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Fidelis New Energy Positions the Future of Clean Energy in West Virginia with The Mountaineer GigaSystem™



Daniel Shapiro
Fidelis New Energy

Daniel Shapiro is the Co-Founder, CEO and Managing Partner of Fidelis. Shapiro co-founded Fidelis New Energy with Bengt Jarlso in 2019 with the intent of leveraging their joint extensive experience in complex infrastructure investment, development, delivery, and operations to develop, deliver, and operate climate impact infrastructure.



Pete Hollis
Fidelis New Energy

Pete Hollis is the Senior Vice President of Fidelis. Prior to Fidelis, Hollis was the CEO of Cronus Capital Partners, a water midstream and injection company targeting asset acquisitions in the Midland Basin with the goal of developing a water midstream supersystem.

Fidelis New Energy, LLC (“Fidelis”) is spearheading a transformative energy initiative in West Virginia with the launch of the Mountaineer GigaSystem™. This groundbreaking project is composed of three main pillars:

1. The Hydrogen Plant – a modern facility in Mason County dedicated to producing clean hydrogen.
2. The Monarch Cloud Campus – a network of advanced data centers harnessing hydrogen’s power.
3. Innovative Greenhouse – facilities that leverage waste heat and emissions, aiming to cultivate faster-growing fresh produce.

In a significant leap toward a sustainable future, Fidelis New Energy has unveiled an innovative plan to construct multiple infrastructure initiatives, focusing on the emerging hydrogen economy and encompassing hydrogen



The Mountaineer GigaSystem™, the core of this project, is anticipated to roll out in four phases. Starting in 2028, the facility is forecasted to have a production capacity of up to 500 metric tons of hydrogen daily. Considering just the hydrogen aspect of this expansive project, each phase necessitates a capital investment of roughly \$2 billion. Such significant capital outlay promises to invigorate West Virginia’s economy. Beyond the plant’s construction and operation, the state stands to benefit from revenues generated by the long-term storage of CO2. At full buildout, the state is projected to earn an additional \$100 million in annual revenue.

“With its rich history as the nation’s energy hub, the Mountain State stands on the brink of a renewed ascendancy...”

production, data centers, and carbon neutral greenhouses. The project utilizes the sophisticated FidelisH2® technology, which incorporates natural gas, carbon capture, utilization, and sequestration (“CCUS”), and renewable energy. This coordinated approach will enable Fidelis to produce hydrogen, while maintaining a net-zero carbon footprint, bolstering West Virginia’s contribution to an American clean energy future.

During construction, the project will create an estimated 4,200 construction jobs and, upon operation, Mountaineer will provide an estimated 800 full-time permanent jobs. The hydrogen produced by the Mountaineer GigaSystem™ will be utilized across sectors, including utilities, transportation, steel production, and other energy-intensive industries.



Mountaineer GigaSystem™ site rendering.

Expanding on the potential of the Mountaineer GigaSystem™, Fidelis is developing the Monarch Cloud Campus to enhance the value produced by complementing their core project initiatives. Backed by an estimated auxiliary investment of \$5 billion through all project phases, the campus is set to establish a series of net-zero carbon emission data centers. These data centers will synergistically harness the hydrogen produced by the Mountaineer GigaSystem™ while channeling H2PowerCool technologies to cool the computing units. At full potential, the Monarch Cloud Campus is designed to have a cooling and power infrastructure capable of supporting data centers with a combined energy demand of up to 2GW, with 500MW per train of development.

Another innovative and complementary facet of the Monarch Cloud Campus is its integration of greenhouses. These facilities utilize waste heat and a portion of the CO2 emissions from the Mountaineer GigaSystem™, supercharging their

operations. As a result, they are capable of cultivating carbon-neutral, fresh produce at rates surpassing traditional commercial greenhouses.

West Virginia stands poised to reap significant economic and employment benefits from this venture. As carbon reduction opportunities flourish in the coming years, the state is well-prepared to capitalize on them. John Musgrave, the Executive Director of the Mason County Development Authority, expressed his optimism, stating that the project will “have a major positive impact on the region’s economy. The influx of workers and the establishment of the facility will bring additional business, industry, and technology to Mason County, the state, and the surrounding region,” emphasizing the potential of the project to stimulate the economy and bring positive change in the state’s effort to assist America in the carbon transition.

Fidelis’s pioneering venture in Mason County is more than just an advancement in the industry or a mere investment in clean energy. It encapsulates an all-inclusive vision for West Virginia’s environmental, economic, and employment trajectory. This initiative takes advantage of the Inflation Reduction Act and is the product of the leadership and collaborative efforts of Governor Justice and his administration, the West Virginia Legislature, and many other state and local officials who share Fidelis’s unified vision of creating opportunities, jobs, and a sustainable future for every resident of West Virginia. With its rich history as the nation’s energy hub, the Mountain State stands on the brink of a renewed ascendancy, with hydrogen as the driving force. 

