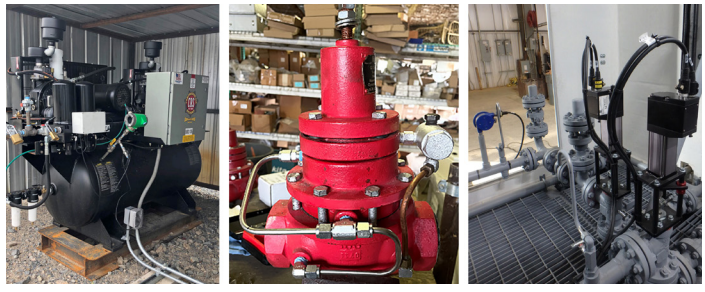
Retrofitting Pneumatic Devices to Reduce Reported Company Methane Emissions by Approximately 80%

In support of Chesapeake's goal to achieve net zero direct greenhouse gas (GHG) emissions by 2035, the company is investing more than $30 million through 2022 in ESG initiatives with emphasis on emissions reduction. Most notably, Chesapeake anticipates retrofitting more than 19,000 pneumatic devices across the company's operating areas. When complete, this effort is expected to reduce company reported GHG and methane emissions by approximately 40% and 80% respectively.

"This is the single most effective solution for efficiently reducing our emissions and supporting our climate goals," said Mike Erickson, Manager – Infrastructure Services and part of the pneumatic device retrofit team. "I've always known Chesapeake to be a responsible operator and this is just another step in reducing our environmental impact."



To understand the company's emissions, Erickson and a team of engineers, Environmental professionals and Operations employees first characterized the sources of site emissions. Through this study, the team confirmed that pneumatic devices were the source of the majority of the company's Scope 1 emissions.

Pneumatic devices often use natural gas pressure to power certain on-site functions, particularly when electrical power is not available. Specific to oil and natural gas sites, most pneumatic devices either control conditions (e.g. levels and pressure) or act as pumps to inject or circulate fluids. Because these devices release methane as the natural gas vents, they are a significant source of methane emissions across the supply chain.

"Our Engineering team saw a problem that needed to be solved," said Erickson. "We were given the resources and support to both find solutions and develop programs that could apply across our operating areas."

Erickson and his colleagues developed at least three solutions for retrofitting the devices with the ability to tailor each solution to the individual well site based on equipment needs and economics.

In most cases, compressed air can be substituted for the natural gas. If this is not feasible, vented emissions can be captured and routed to an emissions control device or the company can change the pneumatic device for one that is powered by an electric motor.

Chesapeake's pneumatic device retrofit program started in the third quarter of 2021 in our Brazos Valley and South Texas business units. Through the end of 2021 and throughout 2022, the company will expand the program across our oil and natural gas plays.

Each retrofit makes a difference — reducing reported methane emissions by approximately 1.5 tons per year per device — to help us achieve net zero direct emissions by 2035. The company has also committed to no longer using natural gas-driven pneumatic devices on new sites and facilities.