

Kuva Systems



COMPANY DESCRIPTION

Kuva Systems is a Boston-based cleantech company providing a camera-to-cloud continuous monitoring solution for fast visual insights into methane and VOC emissions at oil & gas sites. Their flagship GCI360 camera—combining a passive Shortwave Infrared (SWIR) detector with RGB optics—is mounted on a pole or tower to sweep user-selected fields of view and capture high-resolution gas imagery.

How It Works: The GCI360 uses a single-pixel SWIR sensor that rasters across the scene, measuring column-density values (ppm-m) on-camera. A built-in ultrasonic anemometer records local wind speed and direction, allowing onboard algorithms to convert each image into an estimated leak rate. Images plus diagnostic metadata (equipment ID, human presence, wind data, time stamps) stream immediately over LTE or Ethernet into Kuva's cloud. There, false-positive screening and advanced analytics generate actionable alerts via a web dashboard, email, MQTT, or API for further integration with SCADA, process data or other platforms.

Value Proposition: Able to autonomously survey up to 180 fields of view per hour and operate reliably from -40°C to $+55^{\circ}\text{C}$, the GCI360 platform delivers a 90 percent detection probability for leaks above 2.2 kg/hr, no false positives and precise leak pinpointing (METEC-validated), giving operators trust and confidence in Kuva detections and alerts, and corresponding RGB imagery provide rich context as eyes at the site. Operators configure zones, alarm thresholds, and animated image reviews via a user-friendly interface, then export CSV reports for regulatory compliance and emissions reporting. With deployments at over 30 upstream and midstream sites across North America, Kuva empowers a “see, size, solve” workflow—high-confidence detection, rapid root-cause analysis, and targeted field response without unnecessary site visits, all at a scalable, low cost, leading to efficient operations and emissions reductions.



Figure to Left: Kuva simultaneous detection of an open thief hatch (tank in centre) of methane and VOC emissions as well as a liquids spill from the tank on the right. After receiving our alert, the customer immediately dispatched a maintenance and cleanup crew, arriving within 30 min.

RECENT SUCCESSES

Since its founding, Kuva has secured strategic funding, regulatory approvals, and expanding market traction. In July 2024, the company received CAD 4.08 million in repayable funding from PrairiesCan's Business Scale-up and Productivity Program, complementing \$5.7 million from existing investors, to accelerate commercialization and grow its Calgary-based team. Six months later, in January 2025, Kuva won a USD 5 million contract from the U.S. Department of Energy's Methane Emissions Reduction Program to demonstrate its workflow automation across 175 oil and gas sites nationwide. These awards underpin rapid U.S. market entry alongside regulatory endorsements: to date, Kuva cameras are approved alternatives to in-person OGI inspections by Colorado's CDPHE, New Mexico's EMNRD, and Alberta's AER.

Commercially, hundreds of installations with more than 30 operators are in operation across North America, spanning well pads, compressor stations, flares and tank batteries. Field teams report a 90 % reduction in false alarms and up to a 90 % faster root-cause analysis, translating into fewer site visits and lower maintenance costs. By integrating with existing SCADA and asset systems via APIs, MQTT, or Azure Event Hub, Kuva has also begun pilots with service contractors and technology integrators in Australia and South America with other regions on the horizon . As global methane regulations tighten and voluntary carbon-intensity markets expand, these successes, backed by industry-leading site-survey volumes, position Kuva to drive operational efficiency, regulatory compliance, and export growth beyond its North American base. In June 2025, Sensiron Connected Solutions announced its acquisition of Kuva to create a comprehensive, scalable and flexible one-stop shop, giving oil and gas operators the tools they need to monitor, manage and reduce emissions.

PTAC's Contribution to Success: Kuva has collaborated with PTAC to foster a strong environment for technology development by engaging with end users, government funders, and innovation ecosystem partners. These efforts enhanced market understanding and supported broader technology deployment. Leveraging PTAC's platforms and projects, including domestic events, the Methane Leadership Summit, Digital Innovation Forum, TERE committee, AUPRF field testing and global conferences like CERAWEEK, Global Energy Show, COP 29, and the World Petroleum Congress, Kuva gained valuable exposure to both Canadian producers and international markets. These efforts have been instrumental in de-risking international market development and enabling a level of scale and visibility that the company could not achieve alone. These initiatives also diversify export opportunities beyond the U.S. while reducing financial risk through modest funding support. The outcome contributed to growth in sales and eSSmployment despite geopolitical headwinds, with continued expansion anticipated.



KUVA
GAS CLOUD IMAGING

"PTAC has played a valuable role in connecting Kuva with key stakeholders and platforms that helped us further market access and visibility for our advanced commercialized emissions monitoring technology."

- Monica Sippola,
Director of Business Development

A 360° camera system with on edge processing for continuous visual leak detection and quantification based on column density data.



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