

WHITEPAPER

# Official Partners: How Kimray and Kathairos are Delivering a Zero Emissions Solution

The Kimray-Kathairos partnership combines decades of trusted leadership in well site control systems with unparalleled emissions management.



TITLE

Official Partners: How Kimray and Kathairos are Delivering a Zero Emissions Solution

PARTNER

Kimray Inc.

APPLICATION

Kimray and Kathairos amplify their ability to support the oil and gas industry's transition to a low-carbon future.



## Background

In today's oil and gas industry, improving environmental performance is a top priority. Methane emissions, with a global warming potential 28 times greater than CO<sub>2</sub> over a 100-year period, are a key focus. New U.S. regulations require oil and gas operators to reduce methane emissions across hundreds of thousands of sites, posing a significant challenge.

Natural gas-powered pneumatic controllers and pumps, which have been critical to upstream operations for decades, are the largest contributors to these emissions. While individual methane releases may be small, their cumulative effect across millions of devices makes them the leading source of methane emissions in the oilfield.

The EPA's New Source Performance Standards (NSPS) OOOOb and OOOOc mandate that all pneumatic controllers and pumps achieve zero emissions by 2029. Operators now face the financial and logistical challenge of converting millions of devices at remote sites to meet compliance deadlines.

## The Opportunity

Kimray Inc. has been a trusted leader in oilfield process controls and solutions for more than 75 years. Known for their iconic red pneumatic devices, Kimray's equipment is widely used at upstream production sites across the U.S. Their success is built on a reputation for delivering high-quality, reliable products, combined with exceptional aftermarket service and training. Oil and gas operators have long relied on Kimray for expertise in the design, optimization, and maintenance of critical production control systems. With sales and service centers strategically located across major oil and gas regions, Kimray has the commercial reach to support thousands of installations nationwide.

As the oil and gas industry faces a regulatory-driven transition from natural gas-operated pneumatics to zero-emission systems, Kimray recognized the need to adapt while maintaining the high standards its customers have come to expect. The EPA's new regulations require the industry to eliminate methane emissions from pneumatic devices, creating a significant challenge for operators who have long depended on these systems for critical applications.

In response, Kimray sought to find a solution that could scale to meet the industry's needs without sacrificing the reliability and performance that has defined its brand for decades. The company understood that its customers needed more than new technology—they required a pathway to compliance that would allow them to continue using the pneumatic devices they know and trust, while seamlessly meeting regulatory demands.

## The Solution

### **Simplicity & Reliability**

Kathairos Solutions offers a novel yet simple approach to transitioning natural gas-powered pneumatics to zero-emission devices. By harnessing the thermodynamic energy stored in liquid nitrogen, which expands at a 700:1 ratio as it changes from a -320°F liquid to gas at ambient temperature, the solution provides a dry, inert, zero-emissions gas to replace wellsite natural gas for operating pneumatic controls and pumps.

This solution operates on fundamental thermodynamic principles, requiring no external power source or moving parts, which eliminates maintenance needs and reduces failure risks. The absence of power and mechanical components ensures high operational robustness, maximizing uptime and reliability. Over millions of operating hours, the Kathairos Solution has proven to maintain 99.995% operational uptime, demonstrating unparalleled reliability on sites from northern Alberta to south Texas.

### **Scalability & Speed**

Nitrogen, which constitutes 78% of Earth's atmosphere, is abundant and cost-effective. A robust supply chain of liquid nitrogen is ensured by a well-established network of air separation plants across North America, which also produce other critical gases for industries such as healthcare, manufacturing, and research. This guarantees a secure, elastic, and cost-competitive supply of nitrogen for the future.

Through its partnership with Chart Industries, the global leader in cryogenic storage and equipment, Kathairos has leveraged an existing large-scale manufacturing and distribution network for liquid nitrogen transport and onsite storage. This has made the Kathairos solution highly scalable for the majority of upstream production sites. Evidence of its scalability is seen in the rapid growth from a handful of sites in 2022 to over 2,000 sites in just 18 months.

## Data & Transparency

A unique aspect of the Kathairos approach is its built-in capability for real-time monitoring, measurement, and reporting of operational performance. This empirical data enables accurate insights into pneumatic performance, allowing operators to detect issues, such as malfunctioning equipment, by tracking nitrogen consumption rates.

Furthermore, this data provides a granular understanding of pneumatic venting at the site, customer, or basin level. Such transparency allows for precise analysis of venting performance and benchmarking, offering continuous improvement opportunities. This level of insight supports the industry's efforts to reduce emissions from pneumatic process controls and drive operational best practices.

## The Partnership

The partnership between Kimray and Kathairos delivers a comprehensive, scalable solution that helps operators meet emissions regulations without sacrificing the reliability of Kimray's trusted pneumatic controllers. By integrating Kathairos' zero-emissions liquid nitrogen technology with Kimray's established equipment, operators can transition seamlessly, whether for a single site or thousands of locations.

Kimray's extensive service network and decades of expertise, combined with Kathairos' advanced, data-driven approach, offer operators a streamlined "one call, one team" solution. This simplifies the complex process of converting to zero-emission systems, ensuring compliance and operational continuity.

"Combining Kimray's industry-leading products with Kathairos' reliable, emissions-free pneumatic supply creates a formidable solution for our customers and the evolving needs of the industry," said Dustin Anderson, Kimray's VP of Sales & Marketing. "This partnership allows operators to meet emissions goals quickly and efficiently, without sacrificing the dependable Kimray pneumatic controllers they've trusted for 75 years."

This integration not only eliminates methane venting but also provides operational advantages, positioning producers to exceed regulatory requirements. The partnership reflects a shared commitment to advancing the oil and gas industry toward a sustainable, low-carbon future. By combining Kimray's legacy of reliability with Kathairos' innovative methane mitigation technology, this collaboration sets a new standard for emissions reduction and operational excellence, helping operators lead in environmental stewardship.

For more information, visit [www.kathairos.com/kimray](http://www.kathairos.com/kimray) to explore your path to a low-carbon future.

