

Natural Gas Emissions IoT Sensor Technology

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The Challenges

Increased awareness of the impacts of natural gas emissions creates an immediate need for distributed monitoring technology.

- Over 300k miles of pipeline used to transport natural gas across the United States
- Economic Cost of Methane Leaks: *\$2 billion/year*
- Natural gas extraction and transportation accounts for 30% of methane emissions
- Many thousands of sensors need to be deployed to accurately monitor emissions
- Sensors must be able to differentiate between various types of methane emissions
- Field technology must also be robust, cost-effective, and multi-purposed

The Solution

Internet of Things (IoT) Sensor Technology integrates sensors, machine learning, and internet connections for data collection on methane emissions.

- IoT sensors & partnership with SensorComm Technologies allows for unattended field measurements with data transmission over cellular networks to the cloud
- Able to identify simulated emissions from wetlands, bovines, and natural gas with *>99% accuracy*
- Data consistent with expensive, fragile and high maintenance laboratory instruments
- Future work includes a field test at the Colorado State University Methane Emissions Technology Evaluation Center