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March 9, 2026

Via Electronic Filing Only

Matthew L. Homsher, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pa. P.U.C. v. Columbia Gas of Pennsylvania, Inc.
Docket No. R-2025-3053499

Dear Secretary Homsher:

Enclosed for filing please find Columbia Gas of Pennsylvania, Inc.'s ("Columbia") internal Smart Remote Methane Detector pilot program feasibility study ("Study"). Columbia submits the Study for stakeholder comment pursuant to Ordering Paragraph 25 of the Public Utility Commission's December 9, 2025 Order in the above referenced matter.

Should you have any questions, please do not hesitate to contact the undersigned.

Very truly yours,

Candis A. Tunilo

/kak
Enclosures
cc All parties of record (via email)

Smart Natural Gas Detector

Feasibility Study

Columbia Gas of Pennsylvania, Inc.

121 Champion Way

Canonsburg, PA 15317

March 6th, 2026

1 Table of Contents

2 General Information

2.1 Purpose

The purpose of this feasibility study is to determine whether a pilot program utilizing Smart Natural Gas Detectors ("SNGD") is feasible and how Columbia Gas of Pennsylvania, Inc. ("Columbia" or "Company") would implement a SNGD pilot program. [1]

To determine whether a SNGD pilot program is feasible with Columbia, the SNGD technology must first be evaluated for performance and suitability for safe customer use. This feasibility study will summarize field testing that has been conducted on SNGDs, evaluate the availability of SNGD technology for potential deployment and then examine the costs associated with installing, maintaining, and monitoring the devices as part of a pilot program. The study further provides legal and regulatory considerations, operational constraints, and customer impacts in order to inform the pilot program's feasibility and how it could be implemented.

2.2 Scope

This feasibility study is limited to evaluating the feasibility of deploying smart natural gas detectors as part of a pilot program within Columbia's service territory. The study assesses the performance of the available technology in a field trial, the estimated costs associated with procuring, installing, monitoring, and maintaining the devices, and the operational and legal considerations that may affect implementation. The cost analysis is based on a limited scope of

[1] This feasibility study is intended to comply with the 2025 Pennsylvania Rate Case Order at Docket R-2025-3053499, which states that "within ninety (90) days of the entry of this Opinion and Order, Columbia Gas of Pennsylvania, Inc. shall initiate and complete an internal study to determine whether a pilot program utilizing Smart Remote Methane Detectors (SRMD) is feasible and how Columbia Gas of Pennsylvania, Inc. would implement a methane detector pilot program."

five hundred (500) SNGDs installed at selected customer locations, assuming a maximum of one detector installed per customer.

The pilot program is assumed to operate for a one-year period during which the 500 SNGDs would provide natural gas detection with audible alarms and be actively monitored by the Company through a centralized platform. Although the Company is monitoring alarms, customers are expected to respond to an alarm in the same way as if they smelled gas, and that expectation will be communicated to those participating in the pilot. Following the conclusion of the one-year pilot period, the detectors would remain installed within customers' homes and continue to function as stand-alone safety devices, providing local audible alarms in the event of elevated natural gas concentrations; however, further investment and evaluation would be required to continue the centralized monitoring after the one-year period.

These devices are assumed to not be connected to, or integrated with, the natural gas distribution system. At this time, Advanced Metering Infrastructure ("AMI") devices are not deployed across Columbia's territory, and therefore, the integration of SNGDs with AMI devices cannot be considered in this study.

This feasibility study does not evaluate costs incurred through the integration of the detectors with smart meters or other utility systems, the impact of any such costs on customers' rates, changes to workforce size or organizational structure, or modifications to existing emergency response or priority response processes. Impacts to external emergency responders, long term program expansion beyond the defined pilot, and broader customer enrollment strategies are also outside the scope of this study. The study is not intended to assess full program deployment or operational changes beyond those necessary to support the limited pilot evaluation.

2.3 Technology Overview

SNGDs are residential safety devices designed to continuously monitor indoor environments for the presence of methane. These devices are installed within a customer's home and are intended to provide early detection of elevated natural gas levels before they reach hazardous levels.

Unlike traditional stand-alone gas detectors, SNGDs can communicate alerts beyond the device. When methane concentrations exceed a predefined threshold, SNGDs will not only provide an audible alert but will transmit notifications through a connected platform to designated recipients, such as the customer or a centralized monitoring interface. The detectors operate independently of the natural gas distribution system and do not control, regulate, or shut off gas service. Their primary function is detection and notification, enabling earlier awareness of accumulating gas leaks and supporting timely emergency responses.

At this time, there is only one SNGD device available on the market. Due to proprietary concerns, the name of the specific model will not be referenced. This detector uses a nondispersive infrared sensor that is selective to methane, which reduces the likelihood of false alarms from other gases. When methane concentrations reach 10% of the lower explosive limit ("LEL"), the device generates an audible and visual alarm at the unit. When connected to the cellular network, gas detection events and device status information are transmitted to the vendor hosted monitoring platform. This platform allows for viewing real-time and historical data from all connected devices.

The available SNGD technology was field tested by Columbia, and the limitations experienced in these tests are detailed below in Section 3.3.1.

3 Feasibility Assessment

This section will analyze the costs incurred and limitations that would be experienced when implementing a SNGD pilot. These considerations are critical to understanding the feasibility of a SNGD pilot program in the Columbia footprint.

3.1 Objectives

A SNGD pilot program would seek to satisfy the following objectives:

- Early detection of natural gas leaks inside a structure with audible alarms, leading to earlier customer notification and evacuation;
- Centrally monitored gas alarms, leading to Company notification and reduced response time of emergency responders;
- Reduce overall risk of a release of gas inside of a structure where an SNGD exists by limiting the consequence of a leak due to earlier emergency response; and
- Validate assumed costs for installation, maintenance and monitoring of SNGDs.

3.2 Time and Resource Costs

This section provides estimates for both time and resource costs incurred through installation, maintenance, and monitoring of the SNGDs. These costs cover the largest categories of anticipated costs but are preliminary and not exhaustive.

3.2.1 Product Cost

The initial costs associated with the proposed pilot are driven primarily by the upfront capital investment required to procure SNGDs. Per the scope, approximately five hundred (500) units would be purchased for deployment at selected customer locations. Based on available market information, the estimated per unit cost ranges from $350-$450, resulting in an estimated total initial capital investment of between $175,000 and $225,000. This estimate reflects the one-time purchase of devices necessary to support the pilot and does not include downstream operational or lifecycle costs.

3.2.2 Installation Cost

Installation of the SNGDs will also result in incremental operational and maintenance costs. Consistent with the pilot scope, customers would be selected for participation, and customer communication that is needed to access the building interior would be conducted through direct mailings and emails. The labor and material costs associated with each mailing are estimated at $1.47, plus $0.40 for postage. Based on a deployment of approximately 500 detectors, the total cost attributable to customer notification is estimated at $936.

Employee training would be needed to ensure that employees know how to properly install SNGDs and well as reset them after an alarm. Since any employee in an operating area would need to be able to respond to a priority response and reset the detector, all service technicians within the area would need to undergo training. The training would take approximately one hour to conduct, and the average hourly rate of a technician is $55.00. In an average operating area, there are 35 technicians, resulting in a total estimated training cost of $1,925. This cost does not account for training new employees or any follow-up training that could be required.

Once access to the customer's home interior has been obtained, a Company technician will complete installation of the SNGD. Based on an internal field study, the installation process requires approximately one hour per location. This estimate includes identifying an appropriate installation location, securing the device within the structure, and establishing cellular connectivity to initiate monitoring. In addition, travel time to and from the customer location is estimated to average 30 minutes per installation. The total labor time associated with each installation, including travel, is estimated at 90 minutes. Based on an hourly truck cost of $82.83 (includes a fully-loaded technician's labor, insurance, vehicle, equipment and fuel), the estimated installation cost per detector is $124, resulting in a total estimated installation cost of $62,000 for 500 detectors.

3.2.3 Monitoring Costs

During the one-year pilot period, devices would be monitored by the Company through a centralized, cloud-hosted platform. Monitoring costs include connectivity, labor, and platform services. Each device would require an LTE-M cellular subscription at an estimated cost of $20-$25 per unit ($10,000-$12,500 for 500 devices). In addition, monitoring and response activities would be supported by two analysts for 24-hour monitoring, with an assumption that it would consume 10% of the work day. Assuming an average annual salary of $102,800, the total cost for labor due to monitoring would be $20,560.

SaaS hosting and software licensing fees would typically be assessed on a per-unit basis. However, these fees are waived for the duration of the one-year pilot. If the pilot were expanded, ongoing software licensing costs would need to be evaluated. This analysis assumes continued use of the vendor-hosted SaaS platform; bringing monitoring in-house would result in additional IT costs that are outside the scope of this study.

3.2.4 Operational Costs

Following a detection event at least 10% LEL of natural gas, the SNGD enters an alert state and requires a manual reset. Resetting the device requires disconnecting and reconnecting the internal battery, which would be performed by a service technician during a response to a priority response event.

For the duration of the pilot program, Service Technicians would need to respond to detector alarms. Each response would require a technician to travel to the customer's location, investigate the alarm condition, and reset the device as needed. Based on limited field testing and the proposed deployment of 500 detectors, the frequency of alarms exceeding 10% LEL is expected to be low, with fifteen or fewer such events anticipated during the one-year pilot period.

The cost to respond to a detector alarm is assumed to be equivalent to the unit cost for installation, as described in Section 3.2.2, and reflects a fully loaded one hour technician truck ($82.83). Based on an assumption of 15 alarms during the pilot period, the total operational cost is estimated at $1,242. Actual costs will vary based upon the actual number of times alarms are received.

3.2.5 Total Estimated Pilot Program Costs

The estimated costs associated with a one-year pilot deployment of 500 SNGDs are summarized in Table 1. These estimates reflect preliminary assumptions and are intended for the purposes of this feasibility study only.

Table 1: Estimated Pilot Program Costs

Cost Category	Description	Estimated Cost
Device Procurement	One-time purchase of 500 smart natural gas detectors	$225,000
Installation	Technician labor and travel for installation at customer locations	$62,000
Training	Employee training for installation and detector resets after alarm	$1,925
Customer Notification	Mailings to notify customers of their selection for the pilot	$936
IT Costs	Cellular subscription (SaaS fees waived during pilot)	$12,500
Monitoring	Analyst labor for monitoring	$20,560
Operations / Response	Estimated response to approximately 15 alarm events during the pilot period	$1,242
Total Estimated Pilot Cost		**$324,163**

The Company requests approval of these, as well as any currently unknown but reasonable and prudent pilot program costs for recovery in rates. Columbia would seek recovery of the actual costs in a future rate case filing.

3.3 Areas of Feasibility

The feasibility of a SNGD pilot is influenced by a range of technical, regulatory, operational, and customer-related factors. The following subsections outline the primary considerations within

each area and identify constraints that may impact implementation of the proposed pilot program.

3.3.1 Technical

Limited lab testing of smart natural gas detector technology was performed in November 2025 with subsequent communication testing, which remains ongoing. The purpose of this testing is to evaluate the performance of commercially available and in-development SNGDs under controlled and monitored conditions. The testing includes controlled releases of methane to measure detection and quantification of natural gas, local audible alerting and dashboard communication over the network. Testing of communication reliability is ongoing in order to identify technical and operational limitations prior to pilot implementation.

As a result of these trials, several technical challenges and limitations were revealed. These findings are summarized below.

- **Communication Failures.** Observed intermittent periods where the devices missed scheduled call-ins to the central monitoring hub, even with a measured “good/fair” cellular network connection. These misses raise concern regarding the consistency of device status reporting.

- **Accessibility.** The commercially available device’s audible instructions were found to be unclearly heard due to low volume during lab testing. Placing the SNGD outside of a home's living spaces (i.e., the basement) may also make it difficult to hear instructions. While the alarm beeps were sufficiently loud to be noticeable, the lack of clearly heard audio guidance could create confusion for customers during alarm events. Additionally, the device relies primarily on audible alerts to notify customers of elevated natural gas concentrations. As there are no alternative notification methods, customers with hearing related disabilities may not be able to respond

properly. This limitation affects the accessibility of SNGDs for certain customers and introduces additional considerations related to equity and customer experience.

- **Accuracy.** On several occasions, a device alarmed prior to reaching 10% LEL, based on three sustained readings. Early alarming (beginning below the 10% LEL threshold) is utilized by the manufacturer to counteract any drift that may occur as the device ages, but could increase the likelihood of nuisance alarms, potentially leading to unnecessary emergency responses, increased operational costs and reduced customer confidence.

Overall, these findings indicate that while SNGDs show value, additional testing and refinement are highly recommended to address communication reliability, accessibility and accuracy before broad deployment is considered. The SNGD models evaluated to date need time to mature and improve, and these considerations will be monitored during the pilot.

To that end, Columbia is continuing to evaluate the viability of SNGDs by partnering with the Gas Technology Institute's Operations Technology Development group ("GTI"/"OTD") on OTD project 5.25.m. OTD is a not-for-profit natural gas industry research & development corporation comprised of a consortium of approximately 30 gas utilities. The 5.25.m project will test the accuracy, connectivity, and overall suitability of two network-connected LTE-M natural gas detectors, resulting in a formal report documenting how the devices perform relative to a predefined testing plan and established success criteria.

3.3.2 Cost Recovery

The Company would seek recovery of the costs associated with the pilot program through its next base rate case.

3.3.3 Customer vs. Operator Responsibilities

In many instances, SNGDs may activate in response to gas originating from customer owned piping, appliances, or other components located downstream of the meter. These sources fall under the responsibility of the property owner and not the operator. The potential safety benefits of SNGDs are also shaped by factors such as installation practices, building configuration, ventilation patterns, and ongoing maintenance. These conditions are typically controlled by the homeowner or property manager, not the operator. For these reasons, it is essential to acknowledge that SNGDs complement, but do not replace, odorization as the most effective means of identifying the presence of natural gas. Acknowledging this divide is critical. While operators can increase public awareness and encourage the use of SNGDs, the responsibility for addressing leaks on the customer's side of the meter remains with the property owner.

3.3.4 Customer Feedback

Columbia would seek feedback from customers who participate in the pilot to gain further insights. Deployment of a smart natural gas detector pilot may have both positive and negative implications for customers. The use of connected devices may raise customer concerns related to privacy, requiring transparent communication to mitigate any concerns.

4 Recommendations

4.1 Recommendation

Based on the findings outlined in this feasibility study, Columbia is prepared to move forward with a one-year Smart Natural Gas Detector pilot program, as set forth above, if the program costs may be recovered in full in Columbia's next base rate filing. While widespread deployment of a SNGD program currently presents challenges, the technology has demonstrated potential safety benefits. Technical, jurisdictional, and customer considerations indicate that further analysis is required to ensure the viability of a broader scale deployment beyond the proposed pilot. Additionally, AMI deployment in Columbia's service territory could impact the challenges identified. Columbia welcomes this opportunity to partner with the Commission to gather additional information about the viability of widespread use of Smart Natural Gas Detectors.

4.2 Recommended Actions

To be properly positioned for a SNGD pilot, the following actions are recommended:

- **Complete Additional Technical Validation.** Continue participation in GTI/OTD Project 5.25.m and evaluate results to confirm improvements in device accuracy, alarm thresholds, and reliability of cellular connectivity;

- **Address Accessibility Limitations.** Assess whether alternative notification methods or accommodations are available to ensure the technology does not exclude customers with hearing-related disabilities; and

- **Develop Customer Selection and Communication Strategy.** Establish clear criteria for customer participation and develop transparent messaging for those that are selected for the program.

Completion of these actions would provide greater insight into the feasibility of a pilot program and reduce the potential barriers identified in this study.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

VIA E-MAIL

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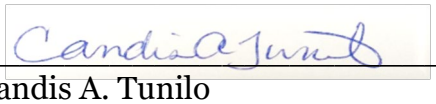

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