

April 5, 2018

Melissa Burlingame, NIU Green Team chair

Northern Illinois University

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Dear Ms. Burlingame:

I wish to applaud Northern Illinois University's green initiative plan and propose a way that we could further reduce our environmental impact. NIU has greatly improved its energy efficiency, but I notice that the NIU sustainability plan does not include very extensive plans for integrating solar power. I want to advance renewable energy as an important part of any green plan because, although the nuclear power we rely on does not pollute our air, long-term it accumulates burdensome waste that potentially threatens both public health and safety (Kyne, Bolin). I do not aim to solve the problem of existing nuclear waste, but rather, to show how our university can help limit its creation by installing solar panels on the roofs of dormitories, hopefully leading the way in transitioning away from nuclear power altogether.

Our country has created more nuclear waste than it can handle and continues to do so. Because of its hazardous nature and long half-life, it poses a danger to everyone who is involved with it, but it particularly concerns those who live where it is stored. Our primary storage solution, Yucca Mountain repository in Arizona, has stalled due to protests (BPC Nuclear Waste Council, 8). If we continue to create nuclear waste indefinitely, we will only become increasingly burdened by it in the future. Therefore, we should all make it a goal to transition to renewable energy sources such as solar power.

I acknowledge that my proposal may meet some objections. You may wonder why I pointed out the problem of accumulated nuclear waste only to suggest a solution that does not directly address it.

Likewise, I foresee how you may believe that I gave up on nuclear power too easily to run after an ostensibly easy copout. Some would argue that we should not let widespread protests make us abandon the Yucca mountain repository in Arizona because it has already received a great deal of investment. If that proves a futile endeavor, they may argue that we still should not give up on nuclear power, advocating the alternatives to Yucca Mountain. We might store it in designate sites across the country, dispose of it in space, or reprocess it for further use. Among these solutions, the first stands out as the most popular, but like Yucca Mountain, it faces the hurdles of gaining consent and support from the public (BPC Nuclear Waste Council, 18). Finally, some may dismiss their fear, saying that nuclear waste does not pose a threat to surrounding populations. I must address all these reasonable arguments before I present my solution.

I have chosen to focus on transitioning to solar power because, although we need to deal with the existing nuclear waste, as Dave Kraft of the Nuclear Energy Information Service has said, we cannot tenably continue relying on nuclear energy long term (McDermott). It would just continue creating increasingly burdensome waste requiring endless storage sites. Even if we ignore the resistance that the Yucca Mountain repository has met with from the surrounding population, as an opposing bipartisan coalition points out, "The nation's existing inventory of spent nuclear fuel and high-level radioactive waste already exceeds the quantity that could be disposed of at Yucca Mountain under current statutory limits" (BPC Nuclear Waste Council, 6). Therefore, although it may store much of preexisting nuclear waste, it will not serve as a solution to the ongoing proliferation of it.

One popular alternative solution would offer financial incentives to communities who agree to host nuclear waste repositories (BPC Nuclear Waste Council, 25). However, upon closer inspection, this idea clearly carries its own ethical dilemmas. Using financial incentives or other benefits to encourage communities to volunteer as nuclear waste storage sites would inevitably lead to a concentration of nuclear waste in low-income communities, with more well-to-do communities under little pressure to

accept aid in any form if they deem the requirements harmful, Thus, it likely would prove a somewhat exploitative, coercive tactic that will overwhelmingly target disadvantaged communities and disproportionately expose them to the potential health hazards that come with storing nuclear waste, leveraging their financial need. It would be better to help these communities in more straightforward ways with no harmful strings attached. The deliberate targeting of Native American communities stands out as particularly concerning, especially given how these nuclear waste storage agreements have turned out to be less than satisfactory for them in the past, not to mention the history the U.S government has of exploiting Native American tribes in general (Ou, 128). The Orange County Register shares my concern, and points out that moreover, future generations cannot consent at all (Sforza).

As for the remaining proposed solutions, launching waste into space carries the risk of explosion and subsequent scattering of nuclear radiation into the atmosphere (Bennett). Recycling nuclear waste is an intriguing idea, but one that seems only promises to limit the problem (NIRS). We must transport most of the waste we produce. Transporting the waste risks accidents and contaminating the environment (Kyne, Bolin). One article by Ted Kyne and Bob Bolin says that "The primary concern of activists, tribes, and communities opposing these two sites is the sheer volume of nuclear waste that will traverse highways and railways through population centers in transit from nuclear reactors and nuclear weapons sites" (Kyne, Bolin). They go on to say that "legitimate concerns exist as to the environmental and human health consequences should a highway or rail accident result in the release of highly toxic radioactive material in a population center" (Kyne, Bolin). Furthermore, our excessive nuclear waste may be targeted by terrorists who wish to make a dirty bomb (McDermott) (Kyne, Bolin). Therefore, the more waste we must shuttle to different sites, the greater risk we pose to both public safety and security.

While we figure out how to deal with existing waste, we should try to limit how much we further contribute. The more waste we create, the more communities we will require to host it. According to *Emerging Environmental Justice Issues in Nuclear Power and Radioactive Contamination*, "Given [the]

cradle-to-grave environmental, health, and safety costs of nuclear power, renewable wind and solar technologies would appear to have major advantages both from a cost per kilowatt and for the lack of long-term health and safety risks to those in proximity and to future generations ([Kyne](#), Bolin). We should aim to transition to a less problematic power source. I suggest a transition to a reliance on solar energy as just such a solution.

I believe that the state of Illinois and the universities therein should lead in transitioning away from nuclear power. Therefore, I propose that Northern Illinois University install solar panels on residential buildings. The solar panels NIU installed to heat water in Gabel and Anderson hall as part of its energy saving program (energysystemsgroup). A team evaluated the NIU engineering building in 2016 and found that installing solar panels on it would pay for itself within 14.7 years, with lighting the building currently costing about \$143,818.92 every year (Akar et al, 60). They estimated that installing the necessary solar panels would cost \$2,767,660 and deemed it "a reasonable alternative" (Akar et al, 60).

I recognize that this solution may raise some concerns and questions. Some may argue that by installing solar panels to heat water in Gabel and Anderson hall as part of its energy saving program, NIU has already done enough. They may question why we should ask NIU to lead the state in emphasizing alternative power sources. They could object that installing solar panels on dorms would needlessly experiment with students' source of energy at a time when their studies will not permit any needless inconveniences due to power failure. However, I will attempt to address these concerns.

The following reasons justify my request. First, NIU resides in Illinois, the state that relies most heavily on nuclear power, and thus produces the most nuclear waste (McDermott) (Nuclear Energy Information Service). We have already stored more than 10,000 tons of nuclear waste here (McDermott). Therefore, as the greatest contributor to this national problem, our state and any institutions therein should

lead the country in addressing it. Second, universities tend to be early adaptors of new technologies, often embracing, developing, and testing advancements long before they become mainstream. I hold up the internet, and more recently, 3-D printers, as just two such examples. Finally, if students lived in a dorm lit by solar power for a few years, they would realize the current viability of the technology, and would be more likely to embrace it later in life as homeowners. They would also be more likely to support policies that encourage the widespread adoption of green technology. I believe backup systems would sufficiently address any concerns about the reliability of solar panels. Therefore, I propose that Northern Illinois University enact this as a first step, possibly making it a goal to rely entirely on renewable energy at some point in the future, and to work towards that goal in further, small, attainable steps in the interim, in the hopes that the rest of the state, and in turn perhaps the country, might emulate it.

I understand that NIU must take many factors into account. Any installation of solar panels on NIU dorm buildings, then, would likewise have to be deemed worthwhile. I could not access the energy usage and cost information necessary to determine cost effectiveness, but based on previous successes on campus, I have hope that it may further prove a worthwhile endeavor. We have already taken many steps to become a more sustainable, energy efficient university, and we can continue to be a leader in that area by increasingly utilizing solar power across campus. I urge you to further look into the possibilities it holds. Thank you for taking the time to read this letter. I look forward to hearing from you soon.

Sincerely,

Claudia Beezhold

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