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Carol Lane
X-energy

Carol Lane is Vice President of Government Affairs for X-energy. Her responsibilities include working with Congress and the Executive Branch to advance X-energy's overall business goals and objectives within the confines of U.S. national policy objectives. Before joining X-energy in 2015, she was Vice President of Washington Operations and Vice President of Civil and Commercial Space for Ball Aerospace & Technologies, Corp. Lane has more than 20 years of experience in government and the private sector, working on energy, civilian space, and national security policy.

Strengthening the West Virginia Energy Mix

West Virginia's legacy as a bedrock of energy production for the nation makes it poised to drive toward a clean energy transition that is good for the state, good for workers, good for the country, and good for the environment.

In 2020, the Mountain State accounted for 5 percent of U.S. total energy production, ranking fourth in the country. Now, companies and consumers are looking to states like West Virginia as they evaluate options to diversify its energy sources.

The inclusion of advanced nuclear energy could play three key roles in West Virginia's future economy. First, with the growth of renewable energy in the state, advanced nuclear plants, like coal plants, can not only provide base power, but can provide flexible power by complementing intermittent solar and wind energy. Second, having clean energy baseload power attracts new industries to the state. Finally, advanced nuclear plants



infrastructure and reducing construction costs. A study authored by the Idaho National Laboratory for the U.S. Department of Energy found that transitioning current and former coal plants to advanced nuclear plants would help streamline the clean energy transition while reducing negative impacts on communities and establishing a clean and reliable energy source. Further, the study found that 157 retired coal plants and 237 operating coal plants are potential candidates for advanced nuclear power sites – raising the economic value of those sites.

For coal plant communities, there is an unmistakable benefit of added economic value from reimagining these sites for a new energy source. According to the Bipartisan Policy

“West Virginia’s energy transition can propel the state into a leader of energy production for the rest of the century.”

can attract industrial and manufacturing companies that are being required to reduce their carbon footprint. Advanced nuclear plants can provide high temperature steam for industrial processes, in addition to electricity.

Deploying advanced nuclear plants on these sites also simultaneously lessens the time and cost needed to convert these facilities by, for example, reuse of coal plant transmission

Center, up to 77 percent of coal plant jobs are transferable to nuclear plants with no new workforce licensing requirements, opening the door for West Virginians with transferable skills to lead the energy evolution and move from one industry to another. As a coal-dominant state, West Virginians could show the world how this is done! These workers would even increase their earning potential, as nuclear offers the highest paying jobs in

the sector, with wages typically 25 to 30 percent higher than any other energy technology.

This transition is not just the vision of an industry, it is part of a critical policy framework being supported by West Virginia lawmakers at the federal and state level. U.S. Senator Joe Manchin (D – W. Va.) recently pushed to incorporate \$369 billion for climate and energy projects in the Inflation Reduction Act. Shortly thereafter, the West Virginia Legislature and Governor Jim Justice lifted the ban on nuclear power, signifying support for a safe, thoughtful transition. Retired plants throughout West Virginia present tremendous opportunity to bring advanced nuclear technology to the Mountain State, ensuring West Virginia's position as an energy-leading state for years to come.

Today, almost 20 percent of our domestic energy comes from nuclear energy, but it comes from plants that were built decades ago. The industry faces misunderstood and antiquated views that nuclear plants are highly complicated. X-energy is changing the possibilities for nuclear energy.

X-energy's advanced nuclear technology is designed not to melt down, occupies

a fraction of the land area traditionally associated with nuclear plants, can integrate well with renewables on the grid, and can produce both electricity and steam. These small modular reactors (SMRs) are much simpler plants, taking best practices from



TRISO-X Fuel, X-energy's proprietary tri-structural isotropic particle fuel.

nuclear, gas, and coal plant operations. This feature, separating the nuclear reactor from the turbine and steam generators, enhances both safety and the transference of job skills.

Advanced nuclear's potential is bolstered by opportunities to build sustainable domestic supply chains, helping to reduce the risk that comes with foreign dependence for our energy infrastructure.

In May 2022, X-energy and Amsted Graphite Materials – a company with deep West Virginia roots – established a partnership to explore opportunities for domestic manufacturing of nuclear-grade graphite necessary for our reactors and fuel. At a time when international resources are unstable and we are confronted with increased energy demand following the pandemic, it is critical to ensure our U.S. supply chain is not vulnerable to interruptions. Further, building a supply chain for the next generation of nuclear energy creates additional jobs, with the potential to leverage an existing base of highly skilled and trained trade workers.

Advanced nuclear energy will be deployed by the end of the decade. This timing is well aligned with West Virginia's energy transition. X-energy has announced a recent joint partnership with Dow, which will deploy an Xe-100 high-temperature, gas-cooled

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Xe-100 Nuclear Power Plant Rendering



Xe-100, an 80 MWe High-Temperature Gas-cooled Reactor (HTGR)

Making the invisible economy visible

Bearing none of the visible hallmarks of earlier economic eras (e.g., agricultural, industrial), the tech economy has been practically invisible to underestimated humans. To secure equity in tech, West Virginia's leading stewards of local economies – from government to business to economic to innovation to workforce to community development – must tangibly offer underestimated humans new economic mobility pathways to tech. These stewards are singularly best able to illuminate the tremendous opportunities in the tech economy and cultivate with Bitwise Industries the most favorable conditions for underestimated humans to compete and win in tech.

The upshot is that the Bitwise Industries story is about equity. Breathing life into the simple equation (equity = ownership), we illustrate that equipping underestimated humans with the skills to gain ownership stakes in tech is a powerful solution for which the time has come. Until now, the tech economy has altogether missed underestimated humans and communities, not only in West Virginia, but in similarly situated places throughout the U.S.

Bitwise Industries provides new ways to change that. The remaining question is whether we have the will? 



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Carol Lane

Strengthening the West Virginia Energy Mix

reactor plant at one of Dow's U.S. Gulf Coast sites through the U.S. Department of Energy's Advanced Reactor Demonstration Program. It will serve as a leading example of how nuclear technology can be applied in the industrial sector to reduce the carbon footprint of industrial products and simultaneously providing safe, clean, affordable electricity.

West Virginia's energy transition can propel the state into a leader of energy production for the rest of the century, retain young people in the state by providing jobs for the next generation workforce, and attract new industry to the state. This is a generational opportunity. Eyes are on all sectors of the economy to make investments today to produce clean and affordable energy while bolstering our competitive and economic edge in the world. In partnership, progress, and proactive efforts, West Virginia is positioned to capitalize on its legacy of a U.S. energy production leader. 



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Sarah Armstrong Tucker

Higher Education Programs Helping Students Land Careers in the New Economy

Through new programming like the historic dual enrollment pilot, to vast financial aid opportunities and longstanding programs, like Learn & Earn, West Virginia is undoubtedly investing more strongly in our citizens' education and West Virginia's workforce than ever before. This is a testament to our state's commitment to a stronger future – and to taking full advantage of opportunities in the New Economy.

Details about West Virginia's dual enrollment program will be announced in the coming months. Information on each of our state's financial aid programs can be found at collegeforwv.com. Information about workforce partnerships like Learn & Earn can be found at wvctcs.org/grants/. 



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**Hannah French
and Kathryn Gioia**

Preparing for the Future with Digital Assets

- Does your Financial Power of Attorney, Will and/or Trust include **language above and beyond RUFADAA**, authorizing your fiduciary access to digital assets stored directly on the blockchain?

These are legitimate issues and considerations that can have a major impact on an account holder and their beneficiaries, and the complicated nature of such digital assets will continue to evolve as they grow in popularity and global acceptance. For real-world examples, considerations, and hypotheticals, visit the Bowles Rice Tax Team blog, *Taxation With Representation*, at www.bowlesrice.com/taxation-with-representation-blog to read the companion piece to this article. 