

Aging Infrastructure: An Opportunity to Reestablish Public Trust and Secure Support for the Midstream Industry

Midstream industry has a responsibility to address the increased risks of incidents that cost the consumer, the environment, and the image of the industry. Between 2020 and 2023, there were 2,446 pipeline incidents reported in the United States, resulting in 54 fatalities, and 131 injuries with the total costs of these incidents reported as \$2,002,363,952 (“Pipeline Incident”, 2024). The uncertainty of when the next incident may occur has negatively impacted the public’s perception and support of the oil and gas industry. A Gallup poll conducted in 2022 found that the oil and gas industry had the majority of negative ratings (62%) out of 25 U.S. industry categories (Brenan, 2022). The task of addressing aging infrastructure is daunting because the midstream industry must take actions that value both commodity loss and social costs of current infrastructure failures. Adopting new monitoring technologies while making this process visible to the public is essential to rebuilding support and ensuring prosperity for the midstream industry.

In 2022, 30,196 miles of gas pipelines and 26,281 miles of hazardous liquid pipelines were installed before 1950 making them over 60 years old (“Gas Transmission Miles,” 2024). The material of older pipelines are more susceptible to leaks that lead to injury, health impacts, and environmental degradation. For example, a Baltimore Gas & Electric company welding contractor was injured when a leaking cast iron joint ignited causing a manhole cover to lift and strike the worker, resulting in an injury that required in-patient hospitalization. Later investigation by the company found that the cast iron main was installed in 1920 (“Cast and Wrought,” 2024). Midstream infrastructure is located in remote areas, making incidents like the

previous example more dangerous where help is not readily available. The inability to constantly monitor remote areas with aging infrastructure puts all who come in contact with undetected issues at risk.

To maintain and sustain current midstream infrastructure in the face of uncertainty, a solid maintenance program can be enhanced by adopting advanced monitoring technology. Midstream industry workers have acknowledged monitoring and maintenance gaps that technology can fill. In a survey conducted by True Transition, workers suggest enforcement of inspection schedules, limiting the amount of work one inspector can fulfill, and increasing the number of routine inspections and maintenance (Biven and Lindner, 2023, p. 55). A pipeline safety inspector reported that they are carrying the workload and responsibilities expected of 3 to 4 employees which makes it feel like they are being worked to death (Biven and Lindner, 2023, p.20). Introducing advanced monitoring technologies will improve worker retention and attract new talent ensuring that pipelines will be well maintained into the future which will help reestablish trust with all stakeholders by making the future of midstream infrastructure safer.

In practice, leaders in the midstream industry are enhancing their monitoring techniques through the adoption of modern technologies. Duke Energy is using satellites to pinpoint emissions that would typically go unnoticed with the help of Colorado State University. The implementation of using satellite technology reduced leak inventory of Duke Energy by approximately 85% since January 2022 (Bittner, 2024). They have also worked with Williams' Transco Pipeline on methane-emission detection technology at a compression station that supplies natural gas to Duke Energy (Bittner, 2024). Natural gas leaks are also being measured during flight using LiDAR technology. SPH engineering has found that drones can outperform

foot searches for leak detection by 5 times (James, 2023). SoCalGas has also seen methane emission reduction through the use of helicopters and drones for monitoring (Bittner, 2024). Adopting monitoring technologies that quickly identify leaks mitigates the impact of emissions and the costs of lost product on the consumer, weighing social cost equally with commodity cost.

The midstream industry has an opportunity to reestablish public trust by being transparent and demonstrating that real action is being taken to improve monitoring of infrastructure for safe and efficient maintenance. To reinforce that all necessary precautions are being taken to safeguard human health and the environment, the public must be educated and involved in midstream monitoring processes. The growth of social media and increased availability of internet access gives corporations the tools to reach out to the public from any location at any time. Industry giants like Shell and ExxonMobil use social media platforms to reach younger audiences to alter public perception of their operations (Hawkinson, 2023). Companies have also dedicated a portion of their website to community safety with resources to spread public awareness and emergency preparedness. The public needs a translator to explain the technicalities involved with monitoring aging infrastructure. The creation of a digestible conversation will eliminate mystery, establish trust, and secure public support benefitting the midstream industry by attracting a solid base of customers, investors, and workforce.

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