Houston, We've Got a Problem

Can Montana's electric grid keep up as coal plants close and data centers open?

ontana Public Service Commissioner Randall Pinocci is advocating for a bold shift in the nation's energy infrastructure. He has expressed interest in meeting with Energy Secretary Chris Wright to highlight the staggering financial losses potentially in the trillions—caused by outdated steel core transmission lines. Pinocci is pushing for a nationwide mandate to replace all transmission and distribution lines with 100% carbon core conductors, citing their superior efficiency and safety. He also proposes outlawing steel core conductors entirely.

Pinocci's vision extends beyond cost savings; he emphasizes the importance of protecting national treasures like Montana's Yellowstone and Glacier National Parks from the risks associated with outdated technology. This initiative aligns with broader efforts to modernize energy systems and enhance grid resilience.

Montana's electric grid faces significant challenges as coal plants close and energyintensive data centers emerge. The closure of coal plants reduces the state's traditional energy supply, while data centers demand substantial electricity to operate. For instance, two proposed data centers near Butte are expected to require up to 400 megawatts of electricity by 2030, enough to power nearly 320,000 homes annually.

NorthWestern Energy, Montana's largest utility, has stated that it plans to meet these demands by expanding its resource portfolio, including acquiring additional capacity from the Colstrip coal-fired power plant.

The surging number of power-intensive mega computing centers and risks posed by more frequent and severe bouts of extreme weather are raising questions about how much the electric grid can take across the country-but especially out west.

Missing in this equation is also the power consumption of marijuana grow operations, both legal and illegal. Indoor marijuana grow operations, both legal and illegal, are incredibly energy-intensive. Legal indoor cannabis cultivation in the U.S. consumes more energy than all outdoor agriculture combined. For perspective, growing just four pounds of cannabis indoors can use as much electricity as the average American home consumes in an entire year.



more reliable transmission, we would be able to instantly at least double our capacity and meet that 2050 goal.

A 2024 report by the nonprofit North American Electric Corp. said about half the continent is at elevated or high risk of energy shortfalls over the next five to 10 years as power plants are retired and the pressure for more electricity escalates. What is missing from discussions at most Public Service Commissions and legislatures across the country is the solution: replace steel core with carbon fiber lines.

Why legislation mandating this has not be considered or implemented yet baffles the mind. It stands out as an immediate and secure solution, especially when weighed against the extensive permitting process. Permits not only demand significant time—sometimes taking years to acquire—but also incur substantial financial costs due to potential litigation. This alternative could save both time and money while ensuring a safer and more efficient outcome.

Mandating carbon core technology for transmission lines is no longer just an option; it's an urgent necessity. Here's why:

1.Safety First – Lives Depend on It: Data shows carbon fiber core technology reduces fire risks and improves reliability. Outdated steel core transmission lines are a known fire hazard, particularly in regions prone to wildfires. Carbon core technology has a proven safety record, with no reported cases of fires or electrocutions caused by downed lines. Every day of delay risks more catastrophic fires, loss of property, and, most immostantly lives minimizing sag, and increasing transmission capacity. Carbon fiber core technology can quickly pay up front cost by line loss saving in 3 to 5 years. According to Public Service Commissioner Randall Pinocci, "We lose money every time we install a outdated steel core conductor. They should be outlawed."

- 3. Environmental Responsibility Protect Our Future: Carbon fiber core lines contribute to a cleaner grid by enabling higher-capacity transmission, which supports renewable energy integration and reduces reliance on outdated, less efficient systems. When you reduce line loss, you reduce carbon emissions, meeting carbon emission goals. In an era of climate change, relying on fire-prone technology puts national treasures like Yellowstone and Glacier National Parks at risk. Carbon core lines not only reduce fire risks but also allow for more efficient transmission of renewable energy, paving the way for a greener, more sustainable grid.
- 4. Fiber Optic Technology-Moving to the Future of Energy Demand: Carbon core technology is also bundled with fiber optic technology which monitors the lines and can pinpoint problems in the line so maintenance can occur before a problem starts, which leads to fewer power outages and potential hazards with downed lines such as fires or injuries. It's staggering that steel core technology, which is nearly 150 years old, is still the default for transmission lines. Carbon core lines are the future—they offer higher capacity, greater durability, and better performance. By mandating their use now, we can future-proof our energy infrastructure.
- **5.Legislative Priorities-Accountability**: Why should taxpayers continue to bear the cost of wildfires and disasters caused by outdated infrastructure? Mandating carbon core lines ensures utilities take proactive steps to enhance safety and efficiency, rather than passing the risks and costs onto the public. Legislators should priorritize modernizing infrastructure, improving energy resilience, and in the process reducing taxpayer liability for disasters caused by outdated technology, such as the fires plaguing California and other states.

Illegal grow operations often exacerbate the issue by stealing electricity, costing utilities millions annually. This energy demand stems from the need for specialized lighting, temperature control, and ventilation systems, which are essential for maintaining optimal growing conditions.

A new study that <u>the National Renewable</u> <u>Energy Laboratory in Golden, CO</u> participated in said the U.S. transmission system of a half million miles of power lines will need to at least double in size by 2050 to remain reliable at the lowest cost to ratepayers. If current steel core transmission lines were replaced with carbon fiber lines, we would not only have safer and importantly, lives. 5.Legis

2. Financial Sense – Billions Are at Stake: Steel core lines are inefficient, costing the U.S. billions annually in wasted energy. In most cases, carbon core technology is the cheaper choice right up front; especially when it bypasses the expensive permitting process, not to mention that less structures are needed. Carbon fiber core transmission lines are also stronger, so the lines can span greater distances. Carbon core lines, by comparison, are lighter, more durable, and require fewer resources to maintain. The upfront investment in carbon core technology quickly pays for itself by reducing energy losses and minimizing future repair and replacement costs. Even though a carbon core technology project may have higher upfront costs, carbon fiber core technology saves money in the long run by reducing maintenance,

The time to act is now. Waiting means more fires, more energy wasted, and more unnecessary risks. By mandating carbon core technology, we take a bold step toward protecting lives, saving money, and securing a safer, greener future.