

# Controlled release testing of commercially available methane emission measurement technologies at the TADI facility

## Response to Reviewer Comments

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We thank the reviewers for their thoughtful and constructive review of our manuscript. We appreciate their recognition of the experimental design, thoughtful discussion, and the importance of our findings regarding the current state of methane quantification technologies. Below we address each specific comment.

We believe these revisions will strengthen the manuscript and improve its clarity. We look forward to submitting the revised version.

### Reviewer 1 Comments received October 3, 2025

Reviewer Comment	Author Response	Edit
<i>Lns 11 &amp; 63 &amp; 340: Remove all reference to academic in this paper. The study tested commercial techniques and the quantification codes are not provided in the manuscript or supplementary information. I understand the results from academic teams will be presented in an accompanying paper. I'm not sure "public" adds much – it what way?</i>	Accepted	Removed all references to “academic” and “public” from the paper
<i>Ln 12, This not the first blind methane detection and quantification study in Europe. Please refer to Liu et al (2024) AMT 17, 1633–1649, 2024.</i>	Accepted	Added reference on P3 L54
<i>Ln 27, ...have contributed</i>	Accepted	Updated L27
<i>Ln 28, ...pre-industrial time, and given ...</i>	Accepted	Updated L28
<i>Ln 34, U.S. Inflation Reduction Act – I'm not sure this is a relevant example anymore given recent developments.</i>	Accepted	Removed reference
<i>Ln 140, Table 2 can be moved to the supplementary information. Not contributing much for the reader here.</i>	Accepted	Data contained in SI Table 23-24.
<i>Ln 158, Table 3 delete columns 2-5 and replace with a single column with the number of estimate submissions. Data is repeated in a different form in columns 6-9.</i>	Accepted	Updated Table 3 (Table 2 in revised document)
<i>Ln 180, This figure and its caption are confusing – please remove. Table 3 is a more useful summary of false positives etc.</i>	Accepted	Moved to SI Section 5 with updated legend and revised caption (SI Figure S17)

<i>Ln 219-223 and Table 4. It would be interesting to include a column that shows the “Participant estimates within +/- 10% of the true value” and provide a short discussion. This is the kind of number that regulators have in mind and it would be good to show just how problematic this is. If not 10%, check relevant policy documents to see what recent expectations are.</i>	Accepted	Updated Table 4 (Table 3 in revised document) and added in discussion (lines 353-359).
<i>SI P35, “Names of individual personnel not required” &amp; P36-43, Remove references.</i>	Accepted	Updated on P35 and P36-43

## **Reviewer 2 Comments received November 3, 2025**

<b>Reviewer Comment</b>	<b>Author Response</b>	<b>Edit</b>
<b>P5, L95:</b> <i>It might be worthwhile listing the academic teams and their technologies as well, to get a better overview – potentially in the supplement.</i>	Accepted	Added to SI Table S9
<b>Fig. 2:</b> <i>What does the dark blue bar represent in the diagrams? Why is there a split at 50 kg/h? Although, as the other reviewer mentioned, this figure is not easy to grasp at first, it nicely shows the different types of detection (TP, FP, FN) in terms of release rates.</i>	Accepted	Moved to SI Section 5 with updated legend and revised caption (SI Figure S17)
<b>P12, L247:</b> <i>Please define CoV.</i>	Accepted	Defined in L292
<b>P13, L251:</b> <i>What do the authors mean by 'aggregate'? Are they referring to binned winds?</i>	Accepted	Added definition after “aggregate (i.e. analysis performed on the combined quantification estimates of all the teams)” L293
<b>P16, L340f:</b> <i>I could not find any analysis of observations among the eight commercial systems that classify as 'aircraft' or 'vehicle' in this work. Please remove them from the list throughout the text.</i>		Removed from L61 and L395 and
<b>P17, L370f:</b> <i>I do not understand why “the study design focused on mobile ground-based solution” although the analyzed technologies were either airborne (or even space-born) or continuous monitoring, at least, in this work. Did the academic teams (not evaluated here) primarily deployed mobile ground-based solutions?</i>	Accepted	Added clarification (i.e. drones) and removed aircraft and satellite on L427
<b>P5, L94:</b> <i>I could not find SI Section 1.2.2 in the Supplement.</i>	Accepted	Updated to point to appropriate section (1.3-4)
<b>h vs. hr:</b> <i>Please use common units for hour.</i>		Updated on L292, L293, L217, Figure 3, and SI

<b>Table 4:</b> <i>Shift text below Table to caption or use footnotes.</i>	Accepted	Added in footnotes
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