

Sierra Club opposition to House Bill 6019

To: Chairman Lauwers and Members of the Committee

RE: HB 6019 – “Nuclear Feasibility Study”

On behalf of our 150,000 members and supporters across Michigan, we urge your opposition to House Bill 6019. We are concerned about the effect of the entire nuclear fuel cycle on people and the planet. Nuclear energy is risky, dirty, dangerous, slow, and expensive. Instead, our state should be pursuing our cleanest, quickest, safest, and cheapest energy options first: Nuclear power comes out last in every one of those categories.

Looking to a less costly clean, healthy future for Michigan, we urge you to increase the use of renewable energy. It is remarkably cheaper, more available, and cleaner than nuclear power. For example, Consumers Energy is already replacing the power coming from Palisades with new clean energy sources. Saddling our state with the high costs and the dangers of nuclear energy is not needed to ensure Michigan will continue to have reliable power through peak periods. Rather than doubling down on nuclear, we encourage our state to facilitate Michigan’s clean energy transition:

- Enabling new transmission capacity throughout our region;
- Expanding and expediting investments in large-scale solar and wind energy installations;
- Developing more utility scale, residential, and commercial storage capacity to provide energy in high demand times, further stabilize the grid and incur less cost to residents;
- Ramping up efficiency and demand response programs to help residents and businesses conserve energy, save money, and shave peak demand;
- Removing the barriers and restrictions on distributed and community-owned energy generation.
- Seeking the best and most innovative solutions for Michigan’s power needs. For example, Green Mountain Power in Vermont taps into homeowners’ batteries during peak times, lowering the cost and peak demand of electricity for all customers in the Green Mountain Power service area.

After 60 years, despite massive subsidies, the nuclear industry is dying of its own accord. Why? Because it’s too expensive, too dangerous and dirty, and takes too long to deploy. Reactors are closing across the country, and major corporations have declared bankruptcy. Nuclear energy is prohibitively expensive. Construction of nuclear reactors is very complex and can take up to seven years to construct and over \$5 billion in capital costs, and that’s not including the financing costs or costs needed for repair and upgrades.¹ In some cases across the country, projects are costing more than \$20 billion.² According to the World Nuclear Industry Status Report, the average cost of generating solar power is now \$37 per megawatt hour, while wind comes in at \$41, gas at \$59, and nuclear at \$163.³ In a state like Michigan, where we have some of the highest utility rates, why would want to continue investing in the most expensive form of energy? Lastly, we need to think about climate change and the placement of our nuclear power plants. As rising Great Lakes water levels, storm surges and heavy rainfall erodes coastal and inland flood defenses, nuclear plants storing waste along our waterways are not a safe bet in a changing climate. A recent study found that the frequency of climate-related nuclear plant outages is almost eight times higher than it was in the 1990s.⁴ Efforts to build and upgrade plants resistant to climate change will significantly increase the already considerable expense involved in building, operating, and decommissioning

¹ U.S. Energy Information Administration . (2022, March). *Cost and performance characteristics of new generating technologies ...* Retrieved September 16, 2022, from https://www.eia.gov/outlooks/aeo/assumptions/pdf/table_8.2.pdf

² Amy, J. (2022, May 8). Georgia Nuclear Plant's Cost Now Forecast to Top \$30 Billion. *Associated Press*. Retrieved September 16, 2022, from <https://apnews.com/article/business-environment-united-states-georgia-atlanta-7555f8d73c46f0e5513c15d391409aa3>.

³ House, K. (2022, June 3). *Nuclear power is having a moment in Michigan after palisades*. Bridge Michigan. Retrieved September 16, 2022, from <https://www.bridgemi.com/michigan-environment-watch/nuclear-power-having-moment-michigan-after-palisades>

⁴ Ahmad, A. (2021). Increase in frequency of nuclear power outages due to changing climate. *Nature Energy*, 6(7), 755–762. <https://doi.org/10.1038/s41560-021-00849-y>

nuclear plants. This should prompt a substantial reassessment of nuclear's role in helping Michigan and this country reach net zero emissions.

Nuclear power is not clean. While nuclear reactors do not emit carbon dioxide at the point of power generation, the nuclear fuel chain is responsible for carbon emissions during mining, milling, enriching, construction, transportation, and decommissioning. Uranium miners are at risk of exposure to radioactivity on their clothes, skin, and in the air they breathe. Miners and nearby populations are exposed to radon gases. When accidents happen, workers are subject to extremely unsafe levels of radiation.

Besides reactor safety, both nuclear proliferation and the required long-term storage of nuclear waste (which remains lethal for more than 100,000 years) make nuclear power a uniquely dangerous energy technology for humanity. Despite promises from both governments, neither the U.S. nor Canada has built permanent storage facilities for radioactive waste. That means it often is left at decommissioned plants, which are currently located along our Great Lakes shorelines. Many of which are too full to be safe. More than 60,000 tons of highly radioactive spent nuclear fuel is stored on the shores of four of the five Great Lakes.⁵ Furthermore, A recent study in the Proceedings of the National Academies of Sciences revealed that Small Modular Reactors (SMR) can produce 3 - 30 times the waste of large reactors.⁶ Lastly, SMR's are still at best several years away from commercial deployment.

Transporting the waste is very risky. Transporting nuclear waste to a centralized site poses a risk for people who live near railway lines and poses risks to our Great Lakes if transported over waterways.⁷ It would cost billions of dollars. And it would be a potential target for terrorists.

Unlike wind and solar plants, nuclear reactors, if targeted by terrorists, could endanger millions of people. By bringing more nuclear plants online, we are creating more potential targets. Due to terrorism risks, governments must maintain costly security programs to protect nuclear plants that increase the cost of production -- a factor not included in official costs for plant operation but paid for by society.

Overall, nuclear is no solution to Climate Change. There are better alternatives to nuclear power, and the Sierra Club is committed to supporting a clean and safe energy future. We believe that our dollars and efforts are better spent on truly safe and clean, renewable energy sources.

Sincerely,



Tim Minotas
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Sierra Club Michigan Chapter

⁵ Matheny, K. (2019, January 22). 60,000 Tons of dangerous radioactive waste sits on Great Lakes shores. *Detroit Free Press*. Retrieved September 16, 2022, from <https://www.freep.com/story/news/local/michigan/2018/10/19/nuclear-waste-great-lakes/1417767002/>.

⁶ Person, & Gardner, T. (2022, June 1). *Small nuclear power projects may have big waste problems -study*. Reuters. Retrieved September 16, 2022, from <https://www.reuters.com/business/environment/small-nuclear-power-projects-may-have-big-waste-problems-study-2022-05-31/>

⁷ Thompson, C. (2022, May 3). *Why shoreline nuclear power plants pose problem for Great Lakes*. Detroit News. Retrieved September 16, 2022, from <https://www.detroitnews.com/story/news/environment/2022/05/04/why-shoreline-nuclear-power-plants-pose-problem-great-lakes/7445044001/>