, we're not even allowed to do the research about that. We have to open up this ban to do the research of what is in the ground.

Nothing in the Act prevents a person from using radiometric or other means of research provided the work is not industry activity regarding uranium. The Nova Scotia News release: Province Pursues Resource Development With Legislation 18 February 2025, 2:23 PM states in part:

The repeal allows government research only. All industry activity regarding uranium will continue to be prohibited through an existing ministerial order that will remain in place under the Mineral Resources Act.

Therefore, the repeal is not needed for government research and there is no justification to remove the protection of the legislated ban and limit the protection to a ministerial order that can be terminated “on the whim of a Minister.”

In 2012, the 87th Maritime Conference of The United Church stated

It is our conviction that the right of people to their wellbeing and to the health of the land, water and air should take precedence over privileges granted to industry.

Nova Scotia can choose energy options and lead innovative solutions that provide economic benefits and preserve the health, environmental, and economic legacy we wish to leave for future generations.

March 18, 2025

ADDENDUM

RE: Submission to the Public Bills Committee, Nova Scotia Legislature
by The Ecological Justice Working Group for the United Church of Canada East,
In-Person presenter: Dr. Mary Lou Harley March 17, 2025

Regarding Bill 6 - Clause 21:

The documents and background as mentioned at the opening of the in-person presentation are provided with context in this Addendum.

Uranium Mining Methods

The health and environmental issues of open pit and underground uranium mining methods are well known. The Mining Association of Nova Scotia has raised attention to the more recent uranium mining methods using in-situ leaching, ISL (also called in-situ recovery, ISR). However, the associated negative impacts and unsolved problems are not acknowledged in their Take the no out of Nova Scotia- End the uranium ban report.¹

In particular, there are contamination issues for aquifers, related to the choice of solution and the limits to the predictability of geochemical interaction of the leaching liquid on the rock; contamination risks for the groundwater due to the spreading of leaching liquid outside of the uranium deposit; large releases of radon; and disposal issues for the waste slurries and waste water produced during recovery of the uranium from the leaching liquid.² Restoring natural groundwater conditions after completion of the leaching operations has not been possible.³ Similarly, "To date, no remediation of an ISR operation in the United States has successfully returned the aquifer to baseline conditions."⁴

For most companies, the reason for the choice of in-situ leaching for uranium is mainly the economy of the process over open pit or underground mining. That advantage is lost

¹ <https://tmans.ca/images/End%20the%20Uranium%20Ban%20Report%202025.pdf>

² Mudd, Gavin M. "Critical review of acid in situ leach uranium mining: 1. USA and Australia." *Environmental Geology* 41 (2001): 390-403. <https://www.i2massociates.com/downloads/s002540100406.pdf>

³ <https://www.wise-uranium.org/uisl.html>

⁴ <https://inis.iaea.org/records/hv9k1-lrx43>

if protective regulation is prioritized or remediation of affected aquifers and groundwater to their baseline conditions become required.

Climate Change

Bill 6 clause 21 would open Nova Scotia to mining uranium, which the government and the mining industry are promoting as a positive contribution to climate action. However, nuclear power is too expensive, too slow to come on-board, fraught with waste issues, and as a baseload, increasingly uncompetitive with diversified renewable energies paired with storage options.⁵ Nuclear power is an expensive, high-risk distraction of money and efforts from real climate action.

Uranium is not critical to address climate change. Globally, uranium is critical to the military for nuclear bombs and uranium is the fuel for nuclear power plants which produce the plutonium that is critical for nuclear bomb production. After World War II, the United Church, like so many others, was hopeful for some beneficial application for uranium. However, it soon became clear that even the peaceful use of uranium produces dangerous problems and that military applications of its destructive power continues to be a driving force in the background of nuclear power promotion.

Emissions

Claims that uranium is needed for “Emissions-free” power are mistaken. While the nuclear plant itself has relatively low greenhouse gas emissions (GHG), uranium mining, milling and fuel fabrication have significant GHG, as well as other GHG producers along the nuclear power chain. Radioactive particles (alpha and beta) and radiation (gamma) emissions to air, land and water are documented at all points from uranium mining to nuclear fuel waste including at nuclear power plants.

Nuclear Power

Nuclear power poses many serious risks, from uranium mining through to decommissioning power plants and dealing with the onsite stored wastes. However, it is the used nuclear fuel with its high-risk burden for present and future generations that poses the most challenging management and ethical concerns.

⁵<https://www.cleanairalliance.org/wp-content/uploads/2024/03/options2024-march.pdf>

Used Nuclear Fuel

The United Church has been very active in the issue of nuclear fuel waste including submissions related to the Seaborn Panel on the ethical framework and the social, scientific, and technical aspects of the concept of deep geological burial,⁶ creating information resources,⁷ and participating by submissions and dialogues throughout the several-year deliberations by the Nuclear Waste Management Organization (NWMO) on a long-term containment plan for used nuclear fuel.⁸

I was invited by NWMO to serve on a panel of 16 experts to define the nature of the hazard of used nuclear fuel.⁹ The outcome of that panel informed the NWMO statement: *Used nuclear fuel is a potential health, safety and security hazard. It will need to be contained and isolated from people and the environment essentially indefinitely.*¹⁰

Canada and several other countries have management plans for high level nuclear waste based on deep geological disposal that have yet to be successfully enacted. Deliberations by NWMO led to a plan for a long-term repository under adaptive management, but the plan has changed to disposal with abandonment of the waste to future generations. We have no way at this time to isolate the used nuclear fuel from the environment for the life-span of its inherent radiation and chemical hazards.

⁶ United Church of Canada. 1996. A Submission from The United Church of Canada to the Public Hearings of the Canadian Environmental Assessment Panel Reviewing the Nuclear Fuel Waste Management and Disposal Concept.

⁷ United Church of Canada (principle author ML Harley). 2008. Always Changing Forever Yours: Nuclear Fuel Wastes. Three Workshops and Leaders Guide. Guide is available at www.united-church.ca

⁸ https://www.nwmo.ca/-/media/Reports---Reports/1250_ucc-submissiononthe topic_gener.ashx?sc_lang=en
https://www.nwmo.ca/-/media/Reports---Reports/1201_unitedchurchofcanada-submissio.ashx?sc_lang=en
https://www.nwmo.ca/-/media/Reports---Reports/1246_ucc-respeechurcanmar05submissi.ashx?sc_lang=en

⁹ https://www.nwmo.ca/-/media/Reports---Reports/1316_harley-submissiononthe topic_na.ashx?sc_lang=en
https://www.nwmo.ca/-/media/Reports---Reports/851_10-7FacilitatorsReportonNWMOWorkshopontheNatureoftheHazardofUsedNuclearFuel.ashx?sc_lang=en

¹⁰ https://www.nwmo.ca/-/media/Reports-MASTER/Backgrounders-and-brochures/NWMO-Backgrounder--Nature-of-the-Hazard.ashx?sc_lang=en

COP28

The countries that agreed in 2023 to try to triple nuclear power by 2050 (including Canada) staged a photo-op at the COP28 meeting site. Contrary to the media and the misleading information from the Government of Canada,¹¹ the Declaration to Triple Nuclear Energy was launched at the World Nuclear Symposium in September 2023. It is completely separate from the COP28 meeting. Nuclear power remains excluded from the Clean Development Mechanism of COP.

Applications of Radioisotopes

Production of radioisotopes for medical applications, one type of smoke detector and other applications are small quantity requirements easily met using small quantities of uranium in appropriate processes such as research-sized reactors and some medical radioisotopes can be produced from non-radioactive sources by means of a cyclotron.

¹¹ <https://natural-resources.canada.ca/energy-sources/cop28-declaration-triple-nuclear-energy-2023>