

# Testimony of Eric Werme, Sutton

## In support of HB219 and related renewable energy bills

My testimony takes a different tack than any of the other testimony I've seen on today's bills.

Inflation has been a significant problem for our economy over the last few years, for reasons that range from post-pandemic supply chain issues, long Covid forcing people out of the workforce, competition for workers, cost of energy, and cost of materials. Ultimately though, our standard of living is very strongly tied to the cost of energy, and that is strongly coupled to our productivity in producing energy.

The current push to renewable energy has its roots in the claim that CO<sub>2</sub> from fossil fuel emissions is behind the global warming we have seen since the late 1970s. CO<sub>2</sub> is indeed a greenhouse gas, and it causes warming, but there are many other climate drivers that most people do not learn about. The mantra that we (NH citizens) must reduce our fossil fuel emissions naturally follows, though we hear less about the nation as a whole, less about Europe, and essentially nothing about China and India. China's emission increases dwarf US's reductions. Their total emissions passed us in 2006 and now are well over twice what we release. See <https://ourworldindata.org/co2-and-greenhouse-gas-emissions> .

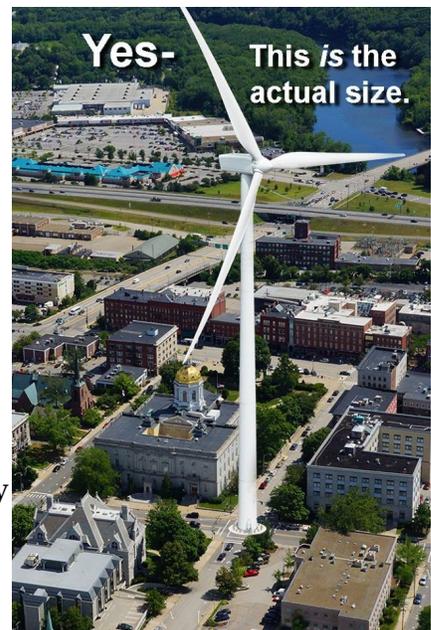
I have been following climate change science closely since 2008, there is much I could say, I'll mention just two points that underlie my low concern. First, some 6,000 years ago during what is now tamely called the Holocene Warm Period, we had forests where we now have retreating glaciers. In the Alps, long lost trails to Asia are becoming exposed leading to new ideas about how Hannibal brought his war elephants to Europe. Second, I've become increasingly curious and concerned that some of our recent extreme weather has very strong analogs in the 1930s. In 1934 we had our coldest February on record. I wondered what it must have been like, but figured global warming gave me no chance to experience a month like that. Ten years ago it repeated and I was astounded to see the two Februaries were similar across the country, and that the Pacific northwest recorded their warmest Februaries ever. See my <https://wattsupwiththat.com/2015/03/08/1934-2015-a-tale-of-two-februaries/>

So I don't see a big push toward renewable energy as important as most people do. Yes, we can run out of fossil fuels, I've been hearing that alarm since the 1960s, but as the price goes up more deposits become economic to develop. Ultimately, I see nuclear energy as the main source of low cost future power demand.

Much of the opposition to the bills have these themes:

- 1) Wind and solar power are cheap and tap free energy.
  - 2) Renewable energy creates good new jobs.
  - 3) The Bow power plant is a horrible polluter and must be replaced by renewable power.
- X) Nuclear power is terrible and must be shut down. (Note my X.)

Let's take a brief look at these one at a time.



1) Wind and solar power are cheap and tap free energy.

Yes, wind and sun are free - if real estate has no value. You can't have mine. Collecting that energy is expensive. I wrote a presentation on wind power and concluded for NH to be powered by wind, pretty much every hilltop in the state would need turbines. Even then, we would need to store power for light wind days, and the battery storage currently available is expensive and catches fire more often than we'd like. E.g. the recent, massive fire at Moss Landing in California near Big Sur just last month. See <https://tpgonlinedaily.com/lithium-battery-fire-in-moss-landing/>

I don't have too much trouble with solar installations, but that may change over time. We don't have as many hurricanes or tornadoes as places where installations have been turned into fields of broken glass. We know they don't produce power at night, but we can't predict cloudy weather well enough to size their battery storage.

Neither wind nor solar can be placed close to where power will be used. In my presentation I showed the size of the 48 MW Groton Wind project versus both the 1,244 MW Seabrook Station nuclear plant and the 695 MW Granite Ridge Combined Cycle natural gas plant in Londonderry. That 48 MW is produced only on windy days, it likely averages only about 15 MW. See my (a bit dated) [https://wermenh.com/wind/wind\\_in\\_NH.pdf](https://wermenh.com/wind/wind_in_NH.pdf)

2) Renewable energy creates good new jobs.

Like motherhood and apple pie, good jobs are always good. Except that... Well, just one example. Groton Wind has something like four full time employees maintaining the 24 turbines. While the wind is free, the hundreds of gallons of synthetic oil the turbines use is not. I was stunned to hear that Granite Ridge had about 30 employees. So on average, each employee produces 23 MW. Each employee at Groton Wind produces 12 MW - when the wind is blowing hard! I don't know the number of people behind the gas consumed by Granite Ridge, but it may not be many once the wells are producing. Good new jobs are nice - especially if it's as few as possible in an economy that is short good employees.

3) The Bow power plant is a horrible polluter and must be replaced by renewable power.

So far this winter, we've had seven sub-zero low air temperatures. I really, really appreciate that I can heat my house on those days. How about we replace the Bow power plant with something reliable, especially for these cold, dark, calm mornings? There are plans to convert it to a solar/battery site by 2028. We'll see.

X) Nuclear power is terrible and must be shut down.

I used an X - not very many people are griping about Seabrook in testimony about these bills. I hear good things about SMRs - small modular reactors. They have little history rely on, perhaps we can put one at Bow as a test system.

In summary, let's see what we can do to provide the power for new businesses in NH and at low cost. I don't see how we can do that without backing away from our misplaced emphasis on renewable energy.