



Sticker shock: Georgia Power hikes, summer heat send bills skyrocketing



IT'S NOT JUST YOU: GEORGIA POWER BILLS ARE UP

By Staff

Published: Jul. 26, 2024 at 1:19 PM EDT

'Show mercy': Georgia Power rate increases driving up power bills through the summer



By [Patrick Quinn](#)

Published: Jul. 25, 2024 at 10:02 PM EDT



ATLANTA, Ga. (Atlanta News First) - Many Georgians are reporting sticker shock as they open up their recent power bills with Georgia Power.

Comments from Patty Durand to the people of Colorado regarding HB25-1040

On April 30, 2024, Georgia Power completed the 2nd of two new reactors at Plant Vogtle, now the largest nuclear generating station in the U.S. and the only state in the nation to build new nuclear in the last 30 years.

One day after that new reactor entered commercial service, Georgia Power raised residential electricity rates 24% to pay for the construction and cost overruns - rate increases that will last for the 60-year depreciation schedule for the reactors. That astonishing rate increase was never mentioned as a possibility – indeed just the opposite. Georgia Power claimed at first that the new reactors would put “downward pressure on rates,” and when it became clear their cost estimates were nowhere near accurate, they switched to claiming a modest rate increase of 2-3% would be the outcome for the duration of the project.

Note that this rate increase comes on top of \$1000 that each Georgia Power household paid for on-bill construction financing costs, collected each month for 12 years throughout construction.

Now that post-Vogtle electricity bills have begun arriving, the people of Georgia are shocked. No one can see all of the internet, but I have counted over 10,000 posts on social media from people expressing pain, outrage and frustration over the steep climb in our bills. Nearly 10% of Georgia Power’s residential customer base was disconnected in 2024 for inability to pay, while the national average for utility disconnects is only 1%.

One of the claims made about Plant Vogtle is that it is the largest clean energy generating facility in the country because it emits no carbon dioxide, the main gas that is causing climate change. However, the mining of uranium for fuel is extremely polluting, the heavy-duty construction activities are extremely energy intensive, and that doesn’t count carbon emissions in the use of concrete. So much concrete was used to build Plant Vogtle’s new reactors that Georgia Power announced that it was the equivalent of building a sidewalk from Miami to Seattle.

Claims that nuclear energy is clean also ignore the waste which is highly radioactive for hundreds of thousands of years, which must be stored on-site at every nuclear facility since no state wants the risk of storing the country’s nuclear radioactive waste.

Since Vogtle’s completion a year ago, no other utility has announced an intention to follow Georgia’s footsteps and build another Westinghouse AP1000 reactor. If Small Modular Reactors succeed in reaching viability, they too will require storage of radioactive waste on-site, greatly expanding the locations of radioactive waste storage in the United States.

Plant Vogtle was put together by a consortium of partners, with no partner responsible for a majority of the project. This makes it difficult to reach a shared understanding of what happened and who paid. But let me clear: Georgia Power added \$11.1 billion to rates for only 1,020 megawatts, which is Georgia Power’s 45.7% share of the project, making this the most expensive electricity in the world.

Nuclear energy is often referred to as “baseload” and “reliable.” Yet flexibility for peak demand is what’s needed now, and electricity cannot be considered reliable when over 20,000 Georgia

Power customers are disconnected every month for inability to pay. The clean energy transition must be affordable and rapid. Nuclear is neither.

I submit this testimony to you in hopes of helping the people of Colorado avoid the fate of Georgia: do not listen to false promises made by nuclear energy advocates that next time will be different. Nuclear energy is the one technology that has never gone down in cost.

To learn more about the specifics of what happened in Georgia please read a report that six Georgia-based organizations put together at TruthaboutVogtle.com. This report shares Georgia's lessons learned from Plant Vogtle to help others avoid a similar outcome.

Submitted by Patty Durand, Conyers Georgia

February 9, 2025

'Insane' & 'ridiculous' Georgia Power bills hit Columbus. What's causing rate spikes?

BY KALA HUNTER
AUGUST 04, 2024 4:30 AM



Kat Cannella sits in front of her home in Mohina Woods in July 2024. Her home was 81 degrees.



**Testimony of Jeff Navin
Director of External Affairs, TerraPower
Before the Colorado House Energy & Environment Committee
In Support of HB25-1040
February 13, 2025**

Chairperson Kipp Vice Chair Willford, and Members of the Committee,

Thank you for the opportunity to provide testimony today in support of HB25-1040, which would add nuclear energy to Colorado's list of clean energy sources. My name is Jeff Navin, and I serve as the Director of External Affairs for TerraPower, a leader in advanced nuclear technology. I appreciate the chance to speak today about the importance of nuclear energy in Colorado's clean energy future.

The Role of Advanced Nuclear in a Clean Energy Future

Colorado has long been a leader in the clean energy transition, advancing policies that support innovation, decarbonization, and economic growth. By formally recognizing nuclear energy as a clean energy source, HB25-1040 ensures that all viable technologies can contribute to the state's ambitious climate and energy goals.

Today's nuclear technologies are vastly different from those of previous generations. Advanced reactors, like TerraPower's Sodium design, offer enhanced safety, flexibility, and integration with renewable energy sources. These next-generation systems can complement wind and solar by providing always-on, emissions-free electricity while also offering energy storage solutions to balance grid fluctuations.

The Sodium Project in Kemmerer, Wyoming

TerraPower is already demonstrating the viability of advanced nuclear energy with our Sodium project, currently under construction in Kemmerer, Wyoming. Just under 100 miles from the Colorado border, this project represents the next generation of nuclear power—one that integrates a 345-megawatt sodium-cooled fast reactor with a molten salt energy storage system. This storage capability allows Sodium to provide dispatchable, emissions-free power, making it a crucial technology for stabilizing grids with high levels of renewable energy. Our project works in conjunction with the growing supply of renewable power on the grid in Wyoming, and is helping meet the demand for clean, reliable electricity throughout the West.

The Sodium reactor is being developed adjacent to the site of a retiring coal plant, offering a pathway for transitioning fossil fuel communities into the clean energy economy without sacrificing reliability or economic stability. This model is particularly relevant for Colorado, where communities dependent on legacy energy industries seek new economic opportunities in the clean energy sector.

Economic and Workforce Benefits for Colorado

Beyond environmental benefits, embracing nuclear energy presents a significant economic opportunity for Colorado. The advanced nuclear industry supports high-paying jobs, technology development, and domestic manufacturing, aligning with Colorado's efforts to build a robust clean energy economy. Within the energy sector, nuclear jobs pay more than fossil fuel or renewable jobs, and the permanent jobs at a nuclear power plant can last for 80 years or more.

Across the U.S., utilities and private companies are investing in new nuclear projects to support increasing electricity demand, including for data centers, AI, and industrial decarbonization. With its highly skilled energy workforce, national laboratory presence, and clean energy leadership, Colorado is well positioned to attract investment and innovation in advanced nuclear energy.

Ensuring Colorado's Energy Independence and Reliability

Adding nuclear to the list of clean energy sources in Colorado also strengthens the state's energy security by providing a stable, long-term power source that is not dependent on weather conditions or imported fuels. Nuclear power plants operate 24/7, ensuring reliability as Colorado expands its renewable energy portfolio.

With the emergence of advanced nuclear technology, nuclear energy is more scalable and adaptable than ever before, offering solutions tailored to Colorado's unique energy needs—from meeting demand for power from artificial intelligence to electric vehicles to industrial heat applications. TerraPower looks forward to engaging with Colorado and its leaders to explore how clean, reliable nuclear power can help the state achieve its ambitious clean energy goals.

Conclusion

By passing HB25-1040, Colorado will ensure that nuclear energy is recognized as part of the clean energy solution, allowing utilities, businesses, and policymakers to consider all available low-carbon options when planning for the state's future energy needs. Such an action is consistent with actions we've seen by states across the country, who have amended renewable portfolio standards to become clean energy standards to include nuclear power, at the federal level, where nuclear has been included as a clean energy technology in the electricity investment and production tax credits in the Inflation Reduction Act, and in the European Union, who recently updated their Sustainable Finance taxonomy to include nuclear power.

The Natrium project in Wyoming demonstrates that advanced nuclear is not just theoretical—it is already being built, creating jobs, and preparing to deliver clean energy in the region. Colorado should position itself to take advantage of the same opportunities.

On behalf of TerraPower, I respectfully request the committee support this legislation and ensure that Colorado remains at the forefront of clean energy innovation. Thank you for your time, and I am available to answer any questions that members of the Committee may have.

Jeff Navin
Director of External Affairs, TerraPower

Georgia Power rate increases putting strain on utility assistance programs

By [Brittany Ford](#)

Published: Jan. 2, 2025 at 7:34 PM EST | Updated: 18 hours ago



ATLANTA, Ga. (Atlanta News First) - A Georgia Power rate increase kicked in the first of the year. The hikes are having devastating effects on programs that offer utility assistance.

The Fulton Atlanta Community Action Authority, also known as FACAA, opened enrollment for its utility assistance program on Thursday.

Atlanta News First spoke with people who said the system crashed within the first 10 minutes and appointments were completely booked.

- There are no currently operating SMRs (small modular reactors) in the US, only proposals and untested/cancelled designs. National Academies of Science,(2023) estimates that the earliest deployment year will be 2050. Worldwide there are only 2 operating SMRs_ in Russia and China.
- Both have a poor track record of actual operating capacity: less than 30%. Nuclear plants in the US and Europe have experienced lower capacity/reliability as climate change has grown. Yet the bill cites high capacity and reliability as reasons to define nuclear as “clean”.
- Uranium is a finite, non renewable resource.
- Uranium mining, milling, and enrichment present significant pollution, public health risks, emit greenhouse gases and pose environmental justice problems.
- There is no permanent solution to nuclear waste disposal.
- Plants produce thermal pollution of rivers.
- Costs 3 to 5 x more than renewables
- Nuclear makes us less energy independent .We currently import 90 % of the uranium used in nuclear power plants, much of it from unstable countries like Kazakhstan and Namibia.
www.eia.gov
- Federal law indemnifies plants, so the burden falls to taxpayers
- Nuclear power is not “clean” or renewable. It is far more costly and presents us with a host of problems that have no current solutions, including national security issues not covered here. Ironically these problems will intensify as impacts of climate change increase. Emphasizing and funding nuclear power will delay real decarbonization. Please vote no.

Dear Members of the House Energy & Environment Committee,

I am writing to express my strong support for House Bill 25-1040, which seeks to include nuclear energy as a recognized source of clean energy under Colorado law. As our state strives toward a sustainable energy future, it is essential to adopt a diverse and resilient energy portfolio to ensure affordability, reliability, and environmental stewardship. Nuclear energy, particularly advanced designs such as small modular reactors (SMRs), should be integral to this strategy.

Colorado's electricity demand is projected to increase significantly in the coming decades. A study highlighted by Big Pivots indicates that the state's peak electricity demand, currently at 10 gigawatts (GW), could grow to 14 GW under a business-as-usual scenario by 2045. In a high-demand scenario, peak demand could double to 20 GW by 2045.

Currently, Colorado's energy strategy relies heavily on renewable sources such as wind and solar power. In 2023, renewable sources accounted for 39% of Colorado's total in-state electricity net generation, with wind power contributing 70% of that renewable generation.

While these renewable sources are vital to reducing greenhouse gas emissions, they are variable by nature and may not consistently meet the state's growing energy demands. Their intermittency poses challenges for maintaining a stable and reliable power supply. To mitigate these challenges, substantial investments in energy storage and grid infrastructure are required to balance supply and demand. However, current storage technologies, such as batteries, are not yet capable of providing long-duration energy storage at the scale necessary to fully support a grid reliant solely on intermittent renewables.

Nuclear energy offers a reliable, carbon-free solution to complement renewables. Notably, nuclear power plants have a capacity factor of approximately 92.7%, meaning they operate at full power more than 90% of the time, providing a stable energy supply.

Advanced nuclear technologies, such as SMRs, address many of the traditional concerns associated with nuclear power. Their modular design enhances safety, reduces waste, and allows for faster deployment compared to traditional nuclear plants. SMRs can be co-located with retiring coal plants, preserving jobs and maintaining economic stability in communities historically reliant on fossil fuel energy production. The development of a small modular reactor can create up to 900 jobs lasting up to 4 years, as well as up to 300 permanent jobs.

By including nuclear energy in the statutory definitions of "clean energy" and "clean energy resource," Colorado will align with national and global efforts to expand advanced nuclear technology. This inclusion will attract critical public and private investment in our state's clean energy sector, fostering a balanced energy mix that ensures both environmental responsibility and energy security for Coloradans.

I urge the committee to pass HB 25-1040 and take a pragmatic approach to Colorado's clean energy future—one that embraces nuclear energy as a necessary and complementary resource alongside renewables. Thank you for your time and consideration.

Sincerely,

Jonathan Pira

- There are no currently operating SMRs (small modular reactors) in the US, only proposals and untested/cancelled designs. National Academies of Science,(2023) estimates that the earliest deployment year will be 2050. Worldwide there are only 2 operating SMRs in Russia and China.
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www.eia.gov
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Thank you, former State Rep Diane Mitsch Bush

Testimony on HB25-1040: Concerning the Inclusion of Nuclear energy as a Source of Clean Energy

By William B. DeOreo, M.S., P.E., 3030 15th Street, Boulder, Colorado, 80304.
wbdeoreo@gmail.com, 303-859-4997

Dear Members of the House Energy and Environment Committee,

I strongly support the inclusion of Nuclear Energy as a source of clean energy for determination of how retail utilities are meeting their clean energy targets for 2050 as proposed by this bill, and I urge you to pass the bill back to the full House with favorable recommendations. If you fail to allow nuclear energy to be considered for inclusion in the state's energy portfolio you will be tacitly deciding to limit our energy sources to effectively wind, solar and batteries. I believe this would be a major mistake from all perspectives, including the impacts it will have on the land, air and water of our State.

Under the current definition of clean energy, only wind, solar, geothermal, and small hydropower qualify as clean energy, and the energy source with the smallest output of emissions per KWHr, nuclear power, is specifically excluded! This places a severe handicap on nuclear energy since utilities choosing it do not get to include it as a clean energy source for meeting their required clean energy targets. This means that companies with a nuclear power solution never have an opportunity to present these options, and nuclear energy is dismissed out of hand.

The environmentalist mindset often makes two errors in assessing the cleanliness of various energy sources: it ignores the ancillary waste and pollution caused by so-called "green" energy such as wind and solar, and it greatly over-estimates the amount of waste and pollution caused by nuclear power plants. Nuclear opponents frequently state categorically that the "waste problem" with nuclear reactors is unsolvable and hence invalidates nuclear energy as a source of clean energy.

The reality is that green energy projects create massive amounts of waste over their life cycles. The use of levelized cost accounting, which is the official way of comparing energy projects, is meant to include all costs for construction, financing and operation of competing energy sources over the lifetime of the projects, but the results can be misleading if not all costs are included or if the actual lifetimes are shorter than assumed. For example, many wind projects assume a 20 year life for the wind turbines, but experience has shown that actual lifetimes can be 10 years or less before "repowering" is required.¹ A study in Ireland showed that most of the

¹ For example, see: <https://rclutz.com/2024/08/21/the-short-lives-of-wind-turbines/>

heavy gearboxes used to increase the rotation speed from 15 RPM at the blades to 1800 RPM at the generator last only 7 years.²

It should also be pointed out that a major justification for the wind and solar system is that they emit no CO₂ during normal operation, but the levelized cost analysis system does not include an analysis of the CO₂ emitted as part of the construction or retirement of these facilities. So, to the degree that levelized cost analysis limits itself to just monetary parameters it is inherently incomplete.³

Wind and solar projects require backup power sources during periods when weather conditions do not allow for their operations.⁴ These are normally planned as large lithium battery storage facilities. These facilities are dangerous. Figure 1 shows a fire that consumed approximately 80% of the batteries at the 400 MW⁵ Moss Landing storage facility near Monterey, CA in January of 2025. This fire presumably started with a short circuit in one of the modules and quickly spread to the entire facility through thermal runaway. Lithium fires are very difficult to contain because Lithium burns when it comes into contact with water, which is a major complication for most fire departments. According to press reports, the strategy for fighting Moss Landing fire was to simply allow it to burn itself out.

The Moss Landing fire burned for several days, required evacuation of nearly 2000 persons and spread toxic emissions and heavy metals over hundreds of acres of prime agricultural land in the Salinas valley. What could be more environmentally friendly than this?

The current energy plan for Colorado includes construction of 24 GW of 4-hour battery complexes compared to our current inventory of 0.01 GW. The storage of 24GW of power in Colorado would require construction of the equivalent of 60 Moss Landing complexes across the state!

Furthermore, the Moss Landing project went into full operation in July of 2021, which means that it was a brand-new facility, which ran for only 3 ½ years before suffering a catastrophic failure. These are not good odds from a safety or pollution perspective. The United States nuclear power fleet has been in operation since the Shippingport plant was completed in 1957 and has never suffered anything close to the magnitude of the Moss Landing fire, Three Mile Island included.

² See: <https://www.youtube.com/watch?v=LkIUvKMP18g>

³ For a description of the levelized cost of energy procedure see: <https://corporatefinanceinstitute.com/resources/valuation/levelized-cost-of-energy-lcoe/>

⁴ In Colorado the average percent of time that a windmill is actually making power is 34%, so backup is required for the other 66% of the time when it is not.

⁵ The Moss Landing plant has a capacity of 400 MW of power for a 4 hour duration, for 1600 MWHrs of energy output. According to NS Energy it was the largest biggest battery storage facilities in the world. (See <https://www.nsenegybusiness.com/projects/moss-landing/>)



Figure 1: Moss Creek Lithium Battery Complex burning in Monterey, CA (January 2025)

If Colorado chooses to limit its sources of clean energy to ones that require the construction of an equivalent of 60 Moss Landing battery storage facilities it must be aware that this choice has serious environmental implications and is not a simple and benign plan.

In addition to requiring massive amounts of battery storage systems (24 GW of 4 hour storage), the current “clean energy” plan requires the construction of 37 GW of new windmills (7.4 times our current capacity) and 56 GW of new solar panels (56 times our current capacity). Keep in mind that all of this construction is to supply an actual peak summer demand of only ~7 GW in the State of Colorado.⁶ Each one of these components will require land, roads, and electrical transmission lines to implement.

A nuclear power system could be implemented on existing power plants (such as the Fort St. Vrain plant, which is already licensed as a nuclear facility) with little or no new transmission, land or roads required.

An environmental issue that is often overlooked with “green” energy is the waste that is left over during operations and retirement of the facilities. Figure 2 shows a site in Wyoming where derelict blades are being stored. According to the report, landfills in Wyoming will not accept these blades unless they are ground into small bits, which is very expensive, so the blades are simply accumulating above ground.⁷

⁶ See Table 16 of the 2021 Colorado Electrical Resource Plan and Clean Energy Plan by Public Service Company of Colorado. (chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.xcelenergy.com/staticfiles/xcel-responsive/Company/Rates%20&%20Regulations/PUBLIC%202021%20ERP%20&%20CEP_120-Day%20Report_FINAL.pdf)

⁷ See: <https://cowboystatedaily.com/2024/08/21/why-old-wind-turbine-blades-arent-being-buried-in-landfills-anymore/>



Figure 2: Derelict windmill blades in Wyoming

If Colorado expands its windmill inventory by a factor of 7.4, as currently planned, the number of derelict blades and volume of worn-out turbine equipment is going to grow by at least the same factor.

The same holds true of solar panels, which have finite life spans. They are also vulnerable to damage from hail and wind storms. In order to meet the goal of having 56 GW of solar panels installed will require installation of literally millions of panels. If only 0.1% of them need to be disposed of every year we are talking about hundreds of thousands of waste panels in need of disposal⁸. Where are we going to put these things? You must ask yourself whether there are or will be economic ways of disposing of the waste from both wind and solar before you embark on this wind and solar energy future.

⁸ 56,000 MW x 5000 200kw panels/MW x 0.1%/yr = 280,000 dead panels per year replacement



Figure 3: Field of destroyed solar panels after a hailstorm; not so resilient after-all.

In comparison, the major waste issue with nuclear power plants are the spent fuel rods that need to be sequestered once they are no longer useable for power generation. First, it should be pointed out that not every nuclear reactor design generates these items, and even when they are generated they represent a small volume of material that can easily be contained on-site, or eventually sent for reprocessing into new fuel, or sequestering in underground storage. Nuclear power plants are the only type of energy systems that can contain virtually all of their wastes on site or in storage in a condensed and hardened system.

The point that I am stressing is that as legislators and policy makers you cannot simply look CO2 emissions during operation as your criterium for gauging the cleanliness of a power plant. You have to look at the entire life cycle wastes, and include the nasty side stream for things like lithium battery storage system.

Issues with Nuclear Reactors

According to Dr. Alvin Weinberg, one of the founding fathers of nuclear reactor development there are over 2000 possible designs for nuclear reactors.⁹ Unfortunately, the entire industry settled on the pressurized water cooled reactor used for the navy in its Nautilus submarine. This design worked fine for small reactors, like those in submarines, but as it is scaled up creates serious problems.

The main problems with nuclear reactors that are cited by opponents are:

- The need for Uranium fuel that requires mining,
- Uranium requires enrichment,

⁹ Weinberg, Alvin M. “The First Nuclear Era”, American Institute of Physics, New York, (1994)

- Solid fuel pellets have a relatively short life-span due to buildup of xenon gas inside the pellets which inhibits the reaction,
- The U.S. must import virtually all of its enriched Uranium from foreign sources (e.g. Russia) and has only a miniscule capacity to make high assay fuel that is a preferred fuel for many of the new small reactors under development.
- Once the solid fuel pellets are exhausted, they must be removed from the reactor and either placed into on-site storage casks or taken for burial off site. Currently, there are no subterranean storage sites available.
- The alternative to storage of spent fuel is reprocessing, which involves separating out the fissile materials from the waste and then using it to manufacture fresh pellets. This has weapons proliferation implications which is largely why Presidents Carter and Clinton stopped reprocessing in the United States.

The nuclear industry has developed designs, such as the Westinghouse ¹⁰AP1000 which do a good job minimizing the problems associated with nuclear reactors. If given a choice between the current “green” energy plan and one relying on reactors such as the AP1000 I would recommend adopting the nuclear power option. The entire 7 GW peak summer demand could be met on a 24/7/365 basis with 7 or 8 plants. I would certainly prefer to live near an AP1000 than one of the 60 lithium battery facilities envisioned in the current plan (See Figure 1).

I believe that any of the current slate of new nuclear power reactors such as the AP1000 or the various small modular reactors would be preferable to the current green energy plan, and that all of the issues I listed above can be addressed fairly easily. Having said this, I would like to point out that we have other options for nuclear power that totally side-step these problems or reduce them to trivial proportions. I am referring to the liquid fluoride thorium reactor, which was pioneered and put into test operation for over 5 years at the Oak Ridge national lab in the 1960s and 70s.

Here are some brief explanations of why I believe that the liquid fluoride thorium reactor (LFTR) is superior to the standard designs and why I believe it is the best hope for an energy supply that is economic, virtually limitless, safe and the cleanest power supply on the planet.

Advantages of the LFTR

Once a LFTR is started up it does not use Uranium fuel; it uses Thorium, which is a non-fissile but fertile element that converts to fissile U233 when exposed to neutrons in the reactor. Thorium is a byproduct of rare earth mining and there are proven deposits of rare earth minerals in Utah and western Colorado.¹¹ There is also a rare earth processing facility in Wheat Ridge, Colorado, so this technology is not foreign to our State.¹²

¹⁰ The AP 1000 reactor is currently fully licensed for construction in the U.S. and was the last reactor built here at the Vogtle site in Georgia. The lesson learned there will make construction of the next reactor much simpler and less expensive than were seen in Georgia.

¹¹ See: <https://kslnnewsradio.com/science-technology/rare-earth-minerals-found-in-utah-colorado-are-critical-for-cleaner-energy-sources/2105465/>

¹² See: <https://www.nationaldefensemagazine.org/articles/2020/7/16/rare-earth-processing-plant-opens-in-colorado>

Because all thorium is fertile it does not require any enrichment and can be used directly in the reactor. This virtually eliminates the enrichment problem.

In a LFTR the fuel is dissolved in a molten salt solution so no solid fuel is required. The use of liquid fuel eliminates the time and expense required for fabrication of solid fuel elements, which is a major savings and greatly simplifies the entire operation.

Reaction wastes, that create such a problem for solid fuel systems, can be continuously purified in a liquid fuel system. Xenon gas can be continuously purged from the system and the various fission byproducts can be removed through physical/chemical processes, so they never build up in the system. Many of these isotopes have valuable medical and industrial uses which can create an additional income stream for the plants.

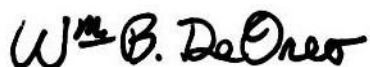
All of the high level fissile material in the LFTR remains in the reactor until it is consumed, so this eliminates the need to store high level wastes or to reprocess them. This is a massive advantage the does not receive enough attention.

The use of Thorium fuel eliminates the need to import or enrich Uranium fuels. The entire system can be run with Colorado/North American materials derived as byproducts of rare earth mining.

A final advantage of the LFTR is that it does not require water for cooling, and the salts that carry the fuel have very high melting and boiling points which allow the reactor to operate at high temperatures and low, near atmospheric, pressures. This eliminates the need for massive containment structures and makes the melt down of the core impossible, since it is in a liquid state during normal operations.

The conclusion here is that the LFTR avoids all of the safety and environmental problems that opponents of nuclear power rightly point out as issues with nuclear power. As long as Colorado will not include nuclear power as a clean energy source, however, it is unlikely that this technology will ever see the light of day here. Therefore, I urge the members of you committee to pass this bill back to the full House with favorable recommendations.

Sincerely,

A handwritten signature in black ink that reads "Wm B. DeOreo". The signature is written in a cursive, slightly slanted style.

William B. DeOreo, M.S., P.E.



LCS Committees <committees.lcs.ga@coleg.gov>

HB 25-1040

Jim Kavanagh <jimkavanagh634@gmail.com>
To: committees.lcs.ga@coleg.gov

Thu, Feb 13, 2025 at 12:12 PM

I am writing to wholeheartedly oppose HB25-1040. Have we not learned anything from the disastrous project known as Rocky Flats and other nuclear projects worldwide? It is clear to me that we humans can not be trusted with this technology and should simply leave it alone. Is it a surprise to anyone that the first use of this technology was to build bombs to murder other humans? We are still dealing with the fallout of Rocky Flats! It has not been cleaned up mainly because Democrats and Republicans are hell bent on bringing in private companies to make profits by ignoring safety concerns at every single step along the way from conception to cleanup to outright lying in order to make real estate deals and build supermarkets. Cleanup projects at Rock Flats have been a disaster and many people in Arvada still have cancer. It will be thousands of years before the area is safe for humans again. Please stop making the same mistakes over and over. You have cognitive dissonance. Wake up legislatures! You can NOT trust private companies to clean up the messes they created in the first place. Do not even let them start. Tell them to take their campaign contributions and stick them up their asses!



Members of the Committee,

My name is Katherine Merlin and I represent WildEarth Guardians. I am here to testify against House Bill 25-1040, on which I ask you to vote “no.” Thank you for your time in considering the following comments.

I would like to start with the places where we agree. Demand for new sources of electricity is increasing in Colorado as a result of multiple factors including the transition away from fossil fuels. The transition away from fossil fuels is urgently needed in Colorado, as our state faces disproportionate risks from climate change. The current path to eliminating GHG emissions in Colorado does rely on a transition to solar and wind energy along with energy storage. The pace of technological development in energy generation, storage, delivery systems, and “smart” meters and appliances requires a responsive regulatory environment.

The legislative declaration states that “providing more options for generating electricity in Colorado will lead to a less expensive and a more reliable path to eliminating greenhouse gas emissions.” However, nuclear energy is *the* most expensive kilowatt hour available today. The most recently completed nuclear facility in the U.S. is the Vogtle plant in Georgia (specifically reactor 4). This project had a construction cost of \$15,000 per kilowatt of capacity built and took 11 years to build, according to the US Dept. of Energy. The levelized cost of electricity (LCOE) – an estimate of the lifetime costs of a power plant expressed in cents per unit of electricity produced (kilowatt-hours, kWh) – accounts for the construction costs, construction time, financing, fixed and variable operations and maintenance, and fuel costs. Vogtle had an LCOE of 22.3 cents/kWh, compared to the LCOE of gas fired electricity between 4.1 and 5.6 cents/kWh (depending on gas prices). In 2022, the global weighted average LCOE for newly commissioned onshore wind projects was \$0.033/kWh. In 2023, the global average cost of electricity from utility-scale solar PV fell to \$0.044 kWh. Solar and wind are by far the cheapest energy sources to build and operate, full stop.

The next three paragraphs in the legislative declaration relate to “advanced nuclear,” “small modular reactors” (SMRs), and “new designs for advanced nuclear reactors.” This is extremely important, because all of the projects in Colorado which have been discussed publicly involve these “next gen” promises – for example in Pueblo or Aurora or Craig and Hayden, all of which have explicitly proposed SMR design. But the actual text of this bill does not limit the proposed changes to SMRs or next gen design. It just says that “nuclear is clean.” With one hand this industry is promising new, smaller, safer, and cleaner technology is just around the corner. But with the other, it’s not making any promises. Georgia’s Vogtle facility covers 3,200 acres – almost ten times larger than the Suncor facility. That is not a small footprint. “Small modular reactors” have never been built in the US. While the US Nuclear Regulatory Commission approved the first SMR model for the US market in 2022, whether these “advanced” or “small” designs are truly safe is still very much a matter of debate. But that point is entirely swallowed by the fact that this bill doesn’t actually require “clean nuclear” plants to be small or new or next

gen in the first place. If Colorado intends to lay the regulatory groundwork to approve only these “new designs” which will be ready in the 2030s, this bill is not the path forward. There is ample time for future legislation to be proposed, vetted and debated to shape the regulatory environment for future next gen nuclear facilities.

A related point to these paragraphs is where projects have already been proposed. Four communities: Pueblo, Aurora, Craig, and Hayden. I’m sure you will hear from Puebloans about this, so I’ll let them speak for themselves. Aurora is suburb of Denver and by itself is our third largest city – is this really where we want to put a new nuclear facility, whether it’s big and old or small and very, very new? On the other side of our state in Craig and Hayden – the Yampa River runs through both of these communities, before flowing into the Green River and then the Colorado River. In 2015 we just saw the Gold King Mine disaster, where a relatively small amount of water contaminated with mining waste spilled into the Animas River, affecting water in four states and putting Silverton on the US Superfund list. That mine only operated from 1887 to 1907 and it didn’t have anything to do with uranium. In 2025, are we really going to put new uranium fission reactors at the headwaters of the Colorado River?

I will end with water. Nuclear power requires vast amounts of water for cooling that Colorado cannot afford to use in this way, particularly when there are other ways of generating power that require dramatically less water. Notably, the water demands of solar energy and wind energy are orders of magnitude less than what nuclear power requires. Estimates of relative water consumption between energy sources is difficult to find, and numbers are hard to compare because not all water use is “consumptive”. Hydroelectric energy “uses” the most water, but that use is essentially entirely non-consumptive. However, a 2019 study called “Water use of electricity technologies: A global meta-analysis” published in Renewable and Sustainable Energy Reviews shows that “In the U.S., operational water consumption for nuclear power plants with closed-loop cooling could be more than 3000 L/MWh with a minimum of 1408 L/MWh.” These compare in the same analysis with American PV solar energy at less than 50 L/MWh and wind at essentially zero.

We agree that we need more clean energy, but nuclear power is not the answer. Wind and solar are by far the cheapest sources and also have the least environmental impact, which could be even lower if we built more into our existing built environment and on brownfield sites instead of undeveloped land. We need more secure, resilient electrical grids hardened against natural disasters and manmade threats. We need to phase out fossil fuel development and transition to an economy for the future, not the past. But "new" nuclear energy is an old false solution repackaged and sold to us as a revolution. We need to stop asking poor and majority-minority communities to bear the burdens of environmental harm and health risk as sacrifice zones.

Please vote “no” on HB 25-1040.

Sincerely,
Katherine Merlin
Staff Attorney
Climate & Health Program
WildEarth Guardians



TO: **House Bill Sponsors:** Valdez, A, and Winter, T.
Senate Bill Sponsors: Roberts, Liston
Members of the House Energy and Environment Committee:
Representative Alex Valdez (Chair), Representative Elizabeth Velasco (Vice Chair), Representative Carlos Barron, Representative Kyle Brown, Representative Sean Camacho, Representative Ken DeGraaf, Representative Ryan Gonzalez, Representative Junie Joseph, Representative Amy Paschal, Representative Manny Rutinel, Representative Jenny Willford, Representative Dan Woog

FROM: The Colorado Renewable Energy Society (CRES)
DATE: February 5, 2025
RE: **HB25-1040 - A bill for an act- Concerning the inclusion of nuclear energy as a source of clean energy.**

After reviewing the bill, CRES urges all Committee members to **vote NO on HB25-1040.**

Rather than provide the Committee with point-by-point comments on the bill, we will focus on the **key question:**

Should the State of Colorado statutorily define nuclear energy as a source of clean energy?

It is well-understood that all energy sources have different environmental challenges. For decades, energy sources have been evaluated on whether they are clean- based on their impacts on land, air, water, health, and carbon loading to the atmosphere.

We draw your attention to page 4, line 27 - CRS 40-2-125.5 (2) Definitions (b) (I):
Here is the narrow definition of “clean” in this statute –

“Clean energy resource means any electricity-generating that generates or stores electricity without emitting carbon dioxide into the atmosphere.”

A “**NO**” vote will affirm the logic and understanding that nuclear energy should not somehow achieve the mantle of being “clean” on the basis that it fits into the statute’s narrow definition of “clean.”

To be clear, **just because nuclear energy conforms to a narrow definition** of “generating electricity without emitting carbon dioxide into the atmosphere,” **that does not make nuclear energy “clean.”**

We ask Members to consider the nuclear fuel cycle- from uranium mining - to the reactor - to the toxic waste left as a legacy gift to future generations. And much more. When viewed appropriately through this wider understanding of the full nuclear fuel cycle, the public interest will be served. We ask that you reject the very idea that Colorado should falsely define **nuclear energy as a source of clean energy in state statute.**

It is near-universally understood, and often codified, that natural renewable energy sources – such as wind and solar – are, **in fact**, clean. We mention this to be prepared to hear, then reject, a distraction argument that states - “Well, what about renewable resources? They are not perfectly clean, are they?” The answer is: “Of course not - renewable energy, and no energy source is perfectly clean. Especially not nuclear power.” Be prepared to push back when nuclear proponents routinely fail to even mention toxic uranium mining, long-lived radioactive wastes, capital costs, and so forth, while attempting to distract the discussion over to some comparatively much smaller problem with renewable energy.

An outright rejection of this bill is preferred. However, **a clarifying amendment** may be in order to help prevent the annual repetition of the introduction of similar pro-nuclear bills. We ask that you consider the following statutory improvement:

“Clean energy resource means any electricity-generating that generates or stores electricity without emitting carbon dioxide into the atmosphere, **AND THAT DOES NOT GENERATE LARGE AMOUNTS OF LONG-LIVED TOXIC WASTE PRODUCTS.**”

For further information, we refer you to the [CRES Position on Nuclear Power](#), found on the next page.

Thank you for your consideration of these views and recommendations.

Sincerely,

Vincent P. Calvano
CRES Policy Committee
Colorado Renewable Energy Society



The Colorado Renewable Energy Society's Position on Nuclear Power

Guiding Principle: CREC recognizes that addressing climate change is an urgent issue. This requires a rapid transition to zero-carbon energy sources.

Nuclear Power Considerations: Some Colorado utilities and policy makers are exploring new nuclear power plants to provide zero-carbon electricity. Most existing nuclear power plants were built in the 1970s and 1980s and have significantly reduced carbon emissions from the electric sector. However, the cost to build new nuclear power plants has increased greatly since then. Nuclear advocates claim next generation nuclear technologies and Small Modular Reactors (SMRs) will make nuclear affordable.

Colorado's Experience with Nuclear Power: Colorado's only experience with nuclear power, the Fort St. Vrain high-temperature gas-cooled reactor (HTGR), began operating in 1979, seven years behind schedule. It faced numerous operation and maintenance (O&M) problems and was decommissioned just ten years later, with Colorado ratepayers bearing much of the cost.

The Changing Energy Landscape: In contrast to nuclear power, wind and solar are now the lowest-cost and fastest-growing sources of new generation. Colorado's largest utility, Xcel, is on track to provide 85% of its electricity from wind and solar by 2030. These variable resources need to be firmed with flexible sources such as demand response, storage, hydropower, as well as expanded transmission. Traditional base load power plants, which formed the backbone of the 20th Century electric grid, cannot meet this need.

CREC's Perspective: CREC believes new nuclear power investment in Colorado is ill-advised for three reasons:

- 1. High Cost:** New nuclear power plants are very expensive. Cost projections for proposed U.S. Small Modular Reactors (SMRs) continue to increase. Newer nuclear technologies can face unforeseen challenges that add cost, as demonstrated by the Fort St. Vrain plant.
- 2. Long Construction Time:** U.S. nuclear power plants typically take over a decade to design, permit, and build. In that time, cheaper and faster-to-build zero-carbon resources could have displaced fossil generation and associated emissions.
- 3. Lack of Flexibility:** Without thermal storage, which further raises capital costs, utilities will not operate nuclear power plants in the flexible manner that is needed because it reduces the revenue needed to pay off debt and increases O&M costs.

CREC's Stance: CREC opposes the use of taxpayer or rate-payer funds to support new nuclear power plants in Colorado because they are unlikely to provide timely, cheap, reliable, carbon-free power. Instead, CREC believes that funds should be invested in the rapid harnessing of Colorado's extensive solar and wind resources, together with end-use efficiency, storage, demand response, and transmission. These demonstrated solutions address the urgent need to immediately and dramatically reduce carbon emissions.

About CRES:

CRES is a Colorado nonprofit corporation established in 1996. CRES creates environmental, social, and economic benefits for Colorado by promoting energy efficiency and renewable energy of all types. CRES advocates for a carbon-neutral Colorado powered by 100% renewable energy, and is engaged in promoting energy efficiency, demand side management, beneficial electrification, and the full breadth of renewable energy development in Colorado's communities. CRES also advocates for ways to achieve Colorado's emissions reduction targets.

CRES educates and assists the state's consumers, businesses and communities to advance renewable energy and energy efficiency in a manner that supports the economy and the environment.

CRES membership includes approximately 350 individual and business members interested in renewable energy and energy efficiency. The organization reaches more than 6,000 email subscribers and sponsors educational programs attended by hundreds.

CRES works on behalf of consumers, small businesses, and communities throughout the state to promote the expeditious transition from fossil fuels to renewable energy.

Name: ERIC R [REDACTED] Age 9

Date: 11-4-24

Persuasive Topic:

Against nuclear power.

What is nuclear power? Nuclear power is a type of energy that can power a lot of things. I know that it sounds good, but it can be very dangerous if something goes wrong. I think it is a bad idea because it is expensive, dangerous and bad for the environment. That is why I think that nuclear power is bad.

How expensive do you think nuclear power is and the answer is? Well, in 2012 it cost \$51.22 per megawatt an hour according to (statista.com) Now in 2024 it has come down, but I don't think it has come down enough. That is one reason why I think nuclear power is a bad idea.

Another reason is it is very dangerous if the power plant explodes. People that are living next to the nuclear power plant can die. Even if they do survive the explosion will send out radiation. These radiations will infect the human body and it can cause death.

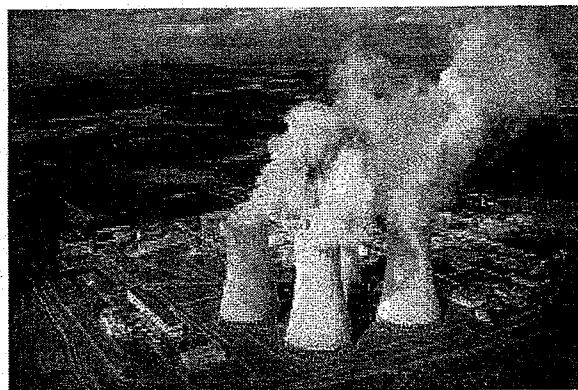
Have you ever driven by a nuclear factory before? If you have you may have seen signs on the fences that say caution nuclear waste and sometimes there are plants behind the fence. The plants behind the fence are being infected and it is infected by nuclear waste. That is why I think that nuclear power is bad for the environment.

In conclusion, I think nuclear power is a bad source of energy. Because it is expensive, dangerous and bad for the environment. That is why I think that we shouldn't use

Reasons

Nuclear Regulatory commission

Statista.com



Not Good!!

Dr. Joseph A. Bonometti
Flibe Energy, Inc.
7800 Madison Blvd
Huntsville, Alabama 35806



February 11, 2025

Honorable Members of the Colorado General Assembly
State Capitol
200 E Colfax Ave
Denver, Colorado 80203

Subject: Strong Support for House Bill 25-1040 - Inclusion of Nuclear Energy in Clean Energy Definitions

Dear Members of the Colorado House Energy and Environment Committee,

I am writing to express my support for House Bill 25-1040, which seeks to include nuclear energy within the state's definition of "clean energy."

Why Support HB25-1040:

- **Climate Goals.** With Colorado's ambitious targets for reducing greenhouse gas emissions, nuclear energy, which produces zero emissions during operation, can be a critical component in our strategy to achieve these goals. It offers a stable, reliable source of clean energy that complements the intermittent nature of solar and wind.
- **Energy Security.** Diversifying our energy portfolio is crucial for energy security. Nuclear power provides a baseload of electricity that can balance the grid as we transition from fossil fuels, ensuring we have a stable supply even when renewable sources like solar and wind aren't at full capacity.
- **Economic Impact.** The development of nuclear facilities could bring high-quality jobs to communities, particularly those facing economic downturns due to the decline of traditional energy sectors like coal. This could be particularly beneficial for regions like Craig or Hayden, which are looking to transition away from coal.
- **Innovation.** By recognizing nuclear as clean energy, Colorado can foster innovation in nuclear technology, potentially leading the way in developing safer, smaller, and more efficient reactors that could further reduce risks and costs.

Addressing Concerns:

- **Safety.** Though traditional nuclear reactors have a very impressive safety record, modern nuclear technologies bring improvements through inherent (non-engineered) safety. This will not only increase safety, but also, reduce costs.

- **Waste Management.** While nuclear waste is a concern, ongoing research and development aim at better solutions for storage and potential recycling of nuclear materials. Some advanced reactor technologies are specifically designed to consume nuclear waste from today's reactors and minimize generation of long-lived waste isotopes. Colorado could one day support solving this generational challenge.
- **Public Engagement.** It's vital that we continue to engage with the public, providing transparent information about nuclear energy's benefits and risks to foster understanding and support.

HB25-1040 is not about endorsing nuclear power at the exclusion of other clean energy solutions but recognizing that a multifaceted approach is necessary for a sustainable energy future. I urge you to vote in favor of this bill, setting a precedent for comprehensive, forward-thinking energy policy in Colorado that considers all viable clean energy options.

Thank you for considering this comment.

Sincerely,



Dr. Joseph A. Bonometti
Chief Strategy Officer
Flibe Energy, Inc.

February 12, 2025

Dear Chair and members of the committee,

Nuclear power is far from clean, it is dirty and dangerous. “New” nuclear technologies or Small Modular Reactors (SMRs) are nuclear reactors that bring with them the same old challenges associated with nuclear energy.

Indeed, in the year 2025 nuclear energy continues to have four major unresolved problems: safety, waste, proliferation and costs. Accounting for subsidies, nuclear power costs 4-5 times more than solar power, so even in the unlikely event new reactors were to cut nuclear energy costs by half, it would still be at least twice as expensive as solar energy is now. A report published by the Union of Concerned Scientists, [The Cost of Nuclear Power, Cheap Dreams Expensive Realities](#), warns us that these risks and costs keep private-sector financing scarce, so that the government **subsidies needed for these projects have to be significant and never-ending.**

It is difficult to sort fact from fiction these days as lies appear to be very profitable for powerful corporations or special interests who [mislead the public on science](#). That’s why on the subject of nuclear technology, Indivisible Colorado relies on reports by the Union of Concerned Scientists. The Union of Concerned Scientists is a national nonprofit organization founded more than 50 years ago by scientists and students at the Massachusetts Institute of Technology ([UCS.org](#)). They warn us of the many-faceted challenges of nuclear power generation.

- UCS blog post, [Nuclear vs. Solar: Corporate Profits and Public Risk](#)

Compiled in [Nuclear Power](#): *Low-Carbon Electricity, with Serious Economic and Safety Issues*:

- UCS Report on **New Nuclear Power Technologies**
Published 3/2021, ["Advanced" Isn't Always Better](#): Assessing the Safety, Security, and Environmental Impacts of Non-Light-Water Nuclear Reactors
- UCS report on **nuclear power and global warming**:
Published 10/2018, [The Nuclear Power Dilemma](#): Declining Profits, Plant Closures, and the Threat of Rising Carbon Emissions
- UCS report on **safety of nuclear power plants**:
Published 2/2016, [Preventing an American Fukushima](#): Limited Progress Five Years after Japan’s Nuclear Power Plant Disaster
- UCS report on the **security of nuclear power plants**:
Published 2/2016, [Nuclear Plant Security](#): Terrorists pose a real and significant threat to nuclear power plants

UCS Podcast on **New Nuclear Power Technologies:**

- UCS podcast, Got Science? Published April 13, 2021: [What Bill Gates Has Wrong About “Advanced” Nuclear Reactors.](#) *In this podcast physicist [Dr. Edwin Lyman](#) discusses the safety, security, and environmental impact of proposed “advanced” nuclear reactors.*
- UCS podcast, Got Science? Published May 1, 2018: [Nuclear Power Reactors: Is Smaller Better?](#) *How much do you know about nuclear power? Dr. Edwin Lyman, internationally recognized expert on nuclear proliferation, walks us through nuclear power, its associated risks, and small modular reactors.*

HB25-1040 is a gateway to a future that would not be cheap, would not be clean nor safe, is not desired by front line communities such as Pueblo, and does not effectively combat climate change. We ARE running out of time, and this bill toys with a treacherous, unnecessary technology that would deliver questionable benefits, unquestionably late in the climate and energy crisis.

We urge you to reject it.

Elizabetha Stacishin, Climate Liaison
Indivisible Colorado



2/11/25

To the members of the House Energy and Environment Committee:

I am writing as a constituent in Denver to ask for your “no” vote on HB25-1040.

Defining nuclear energy as clean would hinder Colorado’s efforts to pursue renewable energy options.

Building nuclear power plants is too costly considering materials and maintenance, and allowing tax incentives to be siphoned away from truly renewable energy projects and innovation undermines clean energy objectives. Overall costs would result in higher utility bills.

Calling nuclear energy clean is misleading and suggests a state of security that just isn’t realistic. Storage of radioactive waste and possible system failure from human error or intentional actions could affect future wellbeing.

The environmental impact seems to negate any potential benefits. Uranium extraction, processing, and transport contributes to greenhouse accumulation as does the building of the plants themselves.

Studying and improving nuclear energy production is a worthwhile discussion, but calling it clean is wrong. I want tax dollars to go toward truly renewable energy production and research.

Please vote no on designating nuclear energy as a clean energy.

Best regards,

Lucy Pfeffer

State of Advanced Nuclear

Colorado Hearing: Adding Nuclear Energy as a Clean Energy Resource

February 13, 2025

Marc Nichol
Executive Director, New Nuclear



Types of Advanced Reactors

Range of sizes and features to meet diverse market needs

Traditional
Coolant

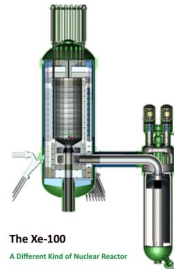


Westinghouse AP1000®
(shown)
ABWR



GEH BWRX-300 (shown)
NuScale
Holtec SMR-300
Westinghouse AP300

High Temp
Gas Reactors

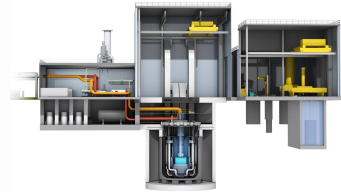


The Xe-100
A Different Kind of Nuclear Reactor

X-energy
(shown)

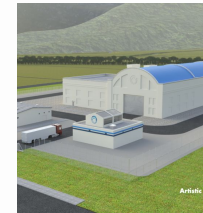
Other Coolants

Liquid Metal
Reactors



TerraPower Sodium™
(shown)

Molten Salt
Reactors



Kairos
Hermes
(shown)

Both



Oklo (shown)
Last Energy
Radiant
Westinghouse eVinci

Large ~1000 MWe

Small Modular Reactors < 300 MWe

Micro < 50 MWe



Learn more about innovative technologies with the Nuclear Innovation Alliance.

System Benefits of Advanced Reactors

Long term price stability

- Low fuel and operating costs

Reliable dispatchable generation

- 24/7, 365 days per year, years between refueling (Capacity factors >92%)

Efficient use of transmission

- Land utilization <0.1 acre/TWh (Wind =1,125 acre/TWh; Solar 144 acre/TWh)

Environmentally friendly

- Zero-carbon emissions, one of lowest total carbon footprints
- Many SMRs are being designed with ability for dry air cooling

Integration with renewables and storage

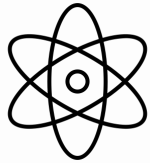
- Paired with heat storage and able to quickly change power

Black-start and operate independent from the grid

- Resilience for mission critical activities
- Protect against natural phenomena, cyber threats and EMP

Lowest System Cost Achieved by Enabling Large Scale New Nuclear Deployment

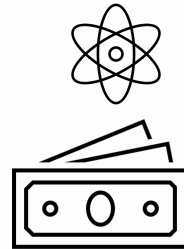
Lowest Cost System



Nuclear is 43% of generation (>300 GW of new nuclear)

Other sources are 50%

Energy System with Nuclear Constrained



Other sources are 77% of generation

Nuclear is 13% (>60 GW of new nuclear)

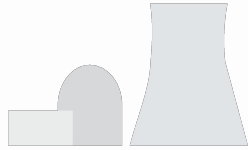
Increased cost to customers of \$449 Billion

Both scenarios are successful in reducing electricity grid GHG emissions by over 95% by 2050 and reducing the economy-wide GHG emissions by over 60%

Recent Survey of NEI's U.S. Utilities

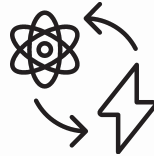
Nuclear power's potential role in meeting their company's decarbonization goals:

SLR



>90% of fleet expects to operate to at least **80 years**

GW



100 GW of new nuclear opportunity by **2050s**

SMRs



Translates to roughly **300 SMR-scale plants**

NEI utility member companies produce nearly half of all US electricity.

- More than half have more interest than in 2022 (prior survey year)
- Interest in 23 Early Site Permits, 18-19 Construction Permits, and 8 Combined Operating Licenses (by 2034)

Early Mover Success

Industry De-Risking

- Construction Best Practices
- Risk Registers
- Fast Follower Approaches
- Fleet Deployment Models

Federal Policies

- Tax Incentives
- Loan Guarantees
- Demonstration Cost Shares
- Early Mover Support

State Policies

- Energy Policy
- Reliability
- Economic Policy
- Sustainability
- Permitting
- Infrastructure

Federal Funding Opportunities for New Nuclear



Tax Credits

- PTC: At least \$30/MWh for 10 years
- ITC: 30% of investment
- Bonuses for energy communities and domestic supply

Loan Guarantees

- >\$250B in authority
- \$63B in Nuclear Applications (6/2024)

Fuel and Supply Chain

- HALEU Fuel - \$700M
- \$2.7 Billion for fuel (conditional on Russian import ban)

Demonstrations (Awarded)

- DOE funding 12 different designs, >\$5B over 7 years
- ARDP Demos, Risk Reduction, Early development

Deployments (New)

- \$800 Million for utility use of light-water SMRs

Other Support

- GAIN Vouchers
- NRIC Partnerships

September 2022

Current Federal Policy Tools to Support New Nuclear

The following is a list of current policy tools that could directly support the deployment of new nuclear, could potentially indirectly support the deployment or planning for new nuclear, and that currently support the deployment of new nuclear.

Programs that Could Directly Support Deployment of New Nuclear

Clean Electricity Production Credit – 45Y

The Inflation Reduction Act created a new technology-neutral tax credit for all clean electricity technologies, including advanced nuclear and power uprates that are placed into service in 2023 or after. The bill does not change the existing Advanced Nuclear Production Tax Credit but precludes credits from being claimed under both programs. The value of the credit will be at least \$30 per megawatt-hour, depending on inflation, for the first ten years of plant operation. The credit phases out when carbon emissions from electricity production are 75 percent below the 2022 level. The following is a link to the statutory language.

<https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45Y&num=26&intr=true&edition=prelim&granuleid=USC-prelim-title26-section45Y>

Clean Electricity Investment Credit – 48E

As an alternative to the clean electricity PTC, the Inflation Reduction Act provided the option of claiming a clean electricity investment credit for zero-emissions facilities that is placed into service in 2025 or thereafter. This provision a credit of 30 percent of the investment in a new zero-carbon electricity facility, including nuclear plants. Like the other credits, this investment tax credit can be monetized. The ITC phases out under the same provisions as the clean electricity PTC.

<https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section48E&num=26&intr=true&edition=prelim&granuleid=USC-prelim-title26-section48E>

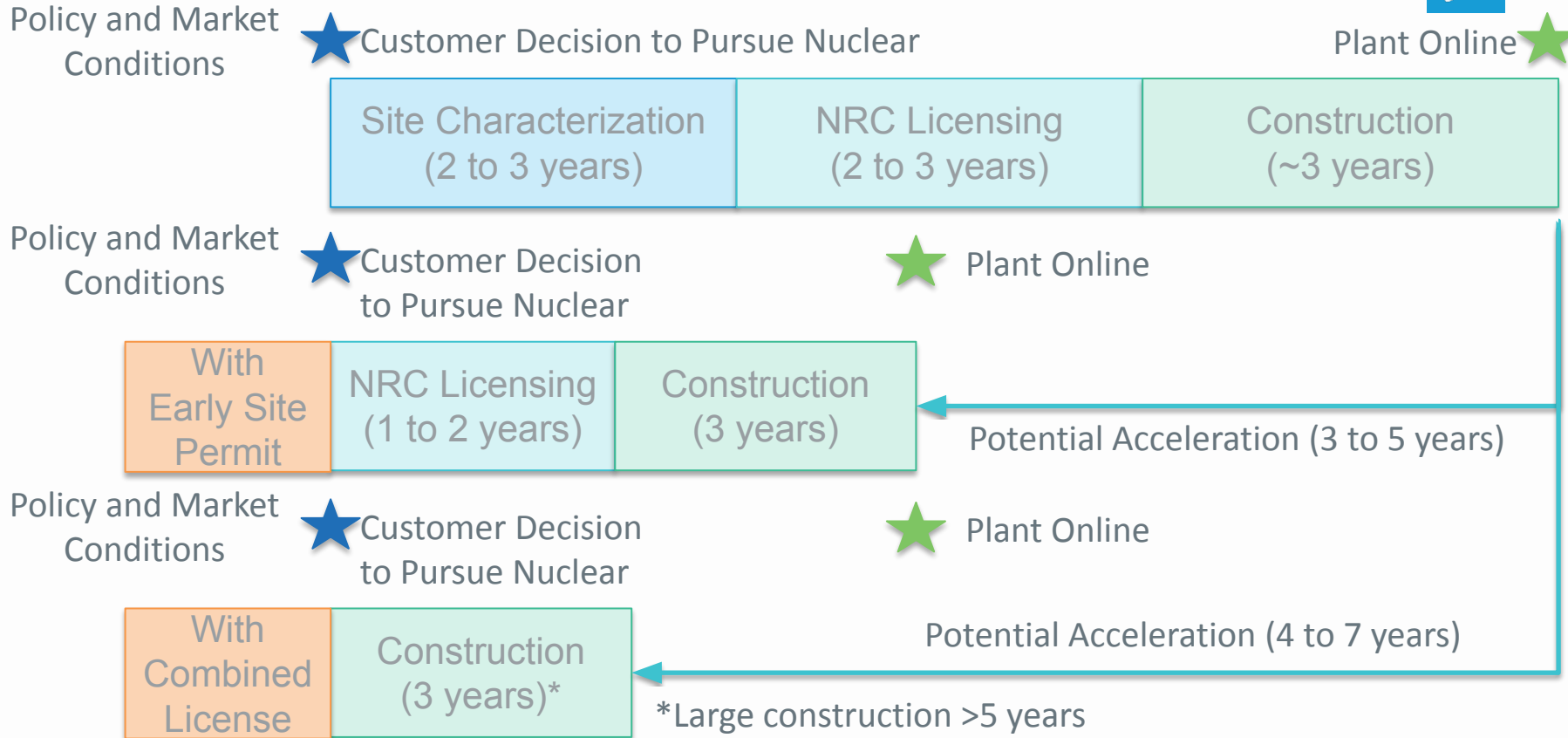
Both the clean electricity PTC and ITC include a 10-percent point bonus for facilities sited in certain energy communities such as those that have hosted coal plants. The following is a link to the statutory language.

Credit for Production from Advanced Nuclear Power Facilities – 45I

The nuclear production tax credit 26 USC 45I provides a credit of 1.8 cents per kilowatt-hour up to a maximum of 125 million per tax year for 8 years. Only the first 6000 MW of new capacity installed after 2005 for a design approved after 1993 are eligible for the tax credit. The credit does not include a direct pay provision, so the owner will need to have offsetting taxable income to claim the credit or transfer the credit to an eligible project partner. The following is a link to the statutory language.

<https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45I&num=26&intr=true&edition=prelim&granuleid=USC-prelim-title26-section45I>

Accelerating Deployments with Early Licensing



States Taking Action for Nuclear



Exploring Nuclear Technology with Studies, Working Groups, Commissions and Task Forces

Connecticut, Indiana, Kentucky, Louisiana, Maryland, Michigan, Ohio, Tennessee, New Hampshire, Nebraska, Montana, Pennsylvania, Florida and Texas



Recognizing Nuclear as a Clean Energy Resource

Idaho, Michigan, Minnesota, North Carolina, Ohio, Tennessee, Utah, Virginia and Washington



Removing Barriers and Signaling Support

Repealing Nuclear Moratoriums: Wisconsin, Kentucky, Montana, West Virginia, Connecticut, Illinois repealed Signaling Regulatory Support: Indiana, Mississippi, North Carolina, South Dakota



Incentivizing Nuclear Technology and Supply Chain

Kentucky, Michigan, Tennessee, Virginia, Washington, and Wyoming

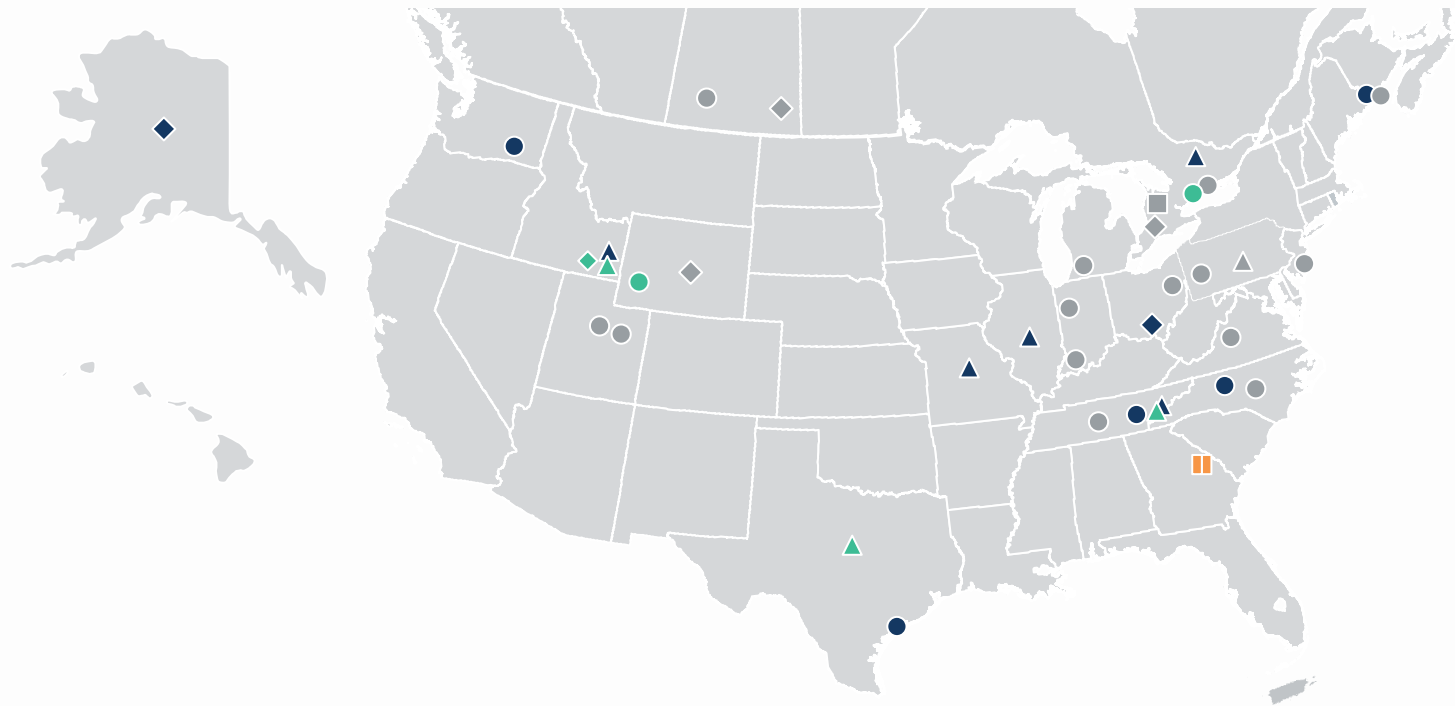
Advanced Nuclear Deployment Plans

Projects that may be in operation by early 2030s



©2025 Nuclear Energy Institute

Updated 01/17/2025



Legend

- Considered project
- Planned project
- Under construction
- Operating
- Large (1,000 MWe)
- Small (<300 MWe)
- ◇ Micro-reactor (<50 MWe)
- △ University / Research / Test

QUESTIONS?



I am asking for a NO vote on HB25-1040 for two reasons.

1. Nuclear energy is not clean or renewable. Besides being expensive to build, ugly by design, and monstrous in size using high volumes of concrete, nuclear tanks are a massive risk to us and the environment. Regardless of the fact that our state needs to develop other reliable clean energy sources, nuclear is the worst of all simply because it still presents a hazard to the health and well-being of Coloradans. One example comes to mind. Jeri Fry, who co-founded CCAT, lives in Cañon City, a community still dealing with the fallout of uranium processing from decades ago, which resulted in the [release of radioactive material](#) into soil and groundwater. Her father, who worked at the Cotter uranium mill, died of cancer after winning a lawsuit alleging his lymphoma was linked to radiation exposure.

2. Storing and transporting radioactive waste is a hazard and the impending disasters that result certainly could not be described as clean. There is enough evidence to prove this statement true if one considers the World's Six Natural Disasters since 1957. ([history.com https://www.history.com/news/historys-worst-nuclear-disasters](https://www.history.com/news/historys-worst-nuclear-disasters)). Living in a state that has an average of 300 days of sunshine, certainly our legislators must know that "enough solar energy reaches Earth every hour to fill all the world's energy needs for a whole year." (climaterealityproject.org) Knowing this fact and before they vote, why believe that the need to add a risky nuclear operation to our state is a viable solution to our clean energy needs? Have you heard about the benefits of wind and biofuel energy? Have you ever considered a facility such as the Crescent Dunes Project south of Las Vegas? It provides all the energy for Las Vegas even at night. <https://www.fastcompany.com/3057288/this-huge-new-solar-farm-near-las-vegas-provides-power-even-at-night>

Even if other countries build nuclear tanks, transport and store the radioactive waste, there is not enough reliable evidence for us to follow that path. We can maintain, expand and add more jobs to our economy by considering other sources of clean energy; solar, wind, biofuel and hydro. Nuclear is not the clean answer to our needs!

To Members of the Colorado House Energy and Environment Committee
Regarding HB25-1040 Adding Nuclear Energy as a Clean Energy Resource
February 13, 2025

Committee members,

Thank you for the opportunity to present a brief written testimony today.

My name is Dennis Obduskey. I'm a Pueblo native and represent myself as a current elected member to the State Democratic Party Platform Committee for 2025-26 from House District 46, and as past chair of the Pueblo County Democratic Party Resolutions Process during 2024 Assemblies.

I also grew up here and live about five miles from the current Comanche Plant slated for closure, was newspaper editor in Brighton and Ft Lupton during the Ft. St. Vrain nuclear debacle in the 1980s, and at one time lived in Northwest Denver near Sloan's Lake.

Regarding Nuclear Power of ANY type:

Pueblo County Democrats at our 2024 Assembly were very clear in adopting this resolution:

"We the Democratic Party oppose the building of a nuclear power plant or storage of nuclear power plant waste in Colorado. We support local ordinances, state legislation, and federal programs that prohibit development and operation of new nuclear power reactors in Colorado. We further object to the mischaracterization of nuclear power and its radioactive waste as "green", "clean" or "carbon-free" in public policy.

Last year a Senate Committee voted down the "Clean" wording as well, and no fairy dust was created to sprinkle over a Superfund Uranium cleanup site still unresolved in nearby Fremont County. It also takes a lot of twists to pretend that any nuclear waste will disappear on its own; there is no proven solution to make it go away nor an approved disposal location, leading to toxic waste sitting, possibly generations, in cooling ponds adjacent to the site and sitting above our precious water lifeblood.

"Clean" is playing a word game for money to try and procure a handout, just like the hundreds of millions that the Federal Government spent to front-run NuScale to build its inaugural plant under construction now -- in the country of ROMANIA. That company has hoped to build one in Pueblo.

Bill Gate's TerraPower Plant, planned for Wyoming, has NOT been approved by the Nuclear Regulatory Commission and is still awaiting several approvals, not the least of which is environmental. Check NRC facts. Photos of hard hats digging make good theater but time and again those processes fail to materialize, usually over inflated cost projections. That's what happened in Idaho Falls in 2023 when a proposed plant by NuScale was shuttered, though they had said it would be operational by 2029.

Please OPPOSE any effort to try and normalize the idea Nuclear Power is Clean. It clearly isn't.

And note: Pueblo has a long and proud industrial past and hopes to maintain strong partnership with unions as it has for more than a century. But there are still scars from unfinished Superfund work for smelter operations a generation back. The steel mill wasn't exactly a tribute to non-toxic production and people driving through the city rolled up their windows and created the nickname "pew-town." We need

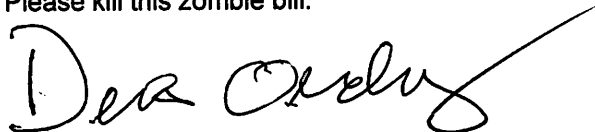
all citizens working together to create good union jobs that lift people, the city, and the state, rather than continue the next phase of adding to the negative view that seeks out projects like destruction of Toxic Mustard Gas canisters. Don't buy into "clean" to get a toehold and help instead work create a hand up in renewable energy.

Beneath it all you find that Pueblo's businesses, wages, health and people **stay marginalized**. Projects are forced on them as "the best you can do." Pueblo was blessed with the most toxic air in the state from the coal-powered Comanche along with well documented severe health issues that will continue for decades. It's time to stop the cycle.

And through it all, we've never even touched on Insurance costs – health and property and liability. For the Public and for the businesses. Don't assume living next to any size plant will increase property values in the area and make the area more attractive – whether in Pueblo or Craig. And don't bet that Insurance costs will dive either.

If the energy is so clean, and safe, I recommend that the Democratic sponsor of the bill propose placing a reactor in or adjacent to, say House District 5 at Coors Field, or plan one for a possible transition of "Empower Field" naming rights if the Broncos move to a new site. I lived a mile from there, too.

Please kill this zombie bill.

A handwritten signature in black ink that reads "Dennis Obduskey". The signature is written in a cursive style with a long, sweeping tail on the "y".

Sincerely,
Dennis Obduskey
604 Alpine Avenue
Pueblo, CO 81005
(720) 432-3367 (corrected)

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Regarding HB25-1040 Adding Nuclear Energy as a Clean Energy Resource
February 13, 2025

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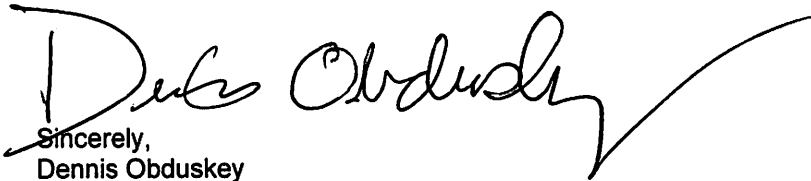
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And through it all, we've never even touched on Insurance costs – health and property and liability. For the Public and for the businesses. Don't assume living next to any size plant will increase property values in the area and make the area more attractive – whether in Pueblo or Craig. And don't bet that Insurance costs will dive either.

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Please kill this zombie bill.

A handwritten signature in black ink that reads "Dennis Obduskey". The signature is fluid and cursive, with a long, sweeping horizontal line extending to the right from the end of the name.

Sincerely,
Dennis Obduskey
604 Alpine Avenue
Pueblo, CO 81005
(303) 432-3357

Date: February 11, 2025

To: Colorado House Energy and Environment Committee

From: Kathy Fackler
365 Blue Spruce Trail
Durango, CO 81301

Re: **Support for HB25-1040: Adding Nuclear Energy as a Clean Energy Resource**

I am writing to ask for your support on HB25-1040, scheduled for hearing on February 13. My comments here represent my own personal views, informed by eight years' experience as a citizen lobbyist for a national climate change organization and six years as a member of Club 20.

Meeting projected load growth while maintaining a clean and stable grid – HB25-1040 would include nuclear energy as another zero-carbon resource for utilities and energy planners to consider, subject to community support, economics, and safety review processes. Nuclear power has provided safe, reliable, emissions-free electricity to millions of Americans for over half a century. It can be used strategically to stabilize a grid dominated by intermittent renewables, reduce the amount of land needed to supply our electricity, and efficiently re-use transmission infrastructure where fossil plants are being retired.

Aligning Colorado with federal policy – There is strong support in the Trump administration and bipartisan support in Congress for nuclear power. Nuclear can help us achieve energy security goals and geopolitical goals while eliminating air pollution, water pollution, and climate pollution. The United States can, and should, lead the world in developing and deploying safe, clean nuclear power technology. Colorado should be part of that leadership.

Supporting a Just Transition for our coal communities – I support Colorado's efforts to reduce greenhouse gas emissions in line with global consensus, but I believe that climate policy should be focused on reducing emissions, not picking technologies. If communities like Craig want to consider a coal-to-nuclear replacement, they should be able to. HB25-1040 doesn't cost the government anything, doesn't commit to deploying nuclear anywhere. All it does is codify the truth: nuclear energy is an electricity source that does not generate CO2 emissions. Colorado should be supporting zero-carbon energy development as an option for the communities that are bearing the brunt of our energy transition.

Nuclear power, like all forms of energy, has risks and benefits. I raised my children 50 miles away from the San Onofre nuclear plant in California. The only time I faced evacuation during that time was from a massive wildfire. Climate change keeps me up at night. Nuclear power does not. We need a diverse energy portfolio if we're going to achieve the ambitious goals we've set out and leave a healthy world for our children and grandchildren.

Thank you for serving Colorado, and for considering my comments. **I urge a YES vote on HB25-1040.**

Sincerely,



Kathy Fackler
kathyfackler@gmail.com
619-316-2260

Testimony Before the Energy and Environment Committee

Introduction

Name: Peter Ewing

Title: Retired

Date: 2/13/2025

Opening Statement

Good afternoon, Chairman Valdez and members of the Committee. I am here today to provide a testimony in support of HB 25-1040.

Background

My name is Peter Ewing, and I am retired. I am a member of the Colorado Nuclear Alliance (CNA) and the American Nuclear Society (ANS). CNA asked me to gather information on uranium mining for this Hearing, and much of it was obtained from ANS.

Statement of Support

I support the legislation to classify nuclear energy as clean energy in Colorado. Nuclear energy is already used in most US States and has no carbon emissions, except the carbon used to construct the plants, which could also change.

Key Points

The US currently gets most of its uranium from other countries. Canada exports the most to us, followed by Kazakhstan, Russia, Uzbekistan, and Australia. Although not tapped yet, the ocean also contains 8 trillion pounds of uranium.

Within the United States, the two main producers of uranium are New Mexico and Wyoming. New Mexico has historically produced the most, from the Grants Uranium Region, but Wyoming is the largest current producer, from the Powder River Basin.

Colorado also has an extensive history mining uranium, including the Burro Mines in the Uravan Mineral Belt in Southwest Colorado, and the Maybell deposits in Northwest Colorado. Exploratory efforts are currently underway in the Uravan Belt and at the South T Bar Ranch near Canon City.

Uranium mining across the US has an essentially spotless safety record, except for a leak at a tailings pond in New Mexico in 1979. Some livestock perished but no humans were injured, compared to multiple fatalities at other types of mine accidents throughout US history.

Conclusion

I want to mention the impact of uranium mining on Colorado's landscape, and its crucial tourism industry. US Congressman Jared Hoffman of California has proposed collecting royalties from mining companies to pay for cleanup, as is currently done with oil and gas, and there are already funds available for clean energy projects on former sites.

Finally, uranium mines are open to tourists in Utah, Arizona and here in Colorado, at the Long Park Mine in Montrose County.

Contact Information

If the committee members have any further questions, they can reach me at:

Email: peter.ewing@outlook.com

Phone: 719-778-3649

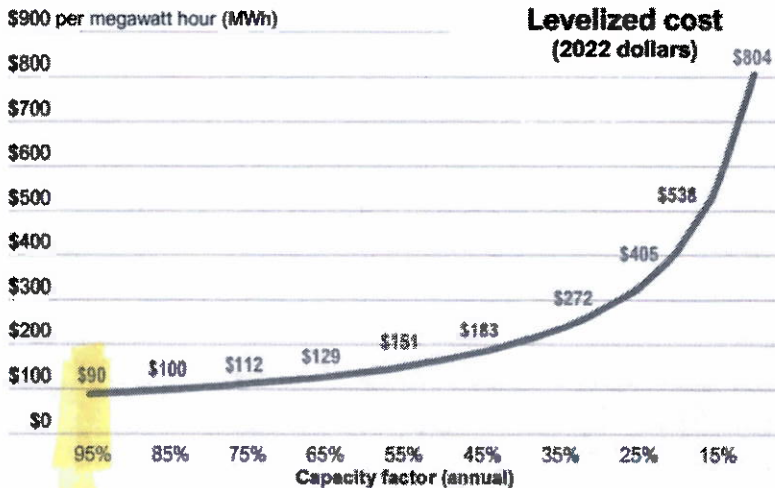
Company Ownership RFP Bids

Generation Technology	# of Bids*	Bid MW**	Median Bid Price (\$/kW Installed)
Gas	25	10,397	\$965
Biomass	1	19	small sample
Solar	66	19,493	\$1,635
Solar/Storage	61	28,712	\$1,628
Storage	11	2,065	\$1,627
Wind	96	36,206	\$1,822
Wind/Solar	2	601	small sample

Renewable and Dispatchable RFP Bids

Generation Technology	# of Bids*	Bid MW**	Median Bid Price (\$/MWh levelized)	Median Bid Price (\$/kW-mo levelized)
Gas	13	3,347	-	\$10.65
Other***	3	163	small sample	small sample
Solar	210	55,212	\$32.73	-
Solar/Storage	223	110,119	\$39.89	\$ 9.69
Storage	80	14,833	-	\$12.14
Wind	210	84,533	\$21.99	-
Wind/Solar	10	15,801	\$28.67	-
Wind/Solar/Storage	40	19,703	\$38.20	\$6.94
Wind/Storage	6	3,156	\$19.62	\$12.61

- * # of Bids reflects number of proposals, the unique projects are less than this value
- ** Bid MW column provides total MW bid across all proposals, the MWs of unique projects are less than this value
- *** Includes biomass and compressed air storage.

Figure 6: SMR Power Costs Rise as Capacity Factor Falls

Source: IEEFA analysis using data in the November 2020 Development Cost Reimbursement Agreement between UAMPS and NuScale.

The Boeing Problem

One key issue that has received too little attention in the discussion of SMR commercialization is the potential for systemic flaws in reactors with the same standardized design.

This has been referred to as the “Boeing Problem” by Arjun Makhijani of the Institute for Energy and Environmental Research because of problems that affected the company’s fleet of 787 Dreamliners.³⁵ But it could also apply to Boeing’s more recent experience with a poorly designed feature in its 737 MAX aircraft that led to two critical crashes, and several years of the 737 MAX air fleet needing to be grounded until the problem was identified and fully corrected. Similarly, an unexpected and unidentified design flaw discovered in a key component of a highly standardized SMR could lead to extended and expensive outages, repairs and design changes. But taking an airplane back to Boeing for those repairs and design changes is relatively easy. Taking an SMR back to the factory would be extremely difficult, if not impossible.

The potential risk that a problem identified in one SMR will affect the costs, and maybe the operation, of other SMRs with the exact or similar standardized design, is not merely hypothetical. The same problems have cropped up at many existing reactors around the world due to materials choices and design decisions made by the industry before these plants were even being built.

For example, according to the World Nuclear Association, operators have been forced to replace steam generators at more than 110 pressurized water reactors (PWRs)—more than half of which

³⁵ [Light Water Designs of Small Modular Reactors: Facts and Analysis](#), Revised September 2013.



Nuclear waste from small modular reactors

Lindsay M. Krall^{1,2}, Allison M. Macfarlane¹, and Rodney C. Ewing¹

Edited by Eric J. Schelter, University of Pennsylvania, Philadelphia, PA, received June 26, 2021; accepted March 17, 2022 by Editorial Board Member Peter J. Rossky

Small modular reactors (SMRs; i.e., nuclear reactors that produce <300 MW_{elec} each) have garnered attention because of claims of inherent safety features and reduced cost. However, remarkably few studies have analyzed the management and disposal of their nuclear waste streams. Here, we compare three distinct SMR designs to an 1,100-MW_{elec} pressurized water reactor in terms of the energy-equivalent volume, (radio-)chemistry, decay heat, and fissile isotope composition of (notional) high-, intermediate-, and low-level waste streams. Results reveal 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. The excess waste volume is attributed to the use of neutron reflectors and/or of chemically reactive fuels and coolants in SMR designs. That said, volume is not the most important evaluation metric; rather, geologic repository performance is driven by the decay heat power and the (radio-)chemistry of spent nuclear fuel, for which SMRs provide no benefit. SMRs will not reduce the generation of geochemically mobile ¹²⁹I, ⁹⁹Tc, and ⁷⁹Se fission products, which are important dose contributors for most repository designs. In addition, SMR spent fuel will contain relatively high concentrations of fissile nuclides, which will demand novel approaches to evaluating criticality during storage and disposal. Since waste stream properties are influenced by neutron leakage, a basic physical process that is enhanced in small reactor cores, SMRs will exacerbate the challenges of nuclear waste management and disposal.

nuclear | small modular reactors | energy | waste | nuclear waste

In recent years, the number of vendors promoting small modular reactor (SMR) designs, each having an electric power capacity <300 MW_{elec}, has multiplied dramatically (1, 2). Most recently constructed reactors have electric power capacities >1,000 MW_{elec} and utilize water as a coolant. Approximately 30 of the 70 SMR designs listed in the International Atomic Energy Agency (IAEA) Advanced Reactors Information System are considered “advanced” reactors, which call for seldom-used, nonwater coolants (e.g., helium, liquid metal, or molten salt) (3). Developers promise that these technologies will reduce the financial, safety, security, and waste burdens associated with larger nuclear power plants that operate at the gigawatt scale (3). Here, we make a detailed assessment of the impact of SMRs on the management and disposal of nuclear waste relative to that generated by larger commercial reactors of traditional design.

Nuclear technology developers and advocates often employ simple metrics, such as mass or total radiotoxicity, to suggest that advanced reactors will generate “less” spent nuclear fuel (SNF) or high-level waste (HLW) than a gigawatt-scale pressurized water reactor (PWR), the prevalent type of commercial reactor today. For instance, Wigeland et al. (4) suggest that advanced reactors will reduce the mass and long-lived radioactivity of HLW by 94 and ~80%, respectively. These bulk metrics, however, offer little insight into the resources that will be required to store, package, and dispose of HLW (5). Rather, the safety and the cost of managing a nuclear waste stream depend on its fissile, radiological, physical, and chemical properties (6). Reactor type, size, and fuel cycle each influence the properties of a nuclear waste stream, which in addition to HLW, can be in the form of low- and intermediate-level waste (LILW) (6–8). Although the costs and time line for SMR deployment are discussed in many reports, the impact that these fuel cycles will have on nuclear waste management and disposal is generally neglected (9–11).

Here, we estimate the amount and characterize the nature of SNF and LILW for three distinct SMR designs. From the specifications given in the NuScale integral pressurized water reactor (iPWR) certification application, we analyze basic principles of reactor physics relevant to estimating the volumes and composition of iPWR waste and then, apply a similar methodology to a back-end analysis of sodium- and molten salt-cooled SMRs. Through this bottom-up framework, we find that, compared with existing PWRs, SMRs will increase the volume and complexity of LILW and SNF. This increase of volume and chemical

Significance

Small modular reactors (SMRs), proposed as the future of nuclear energy, have purported cost and safety advantages over existing gigawatt-scale light water reactors (LWRs). However, few studies have assessed the implications of SMRs for the back end of the nuclear fuel cycle. The low-, intermediate-, and high-level waste stream characterization presented here reveals that SMRs will produce more voluminous and chemically/physically reactive waste than LWRs, which will impact options for the management and disposal of this waste. Although the analysis focuses on only three of dozens of proposed SMR designs, the intrinsically higher neutron leakage associated with SMRs suggests that most designs are inferior to LWRs with respect to the generation, management, and final disposal of key radionuclides in nuclear waste.

Author contributions: L.M.K. and A.M.M. designed research; L.M.K. and R.C.E. performed research; L.M.K. analyzed data; and L.M.K., A.M.M., and R.C.E. wrote the paper.

The authors declare no competing interest.

This article is a PNAS Direct Submission. E.J.S. is a guest editor invited by the Editorial Board.

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¹Present address: Research and Safety Analysis Division, The Swedish Nuclear Fuel and Waste Management Company, 169 56 Solna, Sweden.

²To whom correspondence may be addressed. Email: Lindsay.M.Krall@gmail.com.

This article contains supporting information online at <http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.2111833119/-/DCSupplemental>.

Published May 31, 2022.

Testimony in Opposition to HB25-1040
February 13, 2025
Leslie Glustrom, Clean Energy Action

Nuclear is not clean—it is likely to produce more highly toxic nuclear and the nuclear cycle will have serious health consequences. Excerpts from a recent study below.

Results reveal 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.

Since waste stream properties are influenced by neutron leakage, a basic physical process that is enhanced in small reactor cores, SMRs will exacerbate the challenges of nuclear waste management and disposal.¹

SMRs are likely to be several times more expensive than wind, solar and storage. Paying for them will likely make utility customers pay much more than they need to on a \$/MWh basis.

- Wind, solar and storage costs well below 4 cents/kwh. ²
- SMR costs very likely 9 cents/kwh and above. ³

Inflexible “baseload” resources will not work well with flexible wind and solar generation and will increase “curtailment” of wind and solar that are already paid for and producing electricity without requiring fuel or producing waste.

SMRs are unlikely to be available for many more years and are likely to be unpopular and expensive.

For these reasons, SMRs are very likely just a version of
“SNAKE OIL” (i.e. FALSE HOPE)
AND FALSE HOPE IS CRUEL

¹ Nuclear waste from small modular reactors

² For costs of wind, solar and storage projects in Colorado, see 2022 30 Day Report on bids to Xcel for their Colorado Electric Resource Plan, Colorado PUC Proceeding 21A-0141E.

³ For costs of small modular reactors see SMRs Still Too Expensive Too Slow Too Risky_May 2024.pdf

Dear House Energy and Environment Committee members,

We, the undersigned organizations, community leaders, and elected officials in Colorado, call on you to **oppose HB25-1040: Adding Nuclear Energy as a Clean Energy Resource** when it comes up for a vote in the House Energy and Environment Committee. The future of energy production is one of the most important and challenging issues we face as a state, a nation, and a global community. The need to rapidly decarbonize our economy and transition to a clean energy source is a deeply urgent matter, and nuclear energy is a false solution that will divert urgently needed funds from renewable energy solutions.

In recent years, there has been a rapid resurgence of pro-nuclear industry lobbying which touts nuclear energy as a “clean” and “carbon free” energy source that will transition our economy out of the era of fossil fuels. There are already proposals in Pueblo, Craig, and Hayden Colorado to transition coal plant infrastructure into nuclear energy infrastructure. While we agree with the need to transition away from fossil fuel-based energy as quickly as possible, we also believe that a transition to nuclear power would be a grave mistake with consequences that will echo for hundreds of future generations.

The idea that nuclear power is a clean energy source could not be further from the truth. Nuclear power is the only energy resource that generates dangerous waste that will remain radioactive for thousands of years. There is no known method or technology to process this waste effectively, and thus, it must be stored as long as it remains radioactive. There is a strong possibility the waste would need to be stored onsite, as transporting radioactive waste carries severe risks. Our state’s ongoing challenges with the nuclear waste stored at the former Fort St. Vrain plant should be enough to dissuade Colorado Legislators from pursuing this radioactive energy option. Nuclear meltdowns such as Chernobyl or Fukushima, while exceedingly rare, should also dissuade Legislators from pursuing nuclear power. The unfortunate reality is that climate change will lead to an increase in natural disasters in our state, from floods to fires, which have the potential to create an exponentially more terrifying catastrophe if radioactive material is present.

Nuclear power is not “carbon-free.” In reality, mining and enriching uranium, producing and transporting cement, constructing nuclear reactors, and processing and transporting waste all contribute to the upstream carbon costs of nuclear energy. The carbon footprint of nuclear energy development is significantly larger than the carbon costs associated with wind and solar energy production. By including nuclear energy under the legal definition of “clean energy,” and thus grouping it alongside wind, solar, and other renewable energy sources, the Colorado Legislature risks diverting much-needed energy transition funds away from proven renewable energy technologies, and towards a risky, expensive, and unsustainable technology.

Nuclear power also relies on the exploitation of resources that our communities cannot afford, including water and uranium. Nuclear reactors are by far the most water-intensive way to produce energy. A single 300 megawatt small modular reactor operating at 90% capacity would withdraw between 160 million and 390 million gallons of water daily. Colorado is experiencing a water crisis, and our state cannot afford this level of fresh water usage.

Nuclear power plants also require uranium which must be mined and enriched. Marginalized communities bear a disproportionate burden of the environmental and health impacts of uranium mining and enriching. During the Cold War, over 500 uranium mines were established on Navajo land, and, due to lasting contamination in the land, air, and water from these mines, the communities that surround them still experience high rates of lung and bone cancer, kidney failure, birth defects, among other health impacts from uranium exposure.

The bottom line is that nuclear energy corporations and major utility companies would reap all the profits, while Colorado's frontline communities would absorb all the risks, health impacts, and environmental contamination. Given the rapidly diminishing costs in renewable technologies which have shown great promise in tackling the climate crisis, a transition to nuclear power would be a ludicrous waste of time, money, and energy for our state. **Please vote NO on HB25-1040.**

Sincerely,

350 Colorado
Clean Energy Action
Colorado Coalition for a Livable Climate (Representing 53 Colorado organizations)
Colorado Renewable Energy Society
Conservation Colorado
Equinox Consultancy LLC
GreenLatinos
Mi Familia Vota
Our Sacred Earth
Physicians for Social Responsibility Colorado
Pueblo's Energy Future
Renée Millard Chacon, Commerce City Council Member
Renewable Energy Owners Coalition of America
Rocky Mountain Peace and Justice Center
Roots to Resilience
Sierra Club Colorado
Womxn From The Mountain

House Energy & Environment

02/13/2025 01:30 PM

HB25-1040 Adding Nuclear Energy as a Clean Energy Resource

Typed Text of Testimony Submitted

Name, Position, Representing	Typed Text of Testimony
<p>Carol Dunn Against Colorado Citizens Against Toxic Waste (CCAT)</p>	<p>Dear House Energy and Environment Committee Member</p> <p>At the end of WWII, the United States government knew it would need fissionable material to meet the nation’s defense needs to thwart the nuclear threats by the Soviet Union. The uranium resources on the Colorado Western slope were developed, termed “The Rush to the Plateau”. The government issued guaranteed price contracts for the ore.</p> <p>In addition to the mining mostly on the Western Slope but also in my home county of Fremont, mills sprang up to process the ore into yellowcake. The mining and milling processes both used a model used by the coal mining industry without regard to the radioactive nature of the ore and the effect that exposure could have on the human body. As the years went by, however, the effects of this poorly thought-out model were shown to be damaging to human health as well as the environment.</p> <p>Whether used for weaponry or energy, uranium ore must be processed into a usable material. Here in Fremont County, the site of one of the two historical uranium mills in Colorado, we are still dealing with the byproducts of uranium processing at the Cotter Uranium Mill. In the early 1970s, the dumping of mill tailings on bare ground was found to have contaminated the wells and groundwater in the nearby Lincoln Park neighborhood.</p> <p>The site was added to the NPL in 1984; Cotter Corporation and the EPA have been going through the process of cleaning up the contaminated water and soils for 40 years.</p> <p>This is the front end of the nuclear cycle where the effects are anything but clean. The processing used to supply yellowcake for eventual fuel rods has many existential problems:</p> <ul style="list-style-type: none"><input type="checkbox"/> Creates waste that remains radioactive for thousands of years.

	<ul style="list-style-type: none"> <input type="checkbox"/> Can not properly process or transport radioactive waste, dangerously keeping most or all of it onsite at the risk of the health of the community and the surrounding property including the groundwater. <input type="checkbox"/> Use a LOT of fresh water, of which Colorado has little or none to spare, both for the milling that is necessary for energy production and for cooling spent fuel, contaminating much of it. <input type="checkbox"/> Linked to increased cancer rates. <input type="checkbox"/> Require uranium which must be mined and enriched, processes which disproportionately impact already vulnerable communities. <p>As a member of the Colorado legislature, we urge you to vote "NO" on HB-25-1040!</p> <p>Respectfully,</p> <p>Carol Dunn Co-Chair Colorado Citizens Against Toxic Waste (CCAT)</p>
<p>Lynne Sullivan Against themselves</p>	<p>Nuclear power is not a solution to climate change. It is extremely toxic with its long-lived nuclear waste, that we really don't know how to secure from leaking for thousands of years! (or terrorist confiscation), and there are many carbon costs with nuclear power plants, including: mining and enriching uranium, producing and transporting cement, constructing nuclear reactors, and processing and transporting waste. Nuclear's carbon footprint is significantly larger than the carbon costs associated with wind and solar energy production.</p> <p>By including nuclear energy under the legal definition of "clean energy," the Colorado Legislature risks diverting much-needed energy transition funds away from proven renewable energy technologies, and towards a risky, expensive, and unsustainable technology.</p>
<p>Megan Wilder Against themselves</p>	<p>Please reject HB25-1040. Nuclear power is NOT clean energy. There are so many documented health, safety, financial, and environmental dangers with nuclear power. It should not be a consideration for Colorado when we have more than enough solar and wind potential here. Put your efforts and funding into more solar and wind.</p>
<p>Mark Hinaman For Colorado Nuclear Alliance</p>	<p>I am a board member of the Colorado Nuclear Alliance, a pro-nuclear grassroots organization advocating for nuclear energy as a clean and reliable resource for Colorado.</p> <p>As a licensed professional engineer and energy industry expert, I strongly support this bill. It sends a critical signal to Colorado utilities, legislators, and residents that</p>

	<p>nuclear energy deserves public support. It also signals nationwide that Colorado is open to including nuclear in its power generation mix.</p> <p>As an entrepreneur, I am actively developing new power generation technologies, including advancements in nuclear energy. Having spent my entire career in oil and gas, I now want to dedicate the coming decades to building the cleanest and safest energy source on the planet—nuclear. I hope to do this in Colorado, creating jobs and economic opportunities for my community.</p> <p>If Colorado does not support nuclear energy, my focus will remain on oil and gas development instead of building new nuclear power plants. The real choice isn't between renewables, geothermal, or nuclear—it's between natural gas and nuclear. Nuclear is carbon-free, just as reliable as natural gas, and far less susceptible to price volatility.</p> <p>I urge you to vote yes on HB-1040. Thank you.</p> <p>Mark Hinaman</p>
<p>Leslie Weise Against themselves</p>	<p>Nuclear power is NOT clean energy. Nuclear power relies on the extraction and processing of uranium, one of the most dangerous radioactive materials on earth, and it creates toxic waste that remains radioactive for tens of thousands of years. Nuclear energy is the most water-intensive power source currently available, and it is by far the most dangerous in the case of an accident or natural disaster. For these and many more reasons, nuclear is not a climate solution we should be pursuing. Please oppose this bill! Thank you, Leslie Weise</p>
<p>Frank Hruby Against themselves</p>	<p>Nuclear Energy is not clean Energy.</p> <p>Nuclear energy will not be clean energy until we have a national solution for the permanent disposal of all highly radioactive waste byproducts of the process . We have been attempting to kick that ball down the street for the last 75 years. Waste generated in any new nuclear facility will have to be managed on site for generations at the expense and risk of children not yet born.</p> <p>It is green washing to call Nuclear Energy generation clean just because it does not emit carbon.</p> <p>I suffer daily and will suffer daily for the rest of my life from latent radiation damage to my jaw, teeth, tongue, throat and mouth due to intentional focused radiation to treat an oral cancer.</p>

	<p>This treatment was intentionally imposed to kill cancer cells but I suffer every day from the after effects of the radiation that was imposed on me in a controlled hospital setting.</p> <p>The deadly radiation risk presented by Waste nuclear fuel is thousands of times more potent than the radiation I was subjected to. It is immoral and untrue to call nuclear waste, the product of nuclear energy generation clean when our society has no accepted permanent disposal solution</p> <p>My name is Frank Hruby I am a resident near Loveland Colorado.</p>
<p>Jeany Rush Against themselves</p>	<p>TO: House Committee on Energy & Environment</p> <p>RE: HB-25-1040 CONCERNING THE INCLUSION OF NUCLEAR ENERGY AS A SOURCE OF CLEAN ENERGY</p> <p>SPONSORS: VALDEZ, WINTER, ROBERTS, LISTON 2-13-25</p> <p>FROM: JEANY RUSH, COLORADO CONCERNED CONSTITUENT</p> <p>VOTE: NO NO NO NO NO NO NO</p> <p>"The statutory definition of "clean energy" determines which energy projects are eligible for clean energy project financing at the county and city and county level. The statutory definition of "clean energy resource" determines which energy resources may be used by a qualifying retail utility to meet the 2050 clean energy target. The bill updates the 2 statutory definitions to include nuclear energy; except that for property valuations made for tax purposes, the bill exempts from the definition of "clean energy resource" nuclear energy generated by a public utility. "</p> <p>YOUR WORDS</p> <p>This bill is riddled with errors, mistakes, misinformation, and some irresponsible assumptions, not to mention vicarious liability, and well outright liability you throw down the "Road" and someone else will pay for all of the mistakes, financially, environmentally, and most likely with our lives!!! THIS IS A LIFE/DEATH BILL!</p> <p>It does not take a rocket scientist to see that one of your assumptions "providing more options for generating electricity in Colorado will lead to less expensive and more reliable path to eliminating greenhouse gas emissions" is totally false.</p> <ol style="list-style-type: none"> 1. We as a state, and as a nation are already the cleanest nation if you subscribe to all of the green house emissions LIES! CO2 is a tiny part of our atmosphere, and it is life itself, which it is. If we go much lower with CO2, we and all plant life dies. Why do you all never quote these stats? (A Climate Conversation, the documentary would go a long way to educate folks. We do not have an emissions problem, we have a mental problem in lying outright about what is greenhouse gas as defined. (see list below from: Inconvenient Facts By: Gregory Whitestone) 2. FALSE GREEN DEALS, CLIMATE HOAXES, AND LINING THE POCKETS OF COMPANIES THAT WILL PROFIT FROM OUR ALREADY OVER-BURDENED

	<p>POPULATION, OUR OVER-BURDENED POCKETS WHICH ARE EMPTY WILL LINE PRIVATE AND GOVERNMENT ENTITIES PROFITS AND WHO ARE LITERALLY PROFITING FROM THESE "GREEN LIES." EXAMPLES LIKE SUMMIT CARBON SOLUTIONS TYPE OF COMPANIES LITERALLY GETTING HELP WITH OUR GOVERNMENT TO BUILD UNDERGROUND CARBON PIPELINES, AND DOING IT BY EMINENT DOMAIN, ILLEGALLY, AGAINST THE REAL UNDERSTANDING AND CONSENT OF THE PEOPLE! THE DANGERS OF CO2 IN PIPELINES IS HUNDREDS OF TIMES MORE DANGEROUS THAN EVEN NATURAL GAS. IT HAS TO BE PUT DEEPER, AND GOD HELP US IF IT BLOWS! THE LAND OWNERS HAVE NOT BEEN TOLD THE TRUTH! DO YOU NOT KNOW EITHER, OR ARE YOU COMPLICIT?</p> <p>3. The travesty that is large-scale solar and wind is another scam on us all! The environmental damages, the short-term disposal of the solar, and wind turbines is another disaster. Add to their short term lifespan, and you have another scam. Add the big battery field/scam and the crime is complete. More environmental damage than people are being told. The mining of minerals, like lithium is devastating to not just the land, to the children in Africa and China being forced to do the excavating so you can drive your insane electric cars. The same cars that will need lots of recharging with electricity from other sources. It is a cycle of deceit, and insanity. IT IS TO CONTROL US, STOP US FROM DRIVING NORMAL CARS, AND PUT US IN THE "NOT SO SMART NIGHTMARES OF CITIES" PLANED BY THE PSEUDO URBAN GROWTH –SOCIALIST-COMMUNIST- SCENARIOS. Add the huge cost to individuals to also help private companies grow larger with govt. and our money to create more problems that no one talks about. And we have not even mentioned the non-reliability of these sources on our already burdened grids! Grids which have been laid vulnerable by allowing our enemies, like China, to make the components so they can turn us on and off, just like the truth about all Election Machines, also controlled by our enemies! COLD HARD TRUTHS most of you will not face. But we know. Our Grid is already laid bare to fraud, not just by the components made out of nation, but also by the total lie and crime of Geo Engineering and weather modification/manipulation which has been going on for decades! (Examples of information : Grid Down, Power Up, Documentary, Dimming Dane Wiggington, NASA: The Future is Now (if you can still find it on the web) ADD researching the approximately 130 DUMBS, underground facilities, created with Regular and Nuclear tunnel boring machines! What is going on down there? Just what are we supplying, while depriving our citizens of more and more rsources.</p> <p>4. Coal Lies: We have an estimated 1000 years of coal available to provide energy if needed. We closed a perfectly running, cleaner than many, coal plant in Colorado Springs, without having an alternative to supplement the lost electricity. Our bills have almost doubled since that time. This should have been done later, when perhaps more natural gas, etc. was put into place. China is building hundreds of coal plants while we shut them down! WHY ? We have the ability to do coal cleaner, with things like catalytic converters, etc. India and China most likely create the most "Pollution" as you call it than anyone else! We do almost nothing in comparison, yet we are controlled in our every process under the guise of Green New Deal misinformation.</p> <p>5. Gas and Oil, petroleum products are so available in our nation alone, we can supply energy for hundreds of years, and get the real time to create other energy sources. Yet our corrupt past regime shut down clean pipelines, in lieu of disgusting</p>
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	<p>fields and fields of useless alternative energy sources, creating land grabs and blight! Our populations would die if forced into the unreliable, false timelines proposed by the Green Plans, since the majority of our energy still comes from oil and gas, and I am speaking of reliable energy, not dependent on back up after back up. Why did our nation allow itself to become dependent on China for almost all of our energy components? WHY SO MANY LIES? WHY SO MANY LAND GRABS WITH LIES? WHY SO MANY CONSERVATION EASEMENTS, LEASES, ETC. WHICH RENDER LAND OWNERS UNABLE TO PROPERLY UTILIZE THEIR LANDS? WHY ARE PEOPLE ATTEMPTING TO SELL OUR LAND RIGHTS TO INVESTORS IN AND OUT OF OUR COUNTRY? WHY IS CHINA BUYING LAND RIGHT NEXT TO MILITARY BASES? WHY IS BILL GATES, GENOCIDAL MURDERER BUYING UP TONS OF LAND – Oh wait I got this one! To build his large data centers for AI which will eat up tons of water and electricity! Why is no one being informed of this!?? Why do we have so many cities in the UN C40 SMART CITY PLANS like Los Angeles which has a LA 2028 plan as one of those cities, conveniently along with the Olympics 2028? WHY IS NO ONE TALKING ABOUT THE DEW’S Directed Energy Weapons, which look like the big fires in Hawaii and LA and other places? Or the floods, increased in areas like North Carolina, where there are desired lithium mine areas, and even the last VP’s husband has a lithium company? China displaced 1.8 million people for their Olympics! I could go on, but I think you see the strange connections, and the proof is there, Our nations are being engineered socially, chemically, physically, environmentally, in other words weather engineering, and the masses are seeing the proof. Why will our legislators, tasked with defending and protecting us not telling this to us? The MAJORITY of our energy still comes from oil and gas, and coal. Why is no one telling the truth about that percentage, and the great lengths companies in this industry have taken to be cleaner, and contribute to communities all over the nation, to the tune of billions of dollars given back? No matter what accidents we have had in all industries, there is a worse record of danger awaiting with rushing into what is being relabeled as Clean.</p> <p>6. Nuclear option: Having actually toured a nuclear power plant many years ago, and having seen the spent fuel rod pools, I learned about our programs to bring in spent fuel materials from overseas, and truck them to Barnwell and Aiken South Carolina, to be stored. One facility is higher grade of materials, one is for lower grade. Just travelling on the roads, posed some potential hazard in the event of an accident. No one was ever told about that either. You can laugh at me about bring up the Karen Silkwoods’ of the world for exposing radiation exposure to workers of nuclear power plants, and most likely killed for spilling the beans, but it is true. Look at how many whistleblowers have DIED accidentally in just the last 4 years! The nuclear materials still need to be kept away from people for years and years, and often the containment is not permanent. Look at the dirty storage of radioactive materials in Russia alone. While Scientists promise we have new packaging, new storage, and its SAFE, the idea of putting nuclear plants, big or small in population centers alone, is not just irresponsible, it is kicking the job, harm, cost, down the road to the next generation to handle, and or clean up. While we don’t want to ignore the needs of the future, we don’t want to keep creating mess after mess, burying it, and letting the next generation worry about it. We have resources now, until we come up with more rational and totally Safer systems. There is still CERN or our version, or Tesla stuff no one wants anyone to see? WHY? I realize some of you might be rocket</p>
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scientists" but I don't want this type of danger DECLASSIFIED AS CLEAN ENERGY when it is in fact not clean, not safe, and not READY FOR PRIME TIME!

7. Liability:..... It is too much, too fast, and too furious! WHY IS THIS ALL BEING SHOVED DOWN OUR THROATS, WITHOUT REAL PUBLIC KNOWLEDGE, UNDERSTANDING, AND ACTUALLY ACOUNTABILITY? Anyone, government or private owned facilities still need to be liable, and should not be removed from such liability to the public it might harm. There needs to be an awful lot more culpability data, more information given than a few pages in a very badly drafted, bill most likely made by someone from either an AI bot in a mine, a Bloomberg drafted bill, or other interested lobby partner. THIS BILL SHOULD BE BURRIED FOR A WHILE TO SEASON! BELOW I AM GIVING YOU SOME FACTS WHICH YOU ARE FREE TO VERIFY FROM THE BOOK, AND REAL SCIENCE! NOTE: EPA USDA BLM Farm Bureau Lenders are all exceeding their rights, and violating too much against the citizens (Chevron)

List of Inconvenient Facts I would seriously ask you to Consider before selling us out to destruction in the name of greed or hasty actions:

Carbon dioxide is not the primary greenhouse gas.

The warming effect of CO2 declines as its concentration increases.

First and Foremost, CO2 is plant food.

In Last four ice ages, the CO2 level was dangerously low.

140-million-year trend of dangerously decreasing CO2.

Our current geologic period (Quaternary) has the lowest average CO2 levels in the history of the earth.

More CO2 means more plant growth.

More CO2 helps to feed more people worldwide.

More CO2 means moister soil.

Recent Inconvenient Pause of 18 years in warming, despite rise in CO2.

CO2 rose after the Second World War, but temperature fell.

Modern warming began long before SUV's or coal-fired plants.

Melting glaciers and rising seas confirm warming predated increases of CO2.

Temperatures have changed for 800,000 years. It wasn't us.

Interglacials usually last 10,000-15,000 years. Ours is 11,000 years old.

Each of the four previous inter-glacial warming periods were significantly warmer than our current temperature.

The last interglacial, -120,000 years ago, was 8 Degrees C (14.4 Degrees F) warmer than today. The polar bears survived. Greenland didn't melt.

Temperatures changed during the past 10,000 years. It wasn't us.

Today's total warming and warming rate are similar to earlier periods.

	<p>It was warmer than today for 6,100 of the last 10,000 years.</p> <p>Our current trend is neither unusual nor unprecedented.</p> <p>Earth's orbit and tilt drive glacial-interglacial changes.</p> <p>We are living in one of the coldest periods in all of Earth's history.</p> <p>Earth has not had a geologic period this cold in 250 million years.</p> <p>The only thing constant about temperatures over 600 million years is that they have been constantly changing. (Recurring Inconvenient Fact)</p> <p>For most of Earth's history, it was about 10 Degrees C (18 Degrees F) warmer than today.</p> <p>IPCC models overstate future warming up to three times too much.</p> <p>For human advancement, warmer is better than colder.</p> <p>A return to the temperature at the beginning of the Industrial Revolution would lead to famine and death.</p> <p>Only 0.3% of published scientists stated in their papers that recent warming was mostly MAN-MADE.</p> <p>Science is not consensus, and consensus is not science.</p> <p>More CO2 = fewer droughts.</p> <p>Higher temperatures = fewer droughts.</p> <p>Forest Fires across the northern hemisphere are decreasing.</p> <p>More CO2 = CO2 fertilization = more soil moisture = faster tree growth = fewer forest fires.</p> <p>More CO2 in the atmosphere means more food for everyone.</p> <p>The Earth is becoming greener, not turning into desert.</p> <p>Growing seasons are lengthening.</p> <p>More CO2 and warmer weather mean more world food production.</p> <p>EPA: Heat waves are not becoming more frequent.</p> <p>Extreme heat events are declining.</p> <p>Cold kills far more people every year than heat.</p> <p>Warmer weather means many fewer temperature-related deaths.</p> <p>Warmer weather prevents millions of premature deaths each year.</p> <p>More CO2 and warmth mean shorter, less intense heat waves.</p> <p>Number of tornadoes is declining.</p> <p>The number of tornadoes in 2016 was the lowest on record.</p> <p>Deaths from tornadoes are falling.</p> <p>There has been no increase in frequency of hurricanes in recent data.</p> <p>We have seen 250 years of declining hurricane frequency.</p>
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	<p>No significant increase in hurricane intensity due to warming.</p> <p>The population of polar bears is growing.</p> <p>There are more polar bears than we've had for 50 years.</p> <p>Polar bears are thriving even where sea ice is diminishing.</p> <p>There is no historic correlation between co2 and oceanic pH.</p> <p>The oceans did not become acidic even at 15 times modern CO2 levels.</p> <p>Sea-level increase began less than15,000 years ago.</p> <p>Recent sea-level rise began 150 years before the increase in CO2.</p> <p>Melting the northern polar ice cap would not increase sea level.</p> <p>Most of Antarctica is cooling and gaining ice mass.</p> <p>Inconvenient Facts, By: Gregory Wrightstone, Silver Crown Productions, LLC @2017, Website: inconvenientfacts.xyz</p>
<p>Terri Helm Against Great Old Broads for Wilderness</p>	<p>Nuclear energy is not our best option for clean energy.</p> <p>Mining uranium has cost thousands of lives due to cancer.</p> <p>Milling uranium has left huge piles of radioactive waste which often become wind born destroying pastures, poisoning water, and killing animals. Red Mesa Mill in Utah is a prime example of the devastation that has been wrought on a community that has suffered the health and environmental consequences for decades.</p> <p>Tons of water are required to mine and to mill uranium. Colorado does not have water to spare especially since the water used in the nuclear process becomes toxic waste.</p> <p>Transporting the product remains dangerous on our highways and railroads.</p> <p>Please consider putting Colorado into truly CLEAN alternative energy sources such as wind and solar.</p>

<p>Sofia Sanchez</p> <p>Against themselves</p>	<p>Dear Members of the House Energy and Environment Committee,</p> <p>I am writing to express my strong opposition to HB25-1040, which seeks to redefine "clean energy" to include nuclear power. While the transition to sustainable energy sources is critical, nuclear power is neither clean nor cost-effective. Instead, it presents significant environmental, financial, and health risks that Colorado should not ignore.</p> <p>First, nuclear energy is extremely water-intensive, a major concern for a state like Colorado, where water resources are already scarce. Nuclear reactors require massive amounts of fresh water both for power generation and for cooling spent fuel. This not only strains our water supply but also increases the risk of contamination through leaks or improper disposal.</p> <p>Nuclear power generation also produces highly radioactive waste that remains hazardous for thousands of years. The United States currently lacks a permanent disposal facility for this waste, meaning that any nuclear facility in Colorado could be forced to store dangerous materials onsite indefinitely, posing an unacceptable risk of long-term public health hazards.</p> <p>Nuclear energy also carries well-documented health risks. Studies have linked proximity to nuclear power plants with higher rates of cancer, particularly childhood leukemia. While proponents of nuclear energy downplay these concerns, the long-term exposure risks to radiation, especially for workers and nearby communities, should not be ignored. The safety of Coloradans should take precedence over the financial interests of utility companies and corporate investors. Further, nuclear power has a history of environmental injustice. Historically, vulnerable communities, including Indigenous and low-income populations, have been disproportionately impacted by uranium mining, nuclear waste disposal, and reactor construction. It is deeply concerning that areas like Pueblo are being targeted as potential sites for nuclear development. Colorado must not repeat the mistakes of the past by turning disadvantaged communities into sacrifice zones for corporate profit.</p> <p>From an economic perspective, nuclear energy is one of the most expensive forms of electricity generation. The financial burden often falls on taxpayers, driving up electricity costs while diverting funds away from proven, truly clean energy sources like wind and solar. Unlike nuclear power, these renewable resources continue to decrease in cost and improve in efficiency.</p> <p>Rather than embracing a high-risk, high-cost energy source, Colorado should focus on expanding investment in wind, solar, and energy storage technologies. These options provide truly clean, safe, and sustainable energy while creating jobs and fostering economic growth. For these reasons, I urge you to vote NO on HB25-1040 and keep Colorado nuclear-free.</p> <p>Sincerely, Sofia Sanchez</p>
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<p>Tamar Krantz</p> <p>Against themselves</p>	<p>Honorable members of the House Energy and Environment Committee,</p> <p>Thankyou for your service and for your commitment to reducing GHG to slow the impacts of climate change.</p> <p>Please oppose HB 1040--Adding Nuclear Energy as a Clean Energy Resource.</p> <p>I am not opposed to nuclear energy, but this bill is not the way to advance it. First, nuclear does not meet the definition of a clean energy resource, and second, this bill would advance nuclear at the expense of other proven renewable energy sources.</p> <p>While nuclear doesn't produce GHG during electricity generation, it is not clean. Colo. Rev. Stat. § 40-2-124 (a) emphasises renewable resources and specifically excludes fossil and nuclear fuels. While the life cycle GHG emissions for nuclear are lower than those for coal and other non-renewables, it produces more life cycle GHG than most renewables. Also, nuclear fission cannot be considered clean as long as there is no safe long-term storage for the waste. Dry cask storage units have lifetimes of 40 to 100 years and require constant monitoring and surveillance. The waste remains radioactive for thousands of years. Colorado doesn't need the problem of storing high-level radioactive waste.</p> <p>It is inapropriate to advance nuclear power at the expense of Colorado's proven clean energy technologies like solar and wind. As an Xcel Energy customer, I pay the "Colorado Energy Plan Adjustment" on my electric bill to fund early retirement of coal and the transition to clean energy. I do not want to see this diverted for nuclear energy. The Colorado Energy Plan should continue to work towards a renewable energy future.</p> <p>Why not create a task force to determine how, when, where, and if nuclear power and waste should be (re)introduced in Colorado? One of the recent arguments in favor of nuclear energy investment is an impending demand for energy to support data centers for AI. You recognized that AI can cause harm alongside its benefits and formed a task force to address that. Nuclear power can also cause harm if not carefully planned and regulated.</p> <p>Third time is not a charm. Please reject this bill.</p> <p>Sincerely, Tamar Krantz Louisville</p>
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<p>Suree Towfighnia</p> <p>Against themselves</p>	<p>Dear Honorable Members of the Colorado General Assembly,</p> <p>I am a registered voter, member of the community, professional, mother, and someone who is dedicated to considering the impact of the choices we make on future generations (including my children, elders, and anyone who wants to share in the beauty of Colorado.</p> <p>HB25-1040 is a flawed bill by definition, but as a multi-million dollar industry, the nuclear and uranium interests have a lot of interest in increasing their profits at the expense of Colorado citizens.</p> <p>I too was lured into the nuclear is clean debate in 2005, when things were popping off. I researched and became acutely aware that, although there are some aspects where nuclear rates better than coal or oil, when including the full cycle of uranium processing, to milling, to processing, to powering, to waste, and then caring for the waste and reactors for 1000's of years, it is clear that THIS IS NOT A CLEAN ENERGY.</p> <p>I must say, I was surprised to see my home state advocating for this definition, which counters our Colorado commitment to the environment. We know that we have a water crisis going on with drought, overuse of the Colorado River with longer recharge times in aquifers, streams, rivers, etc. Why would we want to encourage a new definition of clean energy to include nuclear, when nuclear requires SO MUCH WATER TO MINE, PROCESS, POWER, AND MAINTAIN SAFETY WITH THE WASTE FOREVER?</p> <p>In addition, these potential mines and power plants are planned in communities that are some of the state's most vulnerable, Pueblo, the San Juan River Basin, etc. They are near tribal communities who have long suffered the consequences of under-regulated uranium mines and now live with illness, death, cancers, diabetes, water contamination, hazardous waste that has nowhere to go.</p> <p>I urge you from the bottom of my heart, to consider my testimony and vote with your heart for what is right. Please do not give into the lobbyists, fancy pitches about clean nuclear, and whatever else might be skewing your judgement. If you can't take it from me, learn for yourself as I did- there is no clean, safe, green nuclear energy that involves uranium mining, milling, processing, and waste storage. We can find other power, but once our water is gone, it's gone.</p> <p>Sincerely, Suree Towfighnia</p>
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<p>Erik Hunter For themselves</p>	<p>As a graduate of the Colorado School of Mines, and a former Colorado resident, I respectfully urge the committee to pass HB 25-1040. Colorado is blessed with many unique geologic features which include uranium deposits that can be utilized in a cost-effective and environmentally safe manner. I moved to Colorado in 2001 to pursue a graduate degree in mining engineering. My thesis was focused on cost-effective solutions for remediating mining waste and recovering valuable uranium from existing legacy sites. Due to market conditions and the revocation of the license previously granted by the State of Colorado for the Pinyon Ridge Mill; I was unable to find a job in the field of uranium mining and remediation upon graduation. I remain hopeful that the political climate will change and I will be able to return to Colorado to implement my plan to recover uranium and remediate legacy mining areas.</p>
<p>Nick Lumley For themselves</p>	<p>Hi, and thank you to the Legislature for reviewing this written testimony.</p> <p>I am testifying in support of HB25-1040 and the benefit our Colorado communities can realize from development of clean, safe nuclear energy. I come from the perspective of a career-long electric power engineer and power system development leader with an interest in promoting a transition to safe, reliable, affordable, and clean-carbon-free energy. Nuclear energy supports all of these goals: American nuclear power is a safe, tightly-regulated technology that has contributed to zero direct fatalities in over 70 years while modern designs greatly limit the risk of release of hazardous materials. Nuclear power plants are highly reliable, often able to produce power over 95% of the time, significantly greater than renewables or even fossil fuel plants. This power can be generated steadily, regardless of the weather and with months to years of on-site fuel supply. Nuclear energy contributes to affordability by being a concentrated, reliable energy source with inexpensive fuel, but more importantly, nuclear power plants enable greater penetration of clean renewable power. In nuclear energy, clean and affordable are tied together. High penetration of renewable power is has trouble supporting continuous system load, which causes power utilities to build numerous, costly, fast-reacting fossil-fuel power plants to cover dips in renewable output. A base of steady nuclear power, including modern faster-reacting, load-following nuclear generators, can allow us to serve growing electrification load with reliable nuclear energy, along with increasing amounts of clean renewable power.</p> <p>In addition to the electric power benefits to Colorado's citizens, nuclear power plants are major contributors to local economic productivity, providing high-skill, high-pay, steady long-term jobs (many of which can be organized) and tax revenue to our communities.</p> <p>From the perspective of those of us who have devoted our professional lives to keeping the lights on and the heat running, we are excited and hopeful about a future integrating nuclear energy into our clean power plans. There are no</p>

	<p>commercially mature technologies that can speed decarbonization while serving growing load safely, reliably, and affordably like nuclear energy.</p> <p>I regret I cannot attend in person due to professional obligations; thank you for the consideration,</p> <p>Nick Lumley, P.E.</p> <p>Colorado electric energy professional and Douglas County resident</p>
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LCS Committees <committees.lcs.ga@coleg.gov>

Written Testimony in Support of HB25-1040

Richard Williams <richard@aalo.com>

Thu, Feb 13, 2025 at 10:40 AM

To: "committees.lcs.ga@coleg.gov" <committees.lcs.ga@coleg.gov>

Cc: Kathleen Nelson Romans <kathleen@aalo.com>

To the Members of the House Energy and Environment Committee,

My name is Richard Williams, and I am the Director of Engineering at Aalo Atomics, where we are developing advanced nuclear technologies designed to provide reliable, carbon-free energy. I strongly urge the committee to pass HB25-1040, which would rightfully classify nuclear energy as a clean energy resource in Colorado.

Nuclear power is one of the most efficient and scalable clean energy sources available today. Unlike intermittent renewables, it provides 24/7 baseload electricity with zero carbon emissions, making it a critical tool in achieving Colorado's clean energy and climate goals. States like Virginia and West Virginia have already recognized nuclear as a clean energy source, enabling new investments in advanced reactor designs that complement wind and solar, enhance grid stability, and reduce reliance on fossil fuels.

Colorado has a rich history of technological leadership, and by recognizing nuclear as clean energy, we can unlock new opportunities for economic growth, high-paying jobs, and energy independence. The latest advancements in nuclear reactor technology—including small modular reactors (SMRs) and microreactors—offer safer, more flexible, and more cost-effective solutions than ever before. These innovations can support industrial decarbonization, rural electrification, and grid resilience in a way that aligns with Colorado's sustainability priorities.

For the third year in a row, this bill has come before the committee, and it is time to act. Classifying nuclear as a clean energy resource is a straightforward and science-based step toward an affordable and sustainable energy future. I urge you to support HB25-1040 and position Colorado at the forefront of clean energy innovation.

Thank you for your time and consideration.

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