Statement on Nuclear Energy and a Realistic Clean Energy Future

Michael,

I appreciate the seriousness and practicality of your energy proposal, and I wanted to follow up from the perspective of someone who has spent a career inside nuclear power — both in uniform and in the civilian sector.

I am a former U.S. Navy nuclear-trained sailor and officer, and I've since begun stepping into the commercial nuclear industry as an instructor. I strongly believe nuclear power — particularly modern Small Modular Reactor (SMR) technology — is not only viable, but essential to our future.

The biggest barrier isn't technology — it's fear

One of the greatest challenges facing nuclear energy today isn't technology. It's fear — largely rooted in misunderstanding.

The word nuclear carries a long historical shadow: accidents, weapons, waste, and public harm. That fear is understandable. But it does not reflect the reality of modern nuclear operations, nor the record of disciplined, well-trained professionals who operate these systems safely every day.

The U.S. Navy shows what safe nuclear operations look like

The United States Navy offers a powerful example. For decades, the Navy has operated nuclear-powered aircraft carriers and submarines across the globe — in ports, near cities, and under extreme conditions — without a single nuclear accident harming the public. That record exists because of uncompromising training standards, operational discipline, redundancy, and a culture where accountability is absolute.

That training pipeline — often turning civilians into nuclear operators — is rigorous by design. It produces professionals who understand that attention to detail, procedural compliance, and conservative decision-making are not optional. Many of the most capable operators and leaders in the civilian nuclear industry today came from that Navy foundation.

Historic nuclear accidents require context

When people raise concerns about historic nuclear accidents, context matters.

Three Mile Island, while serious, resulted in no public casualties, no long-term health effects, and demonstrated that even when operator error and maintenance failures occur, layered safety systems can and do protect the public. That event ultimately strengthened regulatory oversight and operational standards across the industry.

Chernobyl, by contrast, involved severe design flaws, unsafe operating practices, and the absence of a true safety culture — conditions that do not exist in the U.S. nuclear framework today.

Modern SMRs reflect decades of lessons learned

Modern nuclear systems, especially SMRs, reflect decades of lessons learned. Passive safety systems, underground containment, and simplified designs are specifically engineered to protect the public, the environment, and the workforce — even under worst-case scenarios.

Why Solar, Wind, Hydropower, and Electric Vehicles Alone Are Not the Energy Future We've Been Promised

The conversation around clean energy has become emotionally charged and overly simplified. Solar panels, wind turbines, hydropower, and electric vehicles are frequently presented as unquestionably good — harmless solutions that will seamlessly replace our existing energy systems. But when we look beyond slogans and examine how these technologies are built, deployed, and maintained, a more complicated picture emerges.

This is not an argument against environmental responsibility. It is an argument for honesty, engineering reality, and long-term thinking.

Solar's hidden footprint

Solar power is often described as "free" and "clean." Once installed, a solar panel produces electricity without emissions. What is rarely discussed is everything that happens before and after that panel ever sees sunlight.

Manufacturing solar panels requires intensive mining of silicon, silver, aluminum, and other metals. These materials are refined through energy-heavy processes, often powered by coal-fired grids overseas. Toxic chemicals such as cadmium, lead, and hydrofluoric acid are used during production, and when panels reach the end of their 20–30 year lifespan, recycling options are limited. Many end up in landfills, where those same materials can leach into soil and groundwater.

Solar also struggles with scale. In dense cities, there simply isn't enough roof or land area to generate the power modern life demands. And because solar only works when the sun shines, every solar-heavy grid must be backed up by another power source or massive battery systems — both of which come with their own environmental and economic costs.

Wind's material demands and intermittency

Wind power faces similar challenges. Wind turbines are enormous machines built from steel, concrete, fiberglass, and rare earth metals. Mining rare earth elements is among the most environmentally destructive industrial activities in the world, producing toxic waste and long-term land damage. Once installed, wind turbines operate intermittently, often producing only a fraction of their rated output depending on weather conditions. This unpredictability forces grid operators to maintain constant backup generation.

The lifespan of wind turbines is also shorter than many assume. Blades typically last 20 to 25 years and are extremely difficult to recycle. Thousands have already been buried in landfills because no viable large-scale recycling solution exists. While wind energy can contribute to a grid, it adds complexity and instability rather than reliability.

Hydropower's limits

Hydropower, often grouped with renewables as a clean solution, is far more limited than the public realizes. Large dams fundamentally alter river ecosystems, disrupt fish migration, and flood vast areas of land. Many of the most viable dam sites in the United States are already developed, leaving little room for expansion. On top of that, changing climate patterns are making water availability less predictable. Hydropower can be useful in specific locations, but it is not a scalable answer for growing urban and industrial energy demand.

Electric vehicles and upstream impacts

Electric vehicles are perhaps the most misunderstood of all. They are frequently described as "zero-emission," but that description applies only at the tailpipe. The batteries that power EVs rely on lithium, cobalt, nickel, and graphite — materials that must be mined, processed, and transported using fossil fuels. Lithium extraction consumes enormous quantities of water, often in arid regions. Cobalt mining has raised serious environmental and human rights concerns. Battery manufacturing produces toxic waste streams that are difficult to manage safely.

Over time, EV batteries degrade. Cold weather, heavy use, and age reduce range and performance. Battery replacement is expensive, and recycling infrastructure remains limited. While electric vehicles can reduce urban air pollution, they shift environmental harm upstream and dramatically increase demand on an already strained electrical grid.

The core issue: intermittency and scale

The underlying issue tying all of these technologies together is intermittency and scale. Modern society requires electricity that is available at all times — not just when the sun is shining or the wind is blowing. Hospitals, data centers, manufacturing facilities, transportation systems, and homes depend on continuous, reliable power. Solar, wind, and battery systems alone cannot meet that requirement without extensive backup infrastructure.

Energy systems must be evaluated not by how they sound in a campaign speech, but by how they perform over decades. That means considering land use, material consumption, lifecycle emissions, reliability, workforce demands, and long-term environmental impact.

This is why serious energy planners increasingly acknowledge that renewables alone cannot sustain a modern, electrified society. High-energy-density sources that operate continuously and require minimal land and material throughput are essential for a stable, low-carbon future.

The path forward is not ideological. It is practical.

A responsible energy strategy balances technologies instead of worshiping any single one. It recognizes that solar and wind can supplement a grid, but they cannot replace reliable baseload power. It values systems designed to last generations, not just election cycles. And it respects the skilled labor, training, and discipline required to operate complex energy infrastructure safely.

The future of clean energy will not be built on wishful thinking.

It will be built on facts, physics, and the willingness to confront uncomfortable truths — for the sake of the next generation, not just the next headline.

Reliability, jobs, and responsibility: why nuclear belongs in the mix

At the same time, demand on our electrical grid is rising dramatically. Data centers, advanced manufacturing, healthcare systems, and electrification initiatives are pushing energy needs to historic highs. Intermittent energy sources alone cannot meet that demand reliably, especially in dense, land-constrained cities like Providence.

This is not an argument against renewables. It’s an argument for balance, realism, and reliability.

Nuclear power also represents a future for both blue-collar and white-collar workers. It demands skilled trades, engineers, technicians, welders, electricians, operators, and supervisors — people capable of making high-stakes decisions with precision and discipline. These are structured, dignified careers that rebuild the working-class backbone of our energy system.

With the right systems in place — training pipelines, strong oversight, union labor, and transparent public engagement — nuclear power can be safe, affordable, and community-centered.

At its core, this conversation isn’t about ideology. It’s about responsibility.

It’s about keeping hospitals running, homes heated, lights on for kids doing homework, and businesses powered — without exporting pollution or instability to future generations.

I believe there is a meaningful opportunity here for Providence to lead with facts, education, and courage. I would welcome the opportunity to help explain, teach, and engage the public on what modern nuclear power really is — and what it is not.

Thank you for advancing a serious, working-class-focused energy vision. This is exactly the kind of conversation our cities and our country need.

Respectfully,

Former U.S. Navy Nuclear Officer

Commercial Nuclear Instructor