February 27, 2025

To the honorable members of the Committee on Climate, Energy, and Environment,

My name is Alison Cole and this testimony is follow-up regarding comments made in the hearing held at 8am this morning, Feb 27th, regarding HB 2038.

My expertise is in prospecting rock and minerals materials for use in craft and sculpture, and I have authored two books on the subject. My background is in the sciences and my work takes me all over the west. I hold 60 acres of opal mining claims atop the Pacific Northwest's richest known deposit of uranium. Though my work revolves around the prospecting and mining of gemstones and sculptable material, my work is directly entangled with industries mining for precious metals and critical energy minerals. I have an intimate, on-the-ground knowledge of the mining industry in Oregon and the West at large. I sit on the Resource Advisory Council to the Bureau of Land Management for Southeastern Oregon, where the state's most valuable critical mineral deposits reside.

Several claims were made in this morning's hearing that nuclear power will reduce the US's dependence on foreign sources of energy. This is patently untrue. Almost the entire volume of radioactive materials used in existing domestic nuclear power plants are purchased from foreign suppliers[1]. Furthermore US production of uranium and associated radioactive elements is at an all-time low.[2] The few remaining active uranium mining operations are predominantly sited within the Navajo Nation, which pose serious and degrading impacts on community health.[3]

Furthermore, this morning an individual claimed that the study commissioned under HB 2038 should look into Thorium, another radioactive element, because it could be somehow safer. Currently, Thorium is only isolated in mining operations as a by-product of rare earth elements. Its extraction is exquisitely expensive. Sources of radioactive Thorium would need to be purchased from foreign (predominantly Chinese) mining corporations because no significant production of it exists domestically.[4] Because of its radioactive nature and tandem existence in mineral deposits with uranium, mining for Thorium poses equivalent risks to health and safety of those who mine and process it.

Additionally this morning, several individuals asserted that new nuclear technologies, particularly small scale and modular reactor designs, are safe. They furnished absolutely no evidence whatsoever of

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[1] https://www.eia.gov/energyexplained/nuclear/where-our-uranium-comes-from.php
[2] https://www.eia.gov/energyexplained/nuclear/where-our-uranium-comes-from.php
[3] https://pmc.ncbi.nlm.nih.gov/articles/PMC3222290/
[4] https://www.frontiersin.org/journals/energy-research/articles/10.3389/fenrg.2023.1132611/full

proven safety, because no such reactors are yet online at the community level anywhere in the US. The gentleman from the DOE shared that, indeed, a new modular reactor was up and running on planet Earth, sited on a boat in the Russian Arctic to power a remote mining operation. From what pool of proof are we supposed to pull our confidence from?

Furthermore, other proponents explained that these assertions of safety are based on experiments run on diminutive reactors built in laboratory settings strictly for the purpose of experimentation.[5] Such assertions about safety at a community-wide, power-grid scale are presumptuous at best, and quite frankly boring. Individuals who tout this notion show no respect for the risks that are faced in both the mining of radioactive materials and of their impossible disposal. It doesn't matter if the modular reactor link is somehow safer than other reactor technologies. Every other link in the chain is not safer and never will be. The employment of radioactive elements as fuels comprises an exquisitely long chain of real, known, and well documented risks to human health throughout the entire journey of the resource from ground to reactor to waste.[6] Since its enactment in 1990, the Radiation Exposure Compensation Act (RECA) has awarded damages to 41,900 individuals and families harmed by exposure to radioactive materials. Thus far, US taxpayers have shelled out $2.6 billion dollars to cover these claims.[7]

The issue of radioactive waste disposal was brought up several times, particularly the issue of high-level waste, likely to be generated by small modular reactors. Several individuals noted that the US currently has no repository for high level radioactive waste, and this is true.[8] The gentleman from the DOE highlighted the existence of WIPP in New Mexico, but this site is an experimental pilot project to see if geological salt dome features are seismically stable enough to become long-term repositories for radioactive waste.[9] The citizens of Green River, Utah, a historic epicenter of uranium mining, live next to a monolithic black pyramid which caps waste from the town's shuttered uranium processing plant. Because there is nowhere to send the waste, the town must live with it. The pyramid sits neatly within an actual neighborhood. Kids ride their bikes around it. It will be there forever.[10] Of interest, plans for the Yucca Mountain permanent disposal site were cancelled[11] because Yucca Mountain itself is not actually a mountain; it's a fault scarp feature in a seismically active zone.[12] Currently, some of our nation's high level radioactive waste is shipped to the adjacent Nevada National Security Site (NNSS) for safekeeping. All of it sits above ground on wooden pallets under a blue circus tent pitched in a desert valley.[13] I was a guest at the NNSS in 2015 and saw this site with my own eyes. It was deeply troubling to speak with the

[5] https://radiationcenter.oregonstate.edu/oregon-state-triga-reactor
[6] https://www.ncbi.nlm.nih.gov/books/NBK158798/
[7] https://www.justice.gov/civil/common/reca
[8] https://www.gao.gov/nuclear-waste-disposal
[9] https://www.wipp.energy.gov/
[10] https://www.energy.gov/lm/green-river-utah-disposal-site
[11] https://www.energy.gov/yucca-mountain-archival-documents
[12] https://www.nrc.gov/docs/ML0403/ML040330873.pdf
[13] https://nnss.gov/mission/environmental-programs/radioactive-waste-management/

workers who intake this waste and discover that there was literally no plan to contain it beyond the circus tent. It's all still sitting there, waiting.

Proponents of HB 2038 have failed to develop any meaningful acknowledgement of the dangers of mining for radioactive elements, nor have they rigorously contemplated the risks associated with the indisposable nature of radioactive waste. The assertion that Oregon is ready for new nuclear power and that small modular reactors are safe is not only unsupported, it's profoundly irresponsible. As written, this bill directs a commission to whip up pro-industry propaganda, which is an unethical employment of taxpayer funds. Should the legislature want to take up HB 2038 for consideration, this bill must be amended to direct the study participants to take into consideration:

- How radioactive elements are mined and processed and the risks to human health,
- From whom and from where radioactive fuels are purchased from and the risk to the people who must transport them,
- What communities these materials will be transported through, and the risks to those communities should there be an accident,
- Where radioactive waste will be transported and indefinitely held, as well as the risks to the individuals and communities who will be charged with such tasks,
- What costs the state of Oregon will have to pay to other states since disposal in-state is prohibited by law,
- And the costs the US taxpayers pay out to claimants under RECA.

The investigators of the study proposed in HB 2038 must take into account the holistic economic costs on top of each of these factors, as well. If the proposed study fails to consider the implications to human health along the entire chain of the radioactive resource's lifespan, it will fail to deliver a study of any inherent worth to Oregonians.

As written, I stand in opposition to HB 2038.

With sincerity,
Alison Cole
Portland, Oregon