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Testimony opposing House Bill HB 4046; The Nuclear Study Bill

Chair Lively and members of the House Committee on Climate, Energy and Environment

I write as cofacilitator of Southern Oregon Climate Action Now (SOCAN), an organization of some 2,000 Southern Oregonians who are concerned about the climate crisis and encourage state action to address it. As rural and coastal Southern Oregonians, we live on the frontlines of the warming, reducing snowpack, heatwaves, drought, ocean level rise, and the increasing wildfire risk that these trends conspire to produce. Because of this, we pay close attention to what is happening in the state legislature relating to climate.

I also write as co-chair of, and on behalf of, the Climate, Energy and Environment Team of the statewide Consolidated Oregon Indivisible Network (COIN) and COIN itself.

I write to oppose HB4046 (OLIS 2026) as a wasteful boondoggle that deserves no funding (from whatever source) nor time allocation. It's a shame proponents of this bill cannot or do not care to find a worthwhile venture for which to seek, and on which we should expend, funds.

Occasionally, proponents of ideas that have been convincingly rejected seem to think that realities that are generally accepted elsewhere don't apply where they live, and thus need investigating again. This seems to be the case with Small Modular Nuclear Reactors (SMNRs) in Oregon.

Southern Oregon Climate Action Now has rejected the claim that nuclear generation of electricity is a climate solution for reasons discussed in Journet (2025). That discussion makes the case that the three predominant premises that nuclear proponents use to justify their promotion of the nuclear option are false (see *Why Consider the Nuclear Option?* below). Too

often, the conversation about climate change focuses on carbon as though this is the only problem. In fact, there are several gases implicated, not all exhibiting the same warming capacity and one, nitrous oxide ( $N_2O$ ), completely lacking carbon.

The bulk of my commentary here will focus specifically on the idea that Small Modular Nuclear Reactors represent an improvement over the conventional nuclear power plant that provide a remedy for the problems associated with conventional nuclear power.

As Sierra (2024) pointed out: "In 1980, Oregon voters prohibited the construction of new nuclear reactors until the federal government developed a nuclear waste site. With no site in existence more than four decades later, new nuclear reactors are effectively banned within the state." Regrettably, in the same article, Sierra furthered the nuclear industry campaign of disinformation by repeating the false claim that the "appeal of SMRs is that they could provide a great amount of energy capacity without the climate warming effects of fossil fuels." This implies nuclear generation is free of greenhouse gas emissions. In reality, nuclear generation absolutely is **NOT** free of climate pollution emissions.

### ***Why Consider the Nuclear Option?***

In exploring on behalf of Southern Oregon Climate Action Now the claims of proponents and opponents of nuclear power as a climate solution, I concluded that proponents of this option seem to rely on one or more of three arguments to support their position (Journet 2025):

- 1) The potential availability of renewable energy sources is inadequate to meet the global demand for energy.
- 2) The generation of electricity from nuclear power is greenhouse gas (carbon) emissions free.
- 3) Nuclear generation facilities are safe.

That exploration led me to conclude that each of these arguments is false in that:

- 1) there exists more than enough renewable energy to meet global demand;
- 2) full lifecycle assessment of energy generation methods suggests that, from plant construction to decommissioning and the extraction and processing of the fuel, while better than coal, oil and gas, nuclear is no improvement over genuine renewable sources (e.g., solar and wind) in terms of greenhouse gas emissions;
- 3) since provision of energy globally via nuclear generation would require the construction and operation of nuclear facilities throughout the world, even where political systems are of questionable stability, nuclear power plants could become targets for military or terrorist action just as occurred in Ukraine. Thus, nuclear generation is not safe.

It is important to appreciate, also, that achieving generation via the nuclear option rather than via renewable facilities generally takes many more years to become operational and is substantially more expensive than renewable generation. This means that any greenhouse gas emissions reduced by switching from fossil fuel to nuclear generation will be substantially more expensive than would be the case if fossil fuels were replaced by solar, wind, or genuine renewable resources. Note, also, that nuclear energy is not a renewable energy generation approach since raw nuclear fuel is in limited supply and thus is a non-renewable resource.

### ***Are Small Modular Nuclear Reactors Beneficial?***

As discussed in Journet (2025) Small Modular Nuclear Reactors are prefabricated units that can be shipped and plugged in to establish a nuclear facility with a capacity of up to 300 MW as compared to the standard large scale nuclear reactor with a capacity ranging up to a few thousand MW. Larger capacity can be achieved with SMNRs simply by siting several at the same location.

Despite the hype that nuclear proponents have generated around SMRs, Ed Lyman, Director of Nuclear Power Safety with the Union of Concerned Scientists recently (Lyman 2024) identified five myths that SMR proponents promote:

- 1) SMRs are not more economical than large reactors. Indeed, one of the main reasons for the cancellation of NuScale's proposed SMR in Idaho was the immense and sky-rocketing cost per kilowatt hour (Bright 2023). Barber (2023) reported the demise of the proposed NuScale demonstration project in Idaho with the comment that "the utilities backing the plant were spooked ... by a 50 percent increase in the projected cost for the project...." Additionally, he pointed out that NuScale's problem was that commitments to buy power from the facility covered less than 25% of its promised output. More recently, Green (2024) reviewed SMRs and summed up the current status and future potential as: "Small modular reactors (SMRs) have been the subject of endless hype in recent years but in fact, no SMRs have ever been built, none are being built now and in all likelihood none will ever be built because of the prohibitive costs." Comparing SMRs with renewable energy sources, Lyman uses the levelized cost of energy and reports the estimated cost for the defunct NuScale per MWH as \$119 while land-based wind and utility-scale solar cost below \$40 per MWH.
- 2) Lyman (2024) concludes that SMRs are not generally safer or more secure than large light-water reactors. While he acknowledges that intuitively one might think that because of their smaller size, reduced fuel needs, and lower heat production, SMRs pose a reduced environmental risk compared to large reactors, he argues that this is not the case. While SMRs have passive safety features these "may not always work, especially during extreme events such as large earthquakes, major flooding, or wildfires that can degrade the environmental conditions under which they are designed to operate." Clearly, Oregon is

susceptible to at least two out of the three extreme events identified.

Lyman (2024) also points out that “regulators are loosening safety and security requirements for SMRs in ways which could cancel out any safety benefits from passive features.” Meanwhile, the Nuclear Regulatory Commission is “exempting new reactors, including SMRs, from many of the protective measures that it requires for operating plants, such as a physical containment structure, an offsite emergency evacuation plan, and an exclusion zone that separates the plant from densely populated areas.” He warns that the NRC could also “allow SMRs to reduce the numbers of armed security personnel to protect them from terrorist attacks and highly trained operators to run them.” This is of particular concern because SMRs could become radiological weapons if sabotaged by knowledgeable saboteurs.

- 3) Lyman (2024) concludes that SMRs will not reduce the problem of what to do with radioactive waste. He points out that SMRs produce just as much highly radioactive isotope as large reactors per unit of energy generated. For some SMRs, “the concentration of fission products in the spent fuel, and the heat generated by the decay products—factors that really matter to safety—will be proportionately greater.” Additionally, just like the utility that manages large reactors, any SMR owner, for a data center for example, will have to manage significant quantities of spent fuel for the long term, i.e., in perpetuity. In relation to the nuclear waste production of three kinds of SMRs Krall et al. (2022) concluded that “water-, molten salt-, and sodium-cooled SMR designs will increase the volume of nuclear waste in need of management and disposal by factors of 2 to 30.”
- 4) Particularly relevant to the current legislative proposal, Lyman (2024) concludes that SMRs cannot be guaranteed to provide reliable and resilient off-the-grid power for facilities, such as data centers, bitcoin mining, hydrogen or petrochemical production. He points out that “it is very unlikely that any reasonably foreseeable SMR design would be able to safely operate without reliable access to electricity from the grid to power coolant pumps and other vital safety systems.” The data center operator would have to provide back-up power for both the data center and the reactor. In terms of reliability, Lyman offers the caution that: “Premature deployment based on unrealistic performance expectations could prove extremely costly for any company that wants to experiment with SMRs.”
- 5) In terms of the claim regarding energy use efficiency, Lyman (2024) argues that “SMRs do not use fuel more efficiently than large reactors.” Unfortunately, the reality is that “In terms of the amount of heat generated, the amount of uranium fuel that must undergo nuclear fission is the same whether a reactor is large or small.”

Lyman (2024) generously concludes by suggesting that SMRs might have a role to play in the future, but only if there is a realistic assessment of their costs and risks. He suggests that the nuclear industry is guilty of painting an overly rosy picture of the benefits of SMRs and avoiding the risks.

The conclusion we draw from the literature is that there is no benefit to Oregon trying to reinvent this wheel by conducting yet another futile ‘study’ of a technology that, at best, has yet to be demonstrated, and at worst is a dead end that contributes little or nothing to addressing the climate crisis. Even if nuclear generation were credible for Oregon, it remains the most expensive route available to achieve reduction in greenhouse gas emissions per unit of energy generated. In their analysis of the Danish energy system Thellufsen et al. (2024) state: “While the cost of renewable energy has decreased significantly, the cost of nuclear has... increased in the past decades and now in general exceeds the cost of renewables.” They offer this conclusion while simultaneously and curiously promoting the disinformation that “both nuclear and renewable energy can potentially supply CO<sub>2</sub>-free electricity.” Apparently, even those who claim nuclear energy is free of climate pollution accept that it is expensive. Meanwhile an analysis in Australia revealed: “Nuclear energy is still at least twice as expensive as renewable power, even after accounting for its longer operating life. Since renewables are cheap and getting cheaper, they can be built and rebuilt for less than the cost of building nuclear reactors once and then maintaining them over the same period....” (Climate Council 2024).

It is instructive of the approach taken by Republican proponents of nuclear power that, in 2025, they included SB995 (OLIS 2025) that would have exempted Small Modular Nuclear Reactors from the restrictions imposed by ORS 469.597. This statute, a result of passage of that 1980 ballot measure, prevents the licensing and siting of nuclear reactors in Oregon until there is a federally approved and demonstrated mechanism for disposing of the waste, and even then, requires a vote of the electorate to allow such siting. Members of the legislature should recognize that there is, among some members, a commitment to sacrificing the safety of Oregonians in an urge to promote nuclear power. Authorizing yet another study of nuclear power, under whatever guise, would just be playing into the hands of the authors and promoters of Project 2025 (Dans & Groves 2023).

Given the recent relaxation of established safety rules by President Trump, revising historically imposed safety rules developed and applied by the Nuclear Regulatory Commission for years (Brumfiel 2025, Brumfiel 2026), it becomes doubly imperative that states such as Oregon stand firm. The Nuclear Regulatory Commission was once a credible agency established to monitor and regulate the nuclear industry to protect Americans. It is now merely an advocate, marketing agency, and promoter of nuclear generation. In the Trump era of releasing secret rules that undermine the NRC role, Americans can no longer have any confidence that the nuclear industry is being monitored adequately. It would be sheer folly to pretend that there still exists an agency monitoring the nuclear industry and ensuring public safety. This means that it is also sheer folly to waste a single dollar of anyone’s money, much less that of Oregon taxpayers, on researching the efficacy of Small Modular Nuclear Reactors. Whatever minimal

safety regulations are now in place may vanish at any time at the whim of an apparently uninformed and uncaring President.

In summary, we oppose the effort to undermine or counter the 1980 ballot measure precluding the construction of nuclear reactors in Oregon until a satisfactory method for disposal of the hazardous waste has been developed. In addition, we conclude that the proposal to incorporate Small Modular Nuclear Reactors in Data Centers is at best premature; the technology has not been developed well enough for this to be a promising or tolerable risk. The enthusiastic promotion of the nuclear option based on a campaign of misinformation by the nuclear industry and its apologists should be resisted.

Respectfully Submitted



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